

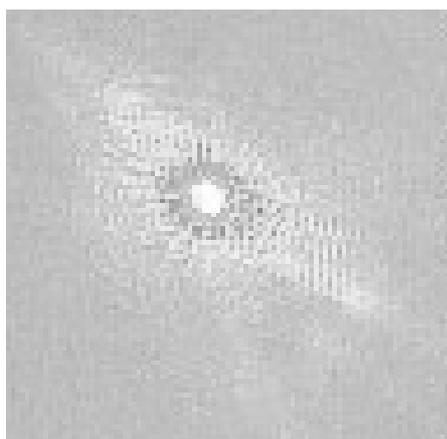


"ICO, The place where the world of optics meets"

TOWARDS ICO-20

EN ROUTE VERS CIO-20

JUNE 2005



Edited by the ICO Secretary
Maria L. Calvo
Madrid, Spain

*The anagram is the pattern of a green
laser beam after free propagation*



"ICO, The place where the world of optics meets"

TOWARDS ICO-20

EN ROUTE VERS CIO-20

JUNE 2005

President

Prof. **R. DÄNDLIKER**, Institute of Microtechnology, University Neuchâtel, CH 2000 Neuchâtel, Switzerland

Past President

Prof. **A.H. GUENTHER**, University of New Mexico, 1313 Goddard, SE, Albuquerque, New Mexico 87108, USA

Secretary

Prof. **M.L. CALVO**, Universidad Complutense, Departamento de Optica, Facultad de Ciencias Físicas, E 28040 Madrid, Spain, phone +34 91 394 4684, fax +34 91 394 4683, mlcalvo@fis.ucm.es

Associate Secretary

Prof. **A.T. FRIBERG**, Royal Institute of Technology, Dept of Microelectr. and Information Technology, Electrum 229, SE-164 40 Kista, Sweden, fax +46 8 789 6672, ari.friberg@imit.kth.se

Treasurer

Prof. **G.T. SINCERBOX**, University of Arizona, P.O. Box 32576, Tucson AZ 85751-2576, USA

IUPAP Council Representative : **Y. PETROFF**, France

Vice Presidents, appointed :

SPIE : **H.H. ARSENAULT**, Canada
OWLS : **G. VON BALLY**, Germany
OSA : **A.A. SAWCHUK**, USA
EOS : **T. TSCHUDI**, Germany
LAM : **A. WAGUÉ**, Senegal
IEEE/LEOS : **A.M. WEINER**, USA

Vice Presidents, elected :

Prof. **A.A. FRIESEM**, Israel
Prof. **N. GAGGIOLI**, Argentina
Prof. **G.F. GIN**, China
Prof. **B.Y. KIM**, Korea
Prof. **M. KUJAWINSKA**, Poland
Prof. **G.C. RIGHINI**, Italy
Prof. **L. WANG**, the Netherlands
Prof. **I. YAMAGUCHI**, Japan

TABLE OF CONTENTS

Part I: Triennial Report of ICO:	1
Triennial Report of ICO to IUPAP	2
Member contributions	9
ICO Bureau Meetings minutes	15
Finances	68
Committee Reports and Awards:	71
ICO Nominating Committee	71
Regional Development for Optics	72
Travelling Lecturer Committee	74
ICO prize	76
ICO Galileo Galilei Award	80
ICO/ICTP Award	86
Meetings and Schools with ICO Participation	90
Meeting Reports:	97
2002-2003-2004-2005	97
Meeting series	108
Other Reports:	112
ICO/ICTP	112
Part II: Meetings Procedures:	119
ICO Congress and Major Event information	120
ICO Consponsorship information	123
Steering Committees	125
Part III: The Organisation of ICO:	126
Statutes	127
Rules and Codes of Practice	132
Membership	147
ICO Bureau and Committees	155
Previous ICO Bureaux	160
Part IV: The 2005 General Meeting:	165
2002 General Meeting minutes	166
Agenda of the 2005 General Meeting	177
Budget plan for 2006-2008	178

PART I: ICO TRIENNIAL REPORT

TRIENNIAL REPORT OF THE ICO TO IUPAP FOR 2002-2005

Introduction

ICO, the Place where the World of Optics meets, this is the vision statement proclaimed at the ICO Bureau Meeting 2002 in Florence. However, the worldwide scientific exchange did change drastically after September 11, 2001, under the influence of the restrictions on travelling, visa and scientific publications introduced by the US Department of Treasury Office of Foreign Assets Control (OFAC) and the US Departments of State and Homeland Security. Thanks to joint political actions of some of our US based international society member with other US academic and scientific institutions, these sanctions have been partially released since their initial introduction. Besides political also economical and commercial events have significantly marked the optics community: the decline of the information technology boom and its consequences for the optical telecommunication industry. However, the role of optics as an interdisciplinary and enabling field of science and technology has been proven by its contributions to the development and success of the emerging fields of nanoscience, in the control of feature sizes smaller than micrometers and the manipulation of individual objects such as atoms and molecules, and the most challenging domains of the life sciences, including biology and medicine. The explosive growth of optics and photonics as a major technical field positively influencing our quality of life as well as being an economic stimulus has continued during the first years of the 21st Century.

Optics as a branch of science and technology has changed considerably since the creation of the ICO in 1947 and, while remaining a branch of physics, it now encompasses fields of science and engineering that directly address the needs of society and development, and this in a scientifically and technically quite sophisticated way. For this reason and for the interdisciplinary aspect of optics as an enabling field of science and technology, ICO has applied now for the status of an ICSU international scientific associate, at the same time wishing to retain its status as an IUPAP Affiliated Commission. We hope that this application will be received favourably by the ICSU and supported positively by the IUPAP.

The main objective of ICO remains: **Global Promotion of Optics**, as stated in article 1 of the statutes. The strength of ICO is the nearly complete global coverage by its Territorial Committee Members and the affiliation to the International Union of Pure and Applied Physics (IUPAP), and through IUPAP to the International Council for Science (ICSU). The weakness of ICO is the lack of individual members and the very limited financial resources (\$ 33'000/year).

ICO activities, 2002-2005

Within this triennium the ICO continued to fulfil its mission to contribute, on an international basis, to the progress of the science of Optics and its applications following the lines established by its Long range planning committee, as reported in the green book "Towards ICO-19", June 2002. In particular, the ICO promotes international co-operation and facilitates the rapid exchange of information, by encouraging and furthering the organization, on an international basis, of scientific meetings and summer schools. It emphasizes actions for the education and training in Optics internationally. It develops special actions for the development

of Optics in regions where particular support is needed. It strives to improve the recognition of Optics as a field of science with a significant impact on economy.

With the admission of 3 new Territorial Committee Members (Estonia, Latvia, Lithuania), 2 new International Society Members (LAM: African Laser, Atomic, Molecular and Optical Sciences Network and OWLS: Optics within Life Sciences) and 3 new Associated Members (Greece, Tunisia, Morocco) and the geographical distribution of the Bureau members (Argentina, Canada, China, Finland, Germany, Israel, Italy, Japan, Korea, Poland, Senegal, Spain, Switzerland, The Netherlands, USA) the ICO has further improved global coverage on the possibilities to fulfil its mission. To further improve the exchange of information between the ICO Bureau and the Territorial Committee Members, each elected Vice-President has been asked to accept responsibility for personal and regular contacts with about 6 Territorial Committees. Every Territory has now a direct contact with at least one member of the ICO Bureau.

In addition to its Triennial Congress, which was organized in August 2002 at Florence, Italy, the ICO initiated again international topical meetings and acted as a cosponsor for a number of international scientific meetings organized by other bodies. In the last three years, ICO participated or was associated with a total of 21 scientific meetings and schools, of which 8 in Europe, 5 in Asia, 3 in the USA and Canada, 3 in Latin America, and 2 in Africa. With the selection of Chanchung as the location for its next Triennial Congress, 21-26 August 2005, on "Challenging Optics in Science and Technology", the ICO wants to support and emphasize the importance of China as a rapidly developing country, both economically and scientifically.

Most activities have been focused on two priority areas: developing nations, and education and training in optics. The long standing collaboration with the ICTP, the Abdus Salam International Center for Theoretical Physics in Trieste, was continued and even intensified by participation in the newly founded TSOSA Advisory Group. TSOSA stands for "Trieste System for Optical Sciences and Applications". The mandate of this Advisory Group is to create actions on Optics and Photonics in developing countries, proposing subjects for future Winter Colleges, training courses of ICS, Sandwich programs, and in general, external activities relevant to the Trieste System to be exported to developing countries. The members of TSOSA Advisory Group are representing IAEA, ICO, IEEE/LEOS, OSA, OWLS, SPIE, UNESCO, and the Trieste System itself. They will meet every year during the Winter College on Optics in Trieste. The topics of these Winter Colleges were 2003 "Optics in the Life Sciences", 2004 "Interferometry and its Applications to Modern Physics", and 2005 "Nanophotonics". On these occasions the ICO/ICTP Awards for outstanding young scientist conducting research in a developing country were handed over to the Laureates.

In order to support the development of optics in Latin America, the ICO Bureau had its annual meeting at the RIAO/OPTILAS 2004 conference in Porlamar, Venezuela, preceded by a conference on "Optics, Life and Heritage" in Havana, Cuba. The Galileo Galilei Award winner 2003 was invited at Porlamar to present his outstanding contributions to the field of Optics, which he had accomplished following the rules of this Award under comparatively unfavourable circumstances. A report on Optics in Latin America was already published in the ICO Newsletter January 2003.

The ICTP sponsored African Laser, Atomic and Molecular Physics and Optics network, LAM, is now an International Society Member of ICO. Important events were the LAM-6 and LAM-7 Workshop, 2002 in Tunis and 2004 in Duala, Cameroon, respectively. The Moroccan Society of Optics did organize a School of Lasers, in December 2003 at Tangier, with participants from the Maghreb, Egypt and Senegal. ICO is also associated with the African

Laser Center (ALC) initiative of the South African government. The intention of this initiative is to assist in the development of several optics centers around the African Continent allowing for equipment sharing and operations at different locations.

For the Regional Development of Optics ICO has continued a proceedings donation programmed for libraries in developing countries and an invited lecturer programmed covering partial expenses for guest lecturer in regions of the world requesting special support. In collaboration with OSA and SPIE there have been activities for distributions of educational kits available in English, Spanish and French. An equipment donation program for developing countries is also under discussion. However, to ensure feasibility the problems of customs have to be solved as well.

One of the most significant conferences supported by ICO in collaboration with SPIE and OSA are the Conferences on Education and Training in Optics and Photonics (ETOP), whose eighth edition convened during 2003 in Tucson, Arizona. This meeting was devoted in large part to sharing information and concepts which are of potential use in growing a credible workforce both at the technician and professional levels, a major area of endeavour by ICO.

The ICO was alerted in an official letter by the Iranian Territorial Committee to the impact of the sanctions introduced by US, concerning US international societies, for which scientists from certain countries (as Iran) were not admitted for regular membership and suffered restrictions on travelling, visa and scientific publications. Copies of this letter were sent to the representatives of our US based international society members OSA, SPIE and IEEE/LEOS, as well as to the IUPAP representative. To the present time, no satisfactory answers were received. Nevertheless, thanks to joint political actions with other US academic and scientific institutions addressed to the US Government, these sanctions have been partially released since their initial introduction. The ICO Bureau insists on the fact that all members of the International Council for Science (ICSU) accept the basic principle of the universality of science, which affirms the right and freedom of scientists to associate in international scientific activity without regard to such factors as citizenship, religion, creed, political stance, ethnic origin, race, colour, language, age or sex. Such rights are embodied in a variety of articles in the International Bill of Human Rights.

The General Assembly of the ICO has appointed its Bureau to apply for the status of an ICSU International Scientific Associate. After some informal contacts during the last few years, the ICO Bureau has now finalized the application. It has been deposited and received by ICSU in February 2005, supported by an extensive document describing optics as a branch of science and engineering with interactions both within physics and outside physics. Most of the ICO members, as well as the majority of scientists and engineers working in optics, identify themselves more directly with optics as a field than with optics as a part of physics. Optics plays also an important role in chemistry, biology and medicine. We believe, that it is therefore appropriate that optics be recognized within ICSU as an interdisciplinary field of its own right.

The ICO decided at its Bureau meeting in Porlamar, to contribute to the World Year of Physics 2005 with a joint action of all its Members. The main goals of this action are to

- emphasize the importance of Optics as a branch of Modern Physics
- give the ICO, the place where Optics meets, world wide visibility

We will announce all ICO sponsored and endorsed conferences in 2005, in particular the ICO-20 conference, as events of the WYP2005. We encourage all our Members to declare and announce optics events as a contribution of Optics to the WYP2005. In particular, this request is addressed to our Territorial Committees for their local optics events to promote Optics as an

important branch of modern physics throughout the world, including the developing countries. For this purpose the ICO has created a joint logo of ICO and WYP2005.

The ICO website at www.ico-optics.org has additional information on its activities and the ICO Newsletters, published quarterly.

About Optics in 2004

(Extracted from reports for IUPAP and ICSU prepared by Pierre Chavel)

While a number of neologisms such as photonics, optronics, optoelectronics have appeared to describe activities closely related to optics, it should be made clear from the outset that Optics is taken here in its broadest sense, defined as “the field of science and engineering encompassing the physical phenomena and technologies associated with the generation, transmission, manipulation, detection and utilization of light and extending on both sides of the electromagnetic spectrum as far as the same concepts apply”. One measure of its relevance in the context of world Science is the large number of scientific periodicals dedicated to pure and applied optics and its relation to interdisciplinary fields in science and technology. Moreover, Optics extends nowadays from X-rays and even gamma rays to the very long wave of interest in radioastronomy.



Stepping back to embrace a global view of the field, lessons from the past may be helpful. In 1948, the founders of International Commission on Optics selected for discussion at their first technical meeting such topics as the accommodation of the human eye and its resolving power, the combination of aberrations and diffraction, the design of microscope objectives, interferometers for testing camera lens aberrations, elements of thin film design, diffraction gratings, and new inorganic and polymer glasses. To many, optics is still encompassed by such a set of topics. Yet, when comparing this list with the scope and state of the art of optics today, two

major facts appear quite conspicuously.

Firstly, it is indeed true that there has been progress in all of these fields, notably in the following ways:

- The human eye optics is being investigated by adaptive optical systems, where a deformable mirror compensates the aberration of ophthalmic media to focus and scan a diffraction limited spot on the retinal cells. Whether adaptive optics will ever be fitted to our spectacles and provide diffracted limited imaging to everyone is a meaningful open issue.
- The most complex optical systems ever built provide $f: 0.5$ diffraction limited imaging at ultraviolet wavelengths over several square centimetres for the replication of computer chip masks. Thin films can be designed and fabricated in stacks of nearly one hundred layers to match virtually every conceivable spectral reflectance profile, covering not only the visible, near infrared, thermal infrared and near ultraviolet parts of the spectrum, but the extreme ultraviolet in the 5 through 60 wavelength nm range (20 through 250 electron-volts), which is expected to be of relevance to future lithography systems.
- Interferometers are available in all sizes from submicron Fabry Perot cavities of interest in telecommunication optics to gravitational wave sensors with kilometres long arms. Diffraction optics has evolved from gratings into holography and lens achromatisation.

Micro-opto-electro-mechanical systems (sometimes called MOEMS) offer, as an example, Michelson interferometers for Fourier transform spectroscopy integrated in square millimetres. On the theoretical side, progress on the relation between the emission of light and coherence has been significant with the recent understanding of the role of surface waves and near field effects in the spatial and temporal coherence of thermal sources.

- Optical materials extend beyond glasses to include non-linear crystals, rewritable holographic materials such as photo-refractive crystals, liquid crystals and polymer light emitting diodes. The latter might well invade our daily life for a better energy yield and a longer lifetime of our lamps. At its turn, new hybrid organic-inorganic optical materials are certainly promising for near future optical computing technologies.
- Ten meter mirror telescopes, always fitted with adaptive optics facilities to compensate for atmospheric turbulence, combine their images coherently over distances larger than 100 m. In 2003, some of the first images from the European Southern Observatory “Very Large Telescope” in Chile provided clear and nearly direct evidence of a black hole in the very centre of our galaxy through analysis of the motion of the visible stars closest to it. Planets outside the solar system are now counted by three digit numbers: even larger optical arrays are currently at the planning stage with the hope to provide evidence of terrestrial planets where life may exist in a form similar to ours. In these technologies, adaptive optics is now playing a leading role for image quality improvements in astronomical image techniques, by correcting the undesirable influence of the terrestrial atmospheric turbulence on image formation astronomical systems.

Secondly, optics now encompasses much more than its content at that time: completely new domains have arisen. In 1948, nobody predicted the advent of the laser that was to occur just twelve years later, or the key role that optics plays in present information systems and in particular telecommunication. Imaging below the standard diffraction limit and into the nano-world seemed impossible. By emphasizing these aspects in the following sections, we shall undoubtedly fall short of many forthcoming revolutionary changes, but we shall illustrate the new interactions between optics and various other branches of science and engineering, concluding with its relevance to life sciences.

Lasers:

The diversity of lasers is an indication of their wide variety of uses, ranging from basic science to many branches of engineering. We shall examine just a few.

Extremely short pulses have reached the range of attoseconds, at least through nonlinear transients in high power femtosecond pulses. The latter, when obtained through carefully designed mode locking, have shown unexpected reproducibility and offer the promise of the most accurate clock ever thought of, down in the 16 significant digit range.

Cold atom experiments and the rise of atom optics, a new field of physics which was recognized by the 1997 Nobel Prize in Physics being awarded to S. Chu, C. Cohen-Tannoudji and W. Phillips, rely in part on the mature state of laser instrumentation. Appropriate cooling and trapping drives sets of atoms to the coherent state of Bose Einstein condensates, where all atomic wave functions widely overlap and all atoms are in the same quantum state. “Atomic lasers” derived from such condensates by allowing a small leak through a radio wave frequency magnetic transition, now a research tool, may some day turn into the ideal source for single atom nanosciences. At this time, cold atoms provide by far the most sensitive gyroscopes, with industrial applications in sight.

Information Optics:

For some time, the prospect of optical computers competing with electronic computers was a favourite topic in popular sciences magazines. In a much more mature way, the role of optics in information technology has now been developed and is still developing in directions where the low interaction between photons and the large bandwidth available around optical carriers are best exploited, opening a field now designated by specialists as “Information Optics”.

Optical telecommunications, currently the standard for all long-distance data and voice transmissions, directly derive from those arguments. Materials improvements in the absorption and dispersion of optical fibres led to the first optical communication links around 1980. The replacement of multimode fibres by monomode fibres allowed reduced dispersion and better signal quality. The advent of fibre amplifiers around 1990 provided an efficient way to increase the optical telecommunication bandwidth. Further progress arose around 2000 from the simultaneous transmission of several signals coded on different wavelength channels in one fibre (“wavelength division multiplexing”), giving access to demonstrated capacities in the range of terabits per second (equivalent to about hundred millions of telephone conversations) on one single cable.

Compact disk memories are another clear case of the interaction of optics with other fields of science and engineering, in this case materials science, mechanics and microelectronics, to produce a high-tech product line with significant consequences on economy and society. Optics in the current compact disk is involved in focusing and tracking. Reading head optics have undergone a miniaturization that pioneered micro-optics in commercial systems. Materials science contributed write-once and rewritable media as well as wide gap semiconductors to reduce wavelength and thereby increase the diffraction limited information density.

Optics and the nano-world:

There seem to be three, not completely identical, definitions for the use of the prefix “nano” in relation with physical objects. One is the control of feature sizes smaller than micrometers by some specified arbitrary amount. The second is the investigation of effects that show up only at length scales smaller than some physical parameter typically in the nanometre to micrometer range. The third pertains to the manipulation of individual objects, usually atoms and molecules. Occasionally, controversies arise between advocates of the various definitions. However, 2004 optics is involved in all three cases.

It is well known that colour interference effects appear for optical path delays on the order of micrometers, that gratings show widely dispersed spectra of visible light when their spatial frequency reaches hundreds of lines per millimetre, and that butterfly and bird wings with complex submicrometer structures show striking bright colours whose full understanding is still progressing. However, the fabrication of 1D, 2D and 3D diffraction gratings, thin film layers, planar waveguides, and indeed semiconductor layers of characteristic dimensions smaller than micrometers has developed dramatically in the recent years.

One major effect involved in structures smaller than the wavelength of the illuminating light is the optical near field, i.e. the combination of evanescent waves needed to fulfil Maxwell’s equations in such objects. Their control through computer modelling, through adequate fabrication tools, and their investigation by near field optical microscopy techniques are all recent achievements of optical science. Indeed, realizing that optical imaging could exceed the standard diffraction limit by exploring objects at a sub-wavelength distance from their surface came as a revolution to many.

Finally, manipulating single atoms and single molecules through their fluorescence properties or in optical tweezers is characteristic of the current trend of nano-optical research.

Optics in life sciences:

In many respects, the recent progress of Optics in domains such as those mentioned above bears implication to life sciences way beyond standard microscopy. Indeed, the term “biophotonics” has been coined recently, not as much to designate a separate new branch of science as to testify of the fact that there is considerable room for progress of optics before all its potential application to life sciences have been taken to fruition.

While standard microscopy has reached its diffraction limit for decades, many microscopy techniques have been developed to better suit the needs of biology and acquire data that were previously not accessible. These include fluorescence microscopy, multiple photon fluorescence microscopy, confocal microscopy, Raman microscopy. Sophisticated fluorescent techniques are being used both for biological research and are likely to become standard diagnosis procedures. Individual molecules or markers are readily accessible to fluorescence imaging.

An additional important imaging modality, applicable to organs and other strongly diffusive media, is optical coherence tomography, now already a commercial standard for retina imaging, where the data of interest are sliced by their interference contrast with a reference.

René Dändliker, President ICO



OPTICS IN THE WORLD YEAR OF PHYSICS 2005

The ICO decided at its Bureau meeting in Porlamar (Venezuela) on October 8-9, 2004, to contribute to the United Nations International/World Year of Physics 2005 with a coordinated and joint action of all its Members. The main goals of this action are: to emphasize the importance of Optics as a branch of Modern Physics and to give the ICO, the place where Optics meets, visibility at world wide scale.

1.- The United Nations International/World Year of Physics 2005: At the occasion of the World Congress of Physical Societies, in Berlin December 2000, more than 40 physical societies from around the world approved the proposal to declare 2005 as the World Year of Physics. This was followed by the approval of the EPS Council (March 2001) to mobilize support in Europe for this initiative. In October 2002, the International Union of Pure and Applied Physics (IUPAP) unanimously adopted a resolution declaring 2005 as the World Year of Physics. A number of international organizations (including the ICO) have already expressed their support for WYP2005. The 32nd session of the General Conference of UNESCO adopted in November 2003 a resolution supporting the initiative of 2005 as the World Year of Physics. On June 10, 2004 the General Assembly of the United Nations approved by acclamation the following declaration for the United Nations International Year of Physics.

The General Assembly of United Nations,

- *Recognizing* that physics provides a significant basis for the development of the understanding of nature,
- *Noting* that physics and its applications are the basis of many of today’s technological advances,
- *Convinced* that education in physics provides men and women with the tools to build the

scientific infrastructure essential for development,

- *Being aware* that the year 2005 is the centenary of seminal scientific discoveries by Albert Einstein which are the basis of modern physics,
- 1. *Welcomes* the proclamation of 2005 as the International Year of Physics by the United Nations Educational, Scientific and Cultural Organization (UNESCO);
- 2. *Invites* the United Nations Educational, Scientific and Cultural Organization to organize activities celebrating 2005 as the International Year of Physics, collaborating with physics societies and groups throughout the world, including in developing countries;
- 3. *Declares* the year 2005 as the International Year of Physics.

The World Year of Physics 2005 is an international celebration of physics. All organizations and groups interested in promoting physics are encouraged to organize events under the WYP2005 banner. The members of the International Advisory Committee will organize events in their countries in the field of physics. The International Committee will ensure the flow of ideas and information about these activities via the website: www.wyp2005.org. Many of the activities of WYP2005 will be sponsored by participating organizations.

2.- The ICO contribution to the WYP2005: We will announce all ICO sponsored and endorsed conferences in 2005, in particular the ICO-20 conference "Challenging Optics in Science & Technology", August 21-26, 2005, Chang Chun, China, as events of the WYP2005. We will encourage all our Members to declare and announce optics events as a contribution of Optics to the WYP2005. In particular, this request is addressed to our Territorial Committees for their local optics events to promote Optics as an important branch of modern physics throughout the world, including the developing countries.

3.- The technical procedure for public announcement would be just to adopt the official logos of the WYP2005 and of ICO in all official advertisements and documents of the event. For this purpose the ICO has created a joint logo of ICO and WYP2005 (get it from the ICO website: ww.ico-optics.org). In addition, the information about the event (conferences, workshops, or other public activities related to optics) should be sent to the ICO secretariat, who will announce it to the WYP2005 coordinator and establish a list of all ICO WYP2005 events on its website.

René Dändliker, President of ICO



MEMBER CONTRIBUTIONS

CUBA: In memoriam, Aurelio Oliva Viera

The past January 3, 2005, and unexpectedly, Aurelio Oliva Viera died in La Havana City, Cuba, due to an acute severe respiratory problem.

Aurelio Oliva (Yeyo, to his friends) was a physicist, who was having a great dedication for years, putting time, efforts and intelligence to the activities of optics in Cuba. Aurelio was graduated from La Havana University in 1972. Later, he received a MSc. in the specialty of optics and lasers from Havana Polytechnic Institute José. A. Echeverría (ISPJAE). Since 1975

he visited Russia, in a program of scientific collaboration and training at the Ioffe Institute in Saint Petersburg. At the laboratory of holography and optoelectronics, he worked with S.B. Gurievich and later also with Yuri Denysiuk and he specialized in holography and holographic interferometry.



Back to La Havana he was doing applied research at Cuban Centers dedicated to design and implementation of instrumentation for industrial and biomedical applications, such as ININTEF (Instituto de Investigaciones Técnicas Fundamentales, Institute for Research in Fundamental Techniques) and CEDEIC (Centro para el Desarrollo de Instrumentación Científica, Center for the Development of Scientific Instrumentation). As an example of his contributions, he participated as responsible in the team for the design of medical instrumentation for laser therapy, having later a commercial projection not only in Cuba but also in some European

and Latin American countries. To this regard, he collaborated for many years with the Cuban Ministry of Public Health to standardize the use of laser equipment for medical applications. Aurelio was one of the pioneer's physicists in Cuba that early in 1993 contacted ICO representatives to form the Cuban Territorial Committee of which he was President up to 2001. He was very active as well in the organization of activities at the Cuban Physical Society, of which he became President of the optics and spectroscopy section, and at the Cuban Academy of Science, collaborating also with ICO in the Travelling Lecturer Program, and in enhancing the presence of optics in the Caribbean area by organizing many professional events. The last years he was participating in a mixed company for the installation of solar energy panels in Cuban rural areas.

Aurelio Oliva was not only a talented person with a very enjoyable personality but he was also very generous and always ready to work with the aim to provide his forces and knowledge for the development and achievements of a more equalized society. The physics in Cuba, and specially the optics community, has suffered a great lost. We will solely miss him.

Angel Augier, President, ICO Cuban Territorial Committee.

HUNGARY: An overview in Optics activities

HISTORICAL OVERVIEW: Optical science and its application in Hungary dates back at least to the end of the 19th century, when Nándor Süss (his company later became the Hungarian Optical Works) won the Gold Prize for his theodolite at the Paris World Fair, but the achievements of the Tungsram laboratory are even more noteworthy (the krypton lamp was born here in the thirties – with the help of such names as Pál Selényi, Imre Bródy and Zoltán Bay).

Well known is also the name of the Hungarian scientist József Petzvál, who invented a series of different lens systems for photography and astronomic research. He played a leading part in early photography by devising a portrait lens with an aperture of approximately f3.6 - gathering sixteen times more light than lenses currently in use at the time, which brought exposure times down to less than a minute, therefore began to pave the way for portraiture.

His inventions were adapted by Zeiss in telescopes and by Voigtländer in photo cameras. The invention of dark field ultra-microscope by Richárd Zsigmondy in 1916, which had a considerable influence on different branches of science – such as colloid chemistry, biology,

medicine, physics. For this invention and other outstanding work in the field of experimental optics he was awarded Nobel Prize at 1925.

In the field of modern and coherent optics, the invention of holography by Nobel laureate Denis Gabor has had a considerable influence world wide.

After the Second World War universities and centralized academic and industrial research institutes have conducted promising research work in spectroscopy, non-coherent and later in coherent optics, laser development and application, nonlinear optics, quantum optics, holography, optical coating technology, while large state owned factories (such as the nationalized Hungarian Optical Works) could not keep up the pace with their western contemporaries, primarily due to the lack of competition and mismanagement under the prevailing political and economic climate.

The “regime change” starting around 1990 has caused fundamental changes. The state of optical sciences and their application show a much more structured pattern today. Universities and national research institutes still play the leading role in research and development, but many new private optical companies are active on the optical market (some of them spin-offs of academic institutes or formerly state owned companies), developing, manufacturing and distributing products for the industrial, medical etc. market, both domestic and world wide.

The academic research institutes have always been under auspices of Hungarian Academy of Sciences (Secretary General: Academician Prof. Norbert Kroó, former of director of Central Research Institute for Solid State Physics).

Here we try to make a short and certainly not comprehensive summary of some of the smaller and larger players and trends of the Hungarian optical community. Institutes and Universities

- Research Institute for Solid State Physics and optics of the Hungarian Academy of Sciences, Budapest (www.kfki.hu)
- Computer and Automation Institute of the Hungarian Academy of Sciences, Budapest (www.sztaki.hu)
- Research Institute for Technical Physics and Material Science of the Hungarian Academy of Sciences, Budapest (www.mfa.kfki.hu)
- Budapest University for Technology and Economics, Faculty of Natural Sciences (www.bme.hu)
- University of Szeged (www.u-szeged.hu)
- University of Pécs (<http://physics.ttk.pte.hu>)

Gabor Lupkovics, President Hungary ICO Territorial Committee.

SPAIN: Education and Research in Optics

This is a brief report of the state of the studies of and research into optics in Spain, describing final qualifications at different levels in the higher education system and the main areas of research.

EDUCATION: The subject of optics in Spain is covered in the higher education studies of Physics.

There are two principal optics programmes, one leading to Optometric studies and the other as a specialization in the Physics degree course.

The degree in Optometry is called “Diplomatura en Optica y Optometría” (Diplome in Optics and Optometry) and it is offered in 8 universities in the country. It lasts for three years, and primarily produces specialized workers in the optometry field.

Today there are 21 universities offering a Physics degree called “Licenciatura en Física”, which is equivalent to a BSc, BS/MS. The studies last 4 or 5 years, depending on the university, and are divided into two parts called cycles, the first lasting 2 or 3 years and the second, 2 years.

In the 1st cycle the subjects include general optics and practical laboratory and make up approximately one tenth of the total contents. In the second cycle, besides obligatory subjects, there are optional ones. Depending on the university, these optional subjects relating to optics cover the following areas: diffraction and Fourier optics, image formation, image processing, non-linear optics, quantum optics, laser theory, vision, holography, electro-optics and magneto-optics, optical analysis and material processing.

If the students choose a further specialization they register for a third cycle which gives the opportunity to gain a Phd in approximately four years. In some other degree courses, such as telecommunications engineering or others, certain optics subjects are also studied.

A proposal to create an optical engineering degree is now being studied.

It is very important to point out that all education programmes will probably undergo modifications after the movement in Europe towards a unified system of higher education initiated in Bologna at the end of the last century. The scope of the Bologna process in Europe is to establish transparent systems of higher education in Europe based on two main cycles and carried out as a division of higher education in different steps. The trends and the preliminary documents point to a first degree (3 or 4 years) a master’s (2 or 1 years more) and a possible specialization at a doctorate stage.

RESEARCH: In Spain all universities are research centres, which combine research and education, and endeavour to create a synergy between the discovery of knowledge and the education of students. But in addition there are other faculties that are also involved in optics, such as bio-medicine, chemistry, geology and the aforementioned specific areas in engineering. It is also necessary to take into account the groups working within the hospital system. In total, apart from the 21 universities offering optics as part of a Physics degree, there are about 50 further groups dealing with optical research within universities and about 50 more in the hospital system.

Moreover there are several research centres unified under the structure called “Consejo Superior de Investigaciones Científicas” (CSIC, similar to a National Council for Scientific Research) which develop pure and applied research. In particular there are about 40 different groups working on subjects related to optics.

There are also several independent research centres involved in optics and photonics and some institutes of optics, which amount to a dozen, and research groups in a few industries and companies, although more often than not, they are associated with university research groups through contracts.

Finally, there is also a wide range of regional and national projects and a large number of centres involved in European projects and networks.

As an indication of the scientific production in the Spanish optics community, a quick search carried out in the ISI (Information Sciences Institute) website shows more than one thousand publications in the last five years in the 10 most prestigious journals dealing with optics.

The Spanish Optical Society is the “Sociedad Española de Optica” (SEDO), which was constituted in 1968 with the support of the CSIC, education centres, research institutions and

industrial companies. According to the statutory definition, its objectives are to stimulate optics development, in particular the promotion of research, teaching and industrial applications in all the different branches needed by our society. The Optical Society consists of six different technical committees: Teaching of Optics, Vision, Spectroscopy, Colour, Image Techniques and Optoelectronics. The Society holds a triennial meeting besides other specific meetings of the different committees. In the last general meeting there were approximately 350 participants from academia, administration and commerce. Most of the participants were students, the majority of whom were in advanced degree programmes.

Santiago Vallmitjana, President Spanish ICO Territorial Committee.

USA: In memoriam, Walter Lewis Hyde, 1919 – 2003

Walter Lewis Hyde signed his name as W. Lewis Hyde, but was known as Lem Hyde to his friends. He was born in Minneapolis, Minnesota (1919) and studied physics at Harvard University, receiving a B. Sc. in 1941 and a master's degree in 1943. While studying for his doctorate he worked at Polaroid Corporation and later at Baird Associates. This was his early immersion into Optics, as Edwin Land at Polaroid had just perfected the technique of making large sheets of polarizing filters, and Walter Baird was developing spectrometers for the infrared. After receiving his Ph.D. in 1949 he worked from 1950 to 1953 as a scientific liaison officer in the London Office of ONR (the Office of Naval Research). The mission of the ONR London Office was to keep aware of the principal physics research efforts in Europe, and with his background in Optics he visited almost all of the European centers of Optics and attended ICO meetings from 1950 on. He was soon a good friend of André Maréchal in Paris, Erik Ingelstam in Stockholm, W. David Wright in London, and Giuliano Toraldo di Francia in Florence.



He was elected a Vice- President of ICO in 1962 and in 1966 he was elected Secretary-Treasurer of ICO, serving until 1969.

After his stint with the ONR London Office, Lem Hyde worked as a research physicist at the American Optical Company in Massachusetts until 1960, then as director of development at J.W.Fecker Division until 1963, when he went to the Institute of Optics at the University of Rochester as a professor of Optics until 1968. He was president of OSA in 1970 and continued active in both OSA and ICO throughout his career. His later occupation was more in academic administration than in Optics per se; he was provost at New York University until 1972, and executive director, Connecticut State Technical Colleges until his retirement in 1984. His interests were in optical instruments (particularly microscopes and telescopes) and in polarized light. He wrote many papers in Optics history. He died at his home in Connecticut on January 9, 2003.

John N. Howard

USA: Activities of the USAC-ICO Committee:

The United States Advisory Committee to the International Commission for Optics (USAC-ICO) is offering among its activities the program for Traveling Lecturer. This year, and inside this program, Dr. Barry R. Masters, a Fellow of OSA and SPIE, and consultant in Arlington, Va., has developed an intensive program of visits to various institutions and research centers in

India. Dr. Masters has visited and delivered lectures and seminars to the following centers: 1.- Indian Institute of Technology, Delhi, under the host of Profs. Rajpal S. Sirohi, director, and Kehar Singh. 2.- J.C. Bose Institute in Calcutta, with in addition a visit to the Bose Museum in which the responsible person is Dibakar Sen. 3.- Indian Institute of Technology in Kharagpur. 4.- Indian Institute of Technology in Bombay hosted by the head of the physics department S.S. Major and including a visit to the laboratories for fiber optic sensors led by Gargi Vishnoi. 5.- Center for Cell and Molecular Biology (CCMB), National Center for Confocal Scanning Fluorescence Microscopy and the L.V. Prasad Eye Institute in Hyderabad under the support of Lalji Singh, director of the center. 6.- Raman Research Institute, Indian Institute of Science, National Center for Biological Sciences in Bangalore and including a meeting, in that occasion with R.M. Vasu, chair of the department of instrumentation. 7.- And finally, a visit to Chennai, Madras, the Indian Institute of Technology, hosted by Prem B. Bisht and the Vision Research Foundation, Sankara Nethralaya The Elite School of Optometry. In this last center he was following the visit organized by S. Srinivasan, principal of the school. The subjects of the lectures and seminars delivered by Barry Masters in the mentioned centers were quite broad, from non linear microscopy to biomedical optics and from particular to general overviews in non linear optics research projects for graduate students. The grant offered by the USAC-ICO Committee for this Traveling Lecturer Program was supported by OSA. A complete report of this traveling lecturer has been published in Optics and Photonics News (May 2004) and it is available on-line at: <http://usac-ico.org/lecturers.html>.

In the addition to the above mentioned visits, the USAC-ICO Committee has developed the following programs: Jagdish Singh visited India in September- December 2004. Abhay Sharma visited India in August 2004. Sergey Ulyanov visited China in March 2003 with a grant offered by the US National Research Council (NRC).

John Ballato visited Moldova in November 2003 with the support of US NRC. And finally Charles Joenathan visited Argentina in November 2003.

Vasudevan Lakshminarayanan , Chair of the USAC-ICO Committee.

MINUTES OF THE ICO BUREAU MEETING

held in Florence, Italy, on Friday, August 23, 2002, from 14:00 to 18:00
and Saturday, August 24, 2002, from 9:00 to 18:00

Present:

ICO Bureau Members: A.H. Guenther, T. Asakura, P. Chavel, A.T. Friberg, G.T. Sincerbox, H.H. Arsenault, M.L. Calvo, R. Dändliker, A.A. Friesem, G. Righini, B.E.A. Saleh, C. Sheppard, T. Tschudi, L.L. Wang.

Observer: G. von Bally, OWLS.

Assistant: E. Miquel-Jouis.

Apologies for absence have been received from: J. Ojeda-Castañeda, D.A.B. Miller, Y. Petroff.

Only on Saturday: P. Shumate, Executive Director of IEEE/LEOS, who had offered to attend part of the sessions in replacement of D.A.B. Miller.

1 - Call to order, introductions, matters arising from previous meeting

A.H. Guenther opens his final round of meetings as the ICO President with thanks to those attending and those who contributed in the meeting preparation. There will be high level executives (Presidents and Executive Directors) from the International Organization Members here at this ICO19 meeting and the President thinks that it is appropriate to extend them an invitation to attend the general meeting as observers, since they travelled a long distance to come to Florence and they helped ICO in general and ICO19 in particular in many respects. In fact, this could be made a policy for future Bureau Meetings. ICO should be an inclusive, not an exclusive, organization. Motion: H.H. Arsenault, G.T. Sincerbox, unanimity in favor. P. Chavel, Secretary, introduces E. Miquel-Jouis, who has been helping the Bureau as assistant to the secretary in the last six months. A.H. Guenther proceeds to a review of 2001 actions and the examination of matters arising from the last meeting.

- Action 01/1 (Arsenault): ask SPIE to send English version of German Optics report to Bureau members. The translation has not been completed; English summaries are available from German sources.
- Action 01/3 (Chavel): accept IoP offer to include ICO information in optics.org. IoP did not reply to contact. The other 2001 actions were acted on or will be reviewed under the various sections of the present meeting's agenda.

H.H. Arsenault reports on other SPIE actions in connection to ICO. The ICO Newsletter is now announced in a box in OE Magazine. A financial support to ICO19 has been granted to an exceptional amount of US\$15000. H.H. Arsenault has transmitted to SPIE the suggestion to consider someone from Germany to be invited to the next CPO committee meeting. SPIE has negotiated a Memorandum of Understanding with ICTP, that will be signed in the near future, under which it will participate in the future Optics Winter Colleges in Trieste. Africa contacts: the SPIE staff has contacted A. Wagué of Senegal but received no response at this time. South America College: this action is currently on hold for lack of funding. Discussions with Latin American countries are on-going.

2 - President's report
The President reviews the main events and ongoing actions.

ICO is a catalyst for bringing the worldwide Optics and Photonics community and societies together. It is important to recognize recent evolution. OSA has joined SPIE and ICO in sponsoring the ETOP meetings. SPIE has joined ICO and OSA in support of ICTP. In 1947, ICO was the principal vehicle for international meetings, since then other organizations hold conferences in optics at the international level. We are not competing; rather we collaborate to address the global optics and photonics enterprise. ICO is a non threatening facilitator to coordinate efforts in optics. This is now being recognized by its new partners, who are now ICO members as International Organization Members. ETOP is the best meeting in its field.

Another common interest between ICO and all its International organization members is the global optics development in all areas in the world. ICO maintains contacts with many countries. One very important new issue is the African Laser Center (ALC) that ICO has been invited to support. Other areas that ICO should also consider because of their potential major impact are security and biophotonics. ICO has had only one major ICO meeting since ICO18, in Dakar in 2000, as the 2001 Topical Meeting that was planned to be held in Israel had to be postponed. ICO has also been pursuing its role in supporting Latin American meetings (RIAO/Optilas). It has enhanced the traveling lecturer program. The ICO President was invited to be one principal speaker at a meeting of the 50th anniversary of the Japanese Optical Society and at the 25th anniversary of Spanish Optical Society as well. Being a member of ICO means having a voice in ICO and impacting it and getting up-to-date information. Many members recognize that their membership helps them bring conferences in their territory.

We all have to make it known that optics offers brilliant opportunities for future employment. Experience in the US has shown that investment in research leads to the growth in degrees. Presently, strong support goes to the biomedical domain, the number of degrees grows fast, while other domains that have received less support see the degree production decline.

In the general public however, Optics may be best recognized through its applications. For that reason, the new ICO Book's title is "International Trends in Applied Optics".

H.H. Arsenault suggests to interact with IAPR on Pattern Recognition issues.

3 - Financial matters

G.T. Sincerbox, Treasurer, reports. As of 31 December 2001, the cash reserves of the ICO are US\$ 172,611, an increase of US\$ 52,961 over the previous 3-year period. Dues in arrears have been significantly reduced to US\$ 7,500 for this 3-year period. This is down from US\$ 15,140 in the previous triennium. Only 5 countries are two years in arrears. The reserves continue to remain at a high level and are now exceeding the cost of operation of a single triennium. While it is prudent to maintain a reserve, the ICO Bureau recognizes that funds are now available to support new ventures and/or augment current programs.

The documents to be presented to the General Meeting concerning the past triennium income and expenses, as well as the current balance sheet and the proposed budget for the new triennium are examined.

Regarding the offer by ICO former President J.W. Goodman to offer a grant to ICO for a new program, G.T. Sincerbox met with J.W. Goodman and together they considered a list of new actions proposed by ICO, but none of these programs really raised the potential donor's enthusiasm. G.T. Sincerbox plans to get back to him and see what kind of a program he would really be looking for (Action 02/1).

4 - Membership and membership rules

4a) Contacts with potential Territorial Committee members

M.L. Calvo reports on attempt to restart Portugal membership (action 01/4). It appears that healthy Optics activity in Portugal is mainly conducted by the Portuguese Physical Society and no interest for ICO's activities appears to exist at this time. M.L. Calvo is thus planning to make further contacts (Action 02/2).

After its membership had been terminated for over six years arrear dues, Romania paid two years dues. The Bureau discusses how to proceed to address the case positively but try to avoid setting a precedent. Motion: (G.T. Sincerbox, R. Dändliker): "ICO reinstates Romania and cancels past dues, considering that Romania is current on its dues as of 2002. Contrary to the general rule (ICO Statutes, article 7), no more than two years arrear dues will be accepted in the future." The motion is accepted unanimously.

Action 01/6: Saleh made two contacts in Egypt (NILES and a university) and plans to travel to Egypt to explore possible membership (Action 02/3). Friberg was unable to identify appropriate contacts in Pakistan.

The membership of South Africa has been terminated because of more than six years arrearage in dues. A new application with full description of the new Territorial Committee rules and membership will be required for membership to be reinstated. P. Chavel will follow the case (Action 02/4).

C. Sheppard will contact C. Saloma in the Philippines (Action 02/5).

4b) Membership rules regarding International Organization Members

M.L. Calvo reported for the ad hoc committee on suggested criteria regarding International Organization Members. After considering the arrangements within IUPAP and ICSU in similar circumstances and the situation of current ICO International Organization Members, the Committee suggests that a minimum of 20% of the membership should be from outside the most represented country for an application to be considered. The current International Organization Members comply with this criterion. This does not mean that 20% of international membership gives automatic right to International Organization Membership in ICO, because such parameters as international participation in governing bodies, international participation in meetings, organization in meetings outside the most represented country, international authorship in publications, the advice of the Territorial Committee in the most represented country (if there is one) should also play a major role in the judgment for acceptance as an ICO International Organization Member or associate member. Nevertheless, it is agreed that a simple criterion as a prerequisite for considering an application in this category of membership would be helpful in the future. The possibility of revisiting membership should the international character of the Member significantly decrease is mentioned but no rule is adopted in that respect.

Motion: H.H. Arsenault; P. Chavel, "The Bureau will recommend to the ICO General Meeting to change Rules and Codes of practice regarding International Organization Members. The applicant Society must include at least 20% members from outside its most represented country". The motion is unanimously accepted.

4c) Applications from new members

- *International Society for Optics within the Life Sciences (OWLS)*. The application from OWLS was already approved in 2001. It will be proposed to ICO General meeting.
- *African Laser, Atomic, Molecular and Optical Physics Network (LAM)*. For LAM Network application, the bureau will ask approval from Ghana/West Africa according to decision just made about membership rules. The representatives from the current International Organization Members are asked to give their opinion on this case. H.H. Arsenault (SPIE) thinks that anything that can be done to help improve African activities in optics is good; LAM network membership appears to be one way to help. P. Shumate (IEEE/LEOS) has similar concerns. B.E.A. Saleh (OSA) is also supportive that improving contacts in Africa is worthwhile. Motion P. Chavel, G.C. Righini: “the ICO Bureau will recommend to the ICO General Meeting to accept the LAM Network as International Organization Member”. Motion approved unanimously.
- *Optical Society of Japan (OSJ)*. The Science Council of Japan, a government organization, has a Committee on Optics, which appoints the ICO Territorial Committee for Japan. This Territorial Committee has no close links with Optics related Societies, in particular the OSJ. T. Asakura reports that OSJ is very eager to increase its international role, in particular through tighter contacts with ICO, its international relations have progressed in relation with ICO and could progress further. The geographical balance in ICO has been modified by the creation of International Organization Members. OSA and IEEE/LEOS both have OSJ and the Japanese Society of Applied Physics (JSAP) as “sister societies”. A truly international society in Asia is needed. The Bureau agrees to address positively the request from OSJ. The chair of the Nominating Committee should issue a reminder to the voting members assessing the necessity of a good geographical balance. Motion (H.H. Arsenault, G.T. Sincerbox): “The Bureau recommends that the OSJ be offered some direct contact with ICO on a regular basis.” Motion carried unanimously.
- *Estonia, Latvia and Lithuania* are recent IUPAP member. For Estonia and Latvia, applications are completed but Lithuania will appoint its Territorial Committee members in the coming weeks. Motion (P. Chavel, B.E.A. Saleh): “The ICO Bureau will recommend to ICO General Meeting Estonia, Latvia and Lithuania to membership. Lithuania membership is approved and will become effective after the appointment of the Territorial Committee governing body.”
- An application from *Greece* has been received also. It is very good but approval from a science authority in the country is missing. Motion (H.H. Arsenault, P. Chavel): propose associate membership to Greece until the Territorial Committee is ready for full membership. The motion is unanimously approved.
- For *Morocco*, two organisations (Société Marocaine d’Optique et de Spectroscopie and Société Marocaine d’Optique et de Photonique) joined their effort for an ICO associate membership application. A temporary Territorial Committee has been created with the mission of completing a full application by December 2003. Motion (H.H. Arsenault, M.L. Calvo): Propose this associate membership to ICO Meeting. Adopted unanimously.

For *Tunisia* (associate membership, already approved), news about their Physical Society and measures to be representative of community are missing. Physical Society endorsement of a Territorial Committee is not a general requirement for ICO membership but in this case, while endorsement from the Tunisian Astronomical Society has been obtained, the applicant community appears to be close to Physics and therefore a link is desirable.

4d) Current members

In some ICO Territories, information about the Committee's operating rules and about the current composition of Territorial Committees is missing. Of course, the Bureau has at least one identified contact in each Territorial Committee, and they pay dues, but in many cases the Bureau does not know how they work and who the current members are; probably, in many cases, membership is not explicit. Clarification should be requested.

5 - Report of ICO committees:

5a) Nominating Committee

T. Asakura, chair of the Committee, reports. Of the 18 candidates for Vice-President, two have been identified as being from industry. One candidate for President and one candidate for Vice-President have not yet been endorsed by their respective Territorial Committee, which is required for the election to be valid.

A.H. Guenther mentions the case of P. Chavel, who is not a candidate for a position in the new Bureau but has agreed to assist the new Bureau in a transition period as the ICO secretariat will move to a new place and additionally to be responsible for some specific issues. "The Bureau decides to create a position of senior adviser to be appointed by the bureau at its discretion and to mention this decision at the General Meeting during the report of the Nominating Committee." Motion A.H. Guenther, second R. Dändliker. Vote unanimously in favour. It is understood that this is not a permanent position, and is not a seat in the Bureau, but a position "*ad personam*". It does not imply a change in the Statutes or the Rules and Codes of Practice.

5b) Long Range Planning Committee

A.H. Guenther, chair, reports. Vice Presidents have to be more explicitly in charge of a number of issues. One idea is to ask elected Vice-Presidents to be in charge of direct personal contact with some identified territories, to report annually to the board meeting on their activity. In addition to contacts with the ICO Secretariat, that keeps track of information, every Territory should therefore be in direct contact with one elected Vice-President. The ICO needs to progress on a vision statement. A vision statement is not a mission statement; it is not "how do you get there" but "what do you want to be regarded as when people think of you", "what do you want to be when you grow up". ICO should become the platform for the global promotion of optics, the place where the information that is going on locally should be exposed.

ICO can help to progress on the recognition of Optics as a discipline and as a profession. ICSU membership will be a valuable argument in that respect. ICO must be aware that optics in developing countries is different from what it is in developed countries, and promoting optics in those countries is one of the things that ICO should do in a particular apt way. In such issues, ICO best use its international character, for example the President of ICO is in a good position, with his title, to go out and show the flag.

A.H. Guenther recommends that ICO progresses on its idea to start writing a global report on the worldwide promises and challenges of Optics (Action 00/9, von Bally and Tschudi). The ad-hoc group created by ICO will think about ICO contribution to a global report on the status

of optics. G. von Bally reports that discussions with UNESCO and the European Commissions are being pursued.

H.H. Arsenault asks if the Bureau should not have more than one meeting a year. Or perhaps the Executive Committee should meet more than once every year. The issue here, in addition to travel costs, is resources in terms of availability of the Bureau members.

5c) Committee for the Regional Development of Optics

In the absence of the Committee chair, M.L. Calvo reports. At the occasion of the RIAO/OPTILAS meeting held in Tandil (Argentina) in September 2001, she had the opportunity to contact the Cuban ICO Territorial Committee. One of the representatives, J.C. Lopez, was planning to attend a meeting in Panama, celebrating the anniversary of the Panama Optical Society. Due to Visa problems, this travel and visit has not yet been achieved. Funds granted by ICO to J.C. Lopez for an ICO Travelling Lectureship could therefore not be used as yet. In June 2002, there has been a contact with colleagues from the Department of Electrical Engineering at the University of Costa Rica. Further contacts with the mentioned institutions indicate that there is a possibility for J.C. Lopez to develop the ICO Travelling Lecturer Program in Costa Rica. Our colleagues from the mentioned country are now initiating actions in order to organize a Territorial Committee and to pursue further activities under the ICO sponsorship.

In order to develop procedure for starting ICO web catalogue of optics documents available at no cost (actions 00/2, Righini and 00/3, Arsenault), G.C. Righini has started exploring the resources, concentrating on those with one educational information rather than research documents. There are quite a few. A problem will be the speed and quality of web connections in the less developed countries. But there are sources. ICO needs to get organized. Just like it could help on standards by cataloguing the standards worldwide that could do the same on educational documents, like research-related materials, available for free. One should first evaluate how much work is involved here? Crossed links between the ICO and its International Organization Members can be used to give fast access to information on given topics such as these. Action 02/6: G.C. Righini and the International Organization appointed Vice-President will work out a proposition and raise the issue of possible support in their organization.

P. Chavel reports on the African Laser Center (ALC) initiative. ALC is a continent wide program proposed by South Africa to increase and support laser research, development and application activities in Africa. ICO has been associated with it from the inaugural meeting in October 2001 and P. Chavel is one of the members of a task force in charge of defining a business plan. When ALC is in operation, ICO could help by providing advice and expertise, making contacts with laboratories and scientists outside Africa that may collaborate with the research projects to be launched in the program. This is considered a good activity in which ICO should be involved; it may even evolve into a major activity. ICO should offer to help ALC launch African conferences that may be sponsored by its International Organization Members, giving advice but letting the colleagues in Africa themselves operate them. One Bureau member in charge of ALC should be identified by the new Bureau.

5d) Fellowship Committee

- G.T. Sincerbox, Chair of the Committee, reports: there is no budget, as there have been no applications for several years, the program should therefore be discontinued. Motion

- G.T. Sincerbox, H.H. Arsenault, vote unanimous.

5e) Travelling Lecturer Committee

G.T. Sincerbox, Chair of the subcommittee, reports. See Toward ICO-19, p.55. Two applications have been received, the program is judged moderately successful.

5f) Education Committee

C. Sheppard, Chair of the Committee, reports. H.H. Arsenault (Action 01/10) has transmitted to SPIE the request to send 50 optics degree program directories for distribution to ICO Territories (but the directories do not seem to have been received). As agreed, all Bureau members and all ICO Territorial Committees should make sure that their country/territory is complete and well represented. Action 02/7, new Education Committee: resume this activity.

C. Sheppard has explored possibility of distributing Optics Education kits in developing countries where local opticians could use them. The issue is still pending and should be taken over by new bureau. The two existing kits (OSA classroom kits and Rochester kit, also distributed by OSA) are available, in some cases free of charge, for initiatives aimed at generating interest in optics education and training and attracting the attention of people in the development of optics. The OSA will examine propositions to use the kit and send kits free of charge to places that commit themselves to report on user reactions. Has the documentation been translated to the various appropriate languages? Africa is an obvious case where many kits might be needed.

5g) Standards Committee

L.L. Wang, Chair of the Committee, reports. The committee has been idle. The ICO website should put links to the places mentioned in the newsletter, but the full link to the optics standard rather than just the home page address is needed (action 02/8, L.L. Wang and then Secretariat). ICO cannot influence standards but it can raise awareness of existing optics standards. The developing nations have no standards but if these countries are developing, their industry needs to know the standards. The standard committee's mandate is to communicate on standards.

5h) Prizes and Awards Committees

R. Dändliker, Chair of the Committee, reports on the ICO Prize. The ICO Prize did not come up with a adequate proposal to award the 2002 Prize. It only received two candidates although the deadline was extended and reminders were sent to the committees about the need for nominations. The two nominees will be reconsidered next year. After discussion, R. Dändliker and H.H. Arsenault propose the motion not to give the prize in 2002. Vote: unanimous.

Motion (G.T. Sincerbox, B.E.A. Saleh): increase Prize to US\$2000 and up to US\$1000 for travel expenses effective in 2003. Vote: unanimous.

M.L. Calvo, chair of the Subcommittee, reports on the ICO Galileo Galilei award. There is also a problem regarding the number of candidates, there was only one candidate but fortunately a very good one. Motion (M.L. Calvo, G. Righini): to give the prize to R.A. Ganeev of Uzbekistan. Vote: unanimous.

Motion (G.T. Sincerbox, A. Friberg): increase the cash donation for the Galileo Galilei award to US\$1000 in addition to up to US\$1000 on travel expenses effective in 2003. Vote unanimous.

H.H. Arsenault suggests that these prizes should be re-evaluated.

A.A. Friesem, Chair of the subcommittee, reports on the ICTP/ICO award. There were two very good candidates and Alphan Sennaroglu received the prize. This Prize will not be increased at this stage.

6 - ICO Book report

A.H. Guenther, President, reports. ICO book V (>700 pages) is being printed by SPIE. Preliminary editions will be available for inspection at the SPIE booth at ICO19, where participants can order it at a discounted price.

7 - ICO membership in ICSU

This issue has not been addressed yet. P. Chavel agrees to take care of it as promised (action 99/10). The ICO application to ICSU "International Scientific Associate" status must include "the reasons underlying the application and give indication of the activities in which they wish to be associated with ICSU, e.g. the organization of joint symposia or meetings, preparation of joint programs, development of standards, etc.". Aside from development issues, the application of optics is pervasive, cross cutting, much beyond physics. ICSU has the responsibility of recognizing emerging new fields. The COSE report, clusters are other arguments.

8 - Review of ICO Participation in meetings and schools

8a) Preparation of ICO XIX, Florence

G.C. Righini reports. The Program Committee selected over 500 papers. There will be about 284 oral presentations and 239 poster presentations. The expected target is between 350 and 400 participants which is not as large as the Bureau was expecting two years ago. This seems to be due to the political and economical situation. The number of requests of grants is almost 60 and a large majority had a positive response. However, the impossibility to cover the travel costs for all awardees has made some unable to join ICO 19. The Proceedings' contents cover over 1070 pages so the publication is split into 2 volumes. They will be re-published and distributed by SPIE after the Congress.

8b) ICO XX

The applicant, Jianlin Cao, has been invited to present his project to the Bureau on Saturday, 3pm. According to the proposal, the theme for the 20th Congress would be "Challenging Optics in Science and Technology". It would be held in 21-26 August 2005 in Changchun, China and organized by Changchun Institute of Optics, Fine Mechanics and Physics (CIOMP) and the Chinese Academy of Sciences. Motion to accept the proposal (B.E.A. Saleh, G.C. Righini): vote unanimous.

8c) Other meetings

A.T. Friberg, Associate Secretary in charge of ICO participation in meetings, reports. Only meetings and schools during the last year (after Bureau meeting 2001) and coming meetings are considered; a report of ICO meetings and schools during the whole triennium will be presented to the General Assembly.

Events taken place September 2001 – August 2002

Seven meetings and schools have taken place with ICO involvement since the previous Bureau meeting: the 7th Int'l Conference on Education and Training in Optics and Photonics (ETOP 2001), Singapore, Nov 2001; Photosciences 2002, Havana, Cuba, Jan-Feb 2002; ICTP Winter College 2002 on ultrafast nonlinear optics, Trieste, Italy, Feb-Mar 2002; Optics in Computing 2002 (OC 2002), Taipei, Taiwan, April 2002; Photonics Prague 2002, Prague, Czech Republic, May 2002; Photonics North (ICAPT 2002), Quebec, Canada, June 2002; and Int'l Laser Radar Conference (ILRC 21), Quebec, Canada, July 2002.

For these events, of which 3 were co-sponsored and 3 endorsed conferences and 1 was a topical school, ICO had given a total of US\$ 6,500 in grants; no loans or participation in risk had occurred. It is a standard policy of ICO to ask the Bureau representatives to evaluate the quality and ICO involvement of the meetings, although in some events no ICO representatives attended. In some meetings the contacts between the organizers and ICO representative, who e.g. serves on the Program Committee, were lacking. Most of the meetings were judged to be well organized and of good scientific quality.

Events already decided

There were 5 other meetings already approved by ICO and currently in active preparation. Besides the 19th ICO Congress itself, these include SPIE's Symposium on Astronomical Telescopes and Instrumentation (in which ICO acts as a cooperating organization), Waikoloa, Hawaii, Aug 2002; OWLS VII on environmental and bio-photonics (co-sponsored ICO-19 satellite), Luzern, Switzerland, Sep 2002; Advanced Study Course on Optical Chemical Sensors (ASCOS 2002, endorsed school), Wroclaw, Poland, Sep 2002; and the 3rd Int'l Conference on Optics-photonics Design & Fabrication (ODF 2002, endorsed), Tokyo, Japan, Oct-Nov 2002. For these 5 events ICO has awarded US\$ 12,500 in grants, approved US\$ 5,000 in loans, and assumed US\$ 12,500 in risks. No scientific or organizational problems with the meetings were foreseen or anticipated.

Future meetings and schools

Eleven new applications of ICO participation in conferences and schools had been received by the time of the Bureau meeting for consideration. Of these only four, including the most urgent ones and having to do with the host of ICO Bureau meeting 2003, were addressed in this meeting; the others were deferred to the joint meeting of the Old and New Bureau.

6th LAM Workshop on Laser Spectroscopy and Applications: LAM workshops are a vital part of the African optics activity, well in line with the ICO priorities. The Bureau decided to co-sponsor the event and give it US\$ 1,500 in grant and US\$ 1,000 in loan. Art Guenther may attend the workshop and serve as ICO representative, provided discussions on the African Laser Center (ALC) initiative can be combined with the trip (action 02/9, Friberg).

ICTP/ICO/OSA/SPIE Winter College 2003: In its last year's meeting the Bureau decided to support the ICTP Winter Colleges annually by a US\$ 1,500 grant and appoint A.T. Friberg to serve as a liaison. The 2003 edition deals with bio-photonics, and the directors are G. von Bally, P. French, and S. Pavone, and G. Denardo as the local organizer. SPIE now also participates in the winter college, in accordance with the Memorandum of Understanding between ICTP and SPIE.

Optics in Computing (OC 2003): ICO has been informed that the Optics in Computing 2003 conference will be arranged by OSA in Washington, DC 18-20 June 2003. Normally ICO endorses the OC meetings at the odd-numbered years without any financial stake. The Bureau decided that ICO can continue this tradition, provided a request for ICO endorsement is received from the organizers (action 02/10, Friberg).

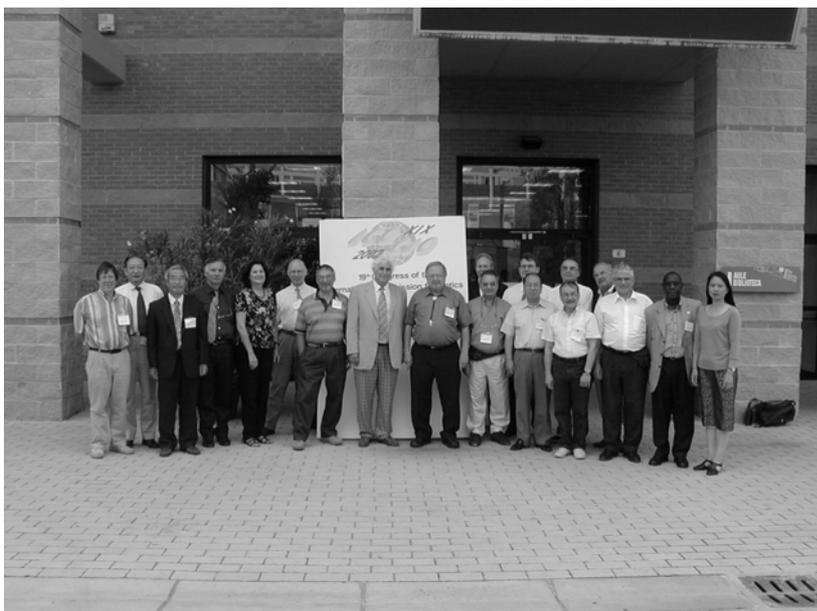
Polarization Optics: This meeting is scheduled for 30 June – 3 July in Polvijärvi (near Joensuu), Finland. Following some discussions on potential Bureau meeting venues for 2003 (such as Laser Fair Munich and ETOP 2003 conference in Tucson), the Bureau unanimously approved Polarization Optics as an ICO Topical Meeting and the site of the Bureau meeting in 2003. The conference co-chairs are J. Turunen and A.A. Friesem, and the Bureau meeting takes place in Joensuu during two whole days 28-29 June 2003 just before the conference. A grant of US\$ 3,000 was approved to assist participation of delegates from less-favoured regions (Action 02/11, Friberg). IUPAP sponsorship (without financial assistance) will be applied as usual (Action 02/12, Friberg).

It is a common policy of ICO to ask organizers of meetings with ICO participation to send proceedings to selected addresses in developing countries and to the winners of the ICO Galileo Galilei Award. The current status of the addresses was reviewed and the measures to enhance and update the listings and distribution were discussed.

9 - Other business

The Bureau revises changes to Rules and codes of practice to be proposed to the General Meeting.

The Committee will be modified, with the termination of the Fellowship Subcommittee and the formal creation of the Education Committee. Formal reference to Bureau Observers will be suppressed; the President will always have the possibility to invite observers on a case by case basis. The advice of the Bureau members is requested on a project for an ICO “threefold” to be distributed at future events with ICO participation. The Bureau members advice is also requested on ICO web site.



Some members of the Old and New ICO Bureau, after the Joint Meeting, in Florence, August 30th, 2002. From left to right: C. Sheppard, G. Jin, I. Yamaguchi, G. Righini, M.L. Calvo, P. Chavel, G. Sincerbox, R. Dändliker, A. Guenther, N. Gaggioli, G. Mu, B. Saleh, H. Arsenault, A. Wagué, L. Wang. Behind: P. Shumate, A. Friberg, G. Von Bally, A. Friesem.

MINUTES OF THE JOINT MEETING OF THE OLD AND THE NEW ICO BUREAU

held in Florence, Italy, on Friday, August 30th, 2002, 3pm-6pm.

Present:

ICO Bureau Members: H.H. Arsenault, T. Asakura, M.L. Calvo, P. Chavel, R. Dändliker, A.T. Friberg, A.A. Friesem, N. Gaggioli, A.H. Guenther, G. Jin, G.C. Righini, B.E.A. Saleh, C. Sheppard, G.T. Sincerbox, G. Von Bally, A. Wagué, L.L. Wang, I. Yamaguchi.

Observers: E. Arthurs (SPIE), P. Shumate (IEEE/LEOS).

Apologies for absence have been received from: T. Tschudi and from B.Y. Kim, M. Kujawinska, A.A. Sawchuck, A.M. Weiner, new bureau members.

1) Call to order, introductions

A.H. Guenther opened the session and thanked the old Bureau members for the work that they have done, appreciating their diligence. ICO has progressed in the last three years and the infusion of the International Organisation Members has been very fruitful: we are not competitors with our International Organization Members, rather we are facilitators for the global optics enterprise. ICO is the place where the optics world meets. The new initiatives taken in Africa, in Latin America are very appropriate actions to be handled by ICO. On behalf of the Bureau, the past President reiterates thanks to P. Chavel for his role as the glue of ICO in the last 12 years.

A.H. Guenther than hands over the chair to R. Dändliker, President elect.

2) Operation of the ICO Bureau, 2002-2005

Each Territorial Committee elected Vice-President is asked to accept responsibility for personal and regular contacts with about 6 Territorial Committees. Elected Vice-Presidents are asked to send to the new President a first proposition on which Territorial Committees they would be willing to take care of, their input is requested before October 15, 2002. (Action 02/13). The Secretariat is in charge of membership and keeps memory, archives, information but direct personal contact should be made and maintained by the appointed Vice-President to their respective Territories. The role of the Secretary is to keep track of information, therefore it should receive a copy of all information on ICO Bureau activity.

The Bureau composition is not yet quite complete: IUPAP is expected to appoint their Executive Committee representative in ICO Bureau in October (see section 4 below). As per article 5 of the Statutes, the procedure of considering the IUPAP Executive appointed contact as one Bureau member will be continued.

Temporary letterhead will be used by the New Bureau until the new letterhead is printed. The old secretariat will send the electronic letterhead form to the New Bureau Members (Action 02/14). For the new ICO letterhead a motion is proposed (R. Dändliker, A.H. Guenther): accept the vision statement suggested by A.H. Guenther: "ICO, the place where the Optics World meets" and include it on the letterhead. Vote: unanimous.

As the Secretariat is transferred to Madrid, the Secretary will remain in charge of the newsletter and the web site. Advice and suggestion on the web site and contributions to the Newsletter are permanently expected from Bureau members.

Action (old secretariat, 02/15) Action: create a link from ICO website to International Organization Member sites.

3) Financial operation, 2002-2005

The treasurer reviews the financial information, including the budget. The Bureau discusses money never claimed from past meetings. Motion (H.H. Arsenault, A.H. Guenther): support to Mexican Territorial Committee for the ETOP99 meeting is cancelled and the amount will be transferred to SPIE, who made a large deficit (US\$17500) on ETOP99 and never received a financial report from the organizers. Adopted unanimously. In the future, letters indicating financial participation in meeting should indicate that funds are available for 2 years after the date of meeting and that funds not claimed after that date are recovered from liabilities. Money not claimed from before ICO18 are recovered. Motion (A.H. Guenther, P. Chavel), adopted unanimously.

New activity requiring web page support: ICO will conduct a new action (G.C. Righini, action 02/16), the implementation of a catalogue of documents on education in optics available electronically at no cost. OSA, SPIE and IEEE/LEOS have been asked to support the action and to propose ways to implement it. A meeting was held on August 27 and the representatives of the three organizations agreed to request each US\$5000 from their societies on a one year project. The action will be reviewed at a meeting of these organizations after one year for possible continuation of the funding. For 6 months during the coming year, a full time person will work to create the web site, which will be distinct from the ICO web but will of course have links to it. ICO will also participate with US\$5000. Motion (R. Dändliker, A.H. Guenther): use US\$5000 for this action under the "new programs" line of the budget and take a one-year commitment to implement the site. Motion is unanimously accepted. G.C. Righini hopes to be able to get the authorization to host the web site from the Italian government. Of course, International Organization Members are welcome to create a link from their web site to the new website.

Decision on financial operations

Since the Treasurer has been re-elected, no significant change is required on banking operations. Nevertheless, it is useful for the Secretary to have a small amount at its disposal on an banking account in its country. A new account will be opened in Spain for the Secretary and the New Secretary will have the signature on this account, as well as the Treasurer. The account in France will be maintained for some time, perhaps one year. The Treasurer, G.T. Sincerbox, will be authorized to use it as in the past. Besides, effective October 1st, 2002, the new Secretary, M.L. Calvo, will have the signature and will be authorized to use the account. The outgoing Secretary, P. Chavel, is authorized to use it and have the signature until September 30, after which his authorization will be cancelled." Motion P. Chavel, A.H. Guenther. The proposition is accepted by unanimous vote.

4) ICO representation in external committees, 2002-2005: IUPAP and its Commissions, CPO, ICSU, Steering Committees

The President elect, R. Dändliker, suggest the following names:

ICO Observer in Coalition for Optics and Photonics: A.H. Guenther.

ICO Associate Members in IUPAP Commissions:

C13, Physics on development: A. Wagué

C15, Atomic and Molecular Physics and Optical Physics: A.T. Friberg

C17, Quantum Electronics: G.C. Righini

IUPAP Triennial General Assembly and annual IUPAP Council and Chair meetings

These meetings will be attended by the President or his representative. The IUPAP General Assembly will be held in Berlin in October 2002. G.C. Righini will be the ICO representative. In this occasion, he will ask the IUPAP Executive Council to appoint its delegate to ICO and ask C13 and C15 and C17 to appoint their associate members (Action 02/17, Righini). Associate members from IUPAP commissions are “associate members” of the ICO Bureau (article 5 of the ICO statutes).

ICSU: As per action 99/10, P. Chavel is in charge of the ICSU International Scientific Associate membership application.

Steering committees

Optics in Computing: P. Chavel, having been the ICO delegate for eight years, has to leave the Committee according to its rules. He will ask Maria Yzuel if she can be the new ICO delegate (action 02/18, P. Chavel). Jin Guofang suggests to make sure that the Steering Committee takes care of the rapid evolution of the subject, since Optical Computing is not an active subject as it was about ten years ago.

Education and Training in Optics and Photonics: according to the ETOP memorandum of understanding, the ICO appoints one representative to the ETOP Long Range Planning. A.T. Friberg is currently serving on a three year term, 2000-2003 on that committee, of which he is also the chair. Besides, it so happens that A.H. Guenther is the chair of the Steering Committee representative for ETOP 2003.

5) ICO Committee Structure, 2002-2005

A.T. Friberg and M.L. Calvo have to decide how they will share their roles of ex officio members of the various committees (section 6 of the Rules and Codes of Practice, action 02/19, Calvo and Friberg).

Chairs of committees:

Nominating Committee: A.H. Guenther will serve as the chair ex officio.

Long range planning Committee: R. Dändliker will serve as the chair ex officio.

Regional development of Optics Committee: the chair will be G.C. Righini

Galileo Galilei subcommittee: the chair will be G. von Bally

Chair of ICO/ICTP award subcommittee: the chair will be A.A. Friesem, the other ICO appointed member is A. Consortini.

The fellowship subcommittee is discontinued.

Travelling Lecturer Committee: G.T. Sincerbox will serve as the chair ex officio.

ICO Prize Committee: the chair will be A.A. Friesem

Education Committee: potential chair A.A. Sawchuk to be contacted by A.H. Guenther (action 02/20).

Standards Committee: the chair will be L.L. Wang.

The chairs should now propose members, including the new members of the Bureau. Members have to be proposed to President and Secretary before December 25 by mail (action 02/21, all committee chairs). In addition, members who have interest in participating in one

activity are invited to offer their service to the chair. Every bureau member should be on at least one committee.

A.H. Guenther will be responsible for ICO participation in ALC, the African Laser Centre project, along with the greatly appreciated support of Pierre Chavel.

6) Next ICO Book

The President will be the Editor of ICO Book 6, following the track of using SPIE as publisher. SPIE is still negotiating with publishers of previous books to be allowed to reprint them and make the ICO Books a series.

7) ICO Participation in meetings and schools: events to be approved

Opportunities to schedule ICO Bureau meetings in 2003, 2004 are considered together with ICO participation in future meetings. The 2003 Bureau meeting will last two days and will be held on Saturday, June 28 and Sunday, June 29 in Joensuu just before the ICO Topical meeting, which will be held 20 km away. Joensuu is a 50 minutes flight from Helsinki and there are several flights per day.

ICSU rules: the ICO meeting participation forms should be changed to make sure that the organizers are aware of the current ICSU rules concerning the free circulation of scientists (give reference to appropriate page of ICSU website) and asking them how they intend to proceed to follow these rules (action 02/22, Friberg).

Optics, Life and Heritage: This topical meeting has been planned for May 2003 in Havana, Cuba, in collaboration with OWLS. However, in recent months all contacts with the organizers had been lost and therefore the status of the conference arrangements was not known. The Bureau decided to leave the application on table and ask G. von Bally and M. Calvo to explore the possibility of re-scheduling the meeting and associating it with the upcoming Riao/Optilas 2004 conference (action 02/23, Friberg; 02/24, von Bally and Calvo).

ROMOPTO 2003: This is the 7th conference in a series, planned for 8-11 September 2003 in Constanta, Romania. Romania again is an ICO member, and the Bureau sees the need to support the optics and photonics development in this region. The application was received in the last minute during the ICO-19 Congress, but the Bureau decided to endorse the conference and give it a US\$ 1,000 grant (pending approval from the Treasurer, who was not present during proceedings). G.C. Righini was appointed as the ICO representative (action 02/25, Friberg).

8th Int'l Conference on Education and Training in Optics and Photonics (ETOP 2003): This conference, the next in the ETOP series run jointly by ICO, SPIE, and OSA, is planned for 5-9 October 2003 in Tucson, AZ, to be co-located with the OSA Annual Meeting 2003. The ICO representative in the Steering Committee is Art Guenther. While the ICO Bureau took a favourable attitude towards the conference, including the applied US\$ 3,000 grant for assistance of attendees from less-favoured regions, the application was tabled owing the deficiencies pertaining to visas and free circulation of scientists as required by ICSU and IUPAP policies. Once these issues are clarified and sufficient assurances obtained from the organizers, the application can be re-considered (action 02/26, Friberg).

Optics in Computing (OC 2004): A preliminary application supported by all European parties was received during the ICO-19 Congress, suggesting that the conference be organized during March/April 2004 in Engelberg, Switzerland in association with the European Optical Society. The contact person is J. Jahns of the University of Hagen. The Bureau decided that on

submission of a more complete application, containing precise dates, lists of Program Committee members, and a budget, ICO can co-sponsor the conference and give it a US\$ 2,000 grant to be used for participants from developing areas (pending approval by the Treasurer), provided that also the Joint Steering Committee of the whole OC series supports the application (action 02/27, Friberg). The ICO representative for the next term in the Joint OC Steering Committee is M. Yzuel.

Int'l Conference on Optics and Photonics: This is a preliminary title for a major ICO meeting scheduled for 13-15 July 2004 in Chiba (Tokyo), Japan. While traditionally the ICO Bureau meetings every 10 years, in years ending with 4, have been in Japan, there is still plenty of time and the Bureau left this issue open, to explore also other possibilities. The status of ICO Topical Meeting was approved, and I. Yamaguchi was appointed as the ICO representative. No financial assistance was applied or granted (action 02/28, Friberg).

V RIAO / VIII OPTILAS: The next conference in this series takes place 2-8 October 2004 in Porlamar, Margarita Island, Venezuela. The Bureau decided to grant this meeting the status of an ICO co-sponsored event, as has been customary with the previous meetings in this series, and also award it a US\$ 2,000 grant for assistance of participation from less-favoured areas, as applied. The ICO representatives are M. Calvo and N.G. Gaggioli (action 02/29, Friberg). This conference may also be considered as a potential venue of the ICO Bureau meeting 2004.

20th ICO Congress: After the General Assembly had voted to award the next ICO Congress to China, to be held 21-26 August 2005 in Changchung, north-eastern China, under the title "Challenging Optics in Science and Technology", the Bureau considered the financial matters of the proposal. On prior advice from the Treasurer, the Bureau gave ICO-20 a grant of US\$ 7,000 to be used to assist participation from developing countries. It also granted a loan of US\$ 6,000, and assumed a risk of US\$ 10,000 in the outcome (action 02/30, Friberg). The Bureau representative to ICO-20 naturally is the new ICO president, R. Dändliker.



During the ICO-19 banquet in Florence, first to the right A. Guenther, giving same announcement. Near from the right N. Gaggioli, G. Jin, R. Dändliker, I. Yamaguchi, E. Arthurs.

MINUTES OF THE ICO BUREAU MEETING

held in Joensuu, Finland, on Saturday, June 28, 2003, from 11:00 to 18:00
and Sunday, June 29, 2003, from 9:00 to 17:00

Present:

ICO Bureau Members: H.H. Arsenault, M.L. Calvo, R. Dändliker, A.T. Friberg, A.A. Friesem, N.G. Gaggioli, A.H. Guenther, G. Jin, M. Kujawinska, Y. Petroff, G.T. Sincerbox, T. Tschudi, G. Von Bally, A. Wagué, A. M. Weiner, I. Yamaguchi.

Apologies for absence have been received from: B.Y. Kim, G. Righini, A.A. Sawchuk, L.L. Wang,

Attendance on the 29 June: P. Chavel, ICO Senior Adviser (*ad personam*).

1.- Call to order, introduction, matters arising

R. Dändliker, President, opened the session and asked the ICO Bureau members present to introduce themselves. Apologies for absence have been received from P. Chavel (who joined the Bureau meeting on Sunday 29, 2003). The president thanked A.T. Friberg, for the arrangement and facilities to hold the ICO Bureau meeting at the occasion of the ICO Topical meeting "Polarization Optics 2003" held in Polijarvi (Finland).

The approval of minutes of the previous ICO Bureau Meeting, held in Florence, August 2002 is proposed. Questions regarding previously approved actions will be discussed later. Motion: "to approve the minutes of the ICO Bureau Meeting held in Florence (Italy), 23-24 August 2002". (Motion: G. Sincerbox, and second A.H. Guenther, unanimously approved).

R. Dändliker reviewed the list of actions decided at the last ICO Bureau meeting held in Florence, August 2002, and of matters arising from this last meeting:

- Action 02/1 Sincerbox: He has been in contact with J. Goodman. The offered grant of USD 50,000 is still opened, however there must be an acceptable proposal (acceptable to the Foundation). There are various possibilities for awarding it: A) Fellowship for a student from a developing country to attend an American university to follow an academic course. B) Travel expenses and registration for a student or young researcher from a developing country to attend an international meeting. C) Equipment for laboratories in developing countries. D) Proposals from research centers associated to ICTP. E) Short stages in research and academic centers for students from developing countries. Item A) represents a high cost and would require the ICO to find additional donors. Item C) also implies high cost for the transferring of equipment. Items D) and E) are currently being developed at ICTP. Item B) is considered the most appropriate proposal. It is necessary to fix a selection procedure for the development of item B). ICTP will be asked for help since it is currently doing such a task for students participating in Trieste activities. Also, ICO/ICTP Award is operating in a similar manner. Motion: "to create a J.W. Goodman grant for travel expenses and registration for a student or young researcher from a developing country to attend an international meeting". (Motion: A.H. Guenther and second G. Sincerbox, motion adopted by majority). This motion is conditioned upon approval by the Goodman Foundation. A specific way of announcing the grant will be proposed to make it visible and an award ceremony will be organized on time (Action 03/1, Guenther, Friesem,). As an extension, a second level of selection could be done by TSOSA Advisory Group. Contacts

with ICTP responsible for optics programs, Gallieno Denardo, will be initiated. The ICO/ICTP Award Subcommittee will be asked for assistance.

Meetings

- Action 02/2 Calvo: She has initiated further contacts with Portuguese colleagues in order to reactivate the membership of Portugal, withdrawn in 2001 after the sad demise of Prof. O.D.D. Soares who was the former contact in that country. These new contacts now appear to be more fruitful and some conversations are expected in the forthcoming months of 2003.
- Action 02/3 Saleh: Possible contacts with Egypt will be discussed in point 9 of this meeting's agenda, dedicated to ICO Membership.
- Action 02/4 Chavel: Possible contacts with South Africa will be discussed in point 9 of this meeting's agenda, dedicated to ICO Membership.
- Action 02/5 Sheppard: Possible contacts with the Philippines will be discussed in point 9 of this meeting's agenda, dedicated to ICO Membership.
- Action 02/6 Righini: Matters regarding educational material for a web catalogue will be discussed in point 4 of this meeting's agenda dedicated to the report of activities of ICO Committees.
- Action 02/7 Education Committee: M.L. Calvo, Secretary General, informs that the ICO Secretariat has received SPIE Optics degree directories that have being mailed to all ICO Territorial Committees.
- Action 02/16 Righini: to be discussed in point 4 of this meeting's agenda.
- Action 02/22 Friberg: matters concerning ICSU rules for the free participation of scientists were discussed in a point added later to this meeting's agenda.

The other 2002 actions have been completed.

2.- President's report:

The President reviewed the main events and ongoing actions.

For the period 2002-2005 a new Bureau composition is under operation. It involves a new Executive Committee and a new Secretary General after P. Chavel who served for twelve years at ICO Secretariat with persistent high dedication and effectiveness. The ICO Committees have been organized with new chairs and members. All ICO Bureau members are now participating in at least one Committee. Special thanks are addressed to P. Chavel, now Senior Adviser (ad personam) for his highly dedicated work.

Relations between ICO Bureau members and Territorial Committees have to be improved.

There are presently several Territorial Committees who have given little information about their activities. Personal contacts with scientists responsible of these Territorial Committees are necessary. A list of liaison committees has been assigned to each one of the ICO Bureau members to ensure a current contact and connections. Further contacts with the Russian Territorial Committee have been made, materialized through a visit: they have contributed to ensuring the current financial situation of this committee. Actions have to be proposed to clearly state the structures of the Territorial Committees. Discussion on these matters is to be continued in point 5 of the present meeting's agenda.

The ICO Newsletter (NL) is now linked to the ICO web site as a pdf format file. The April 2003 issue contains the President's message now linked to the web site as well.

Forthcoming events with ICO participation were discussed in the Long Range Planning Committee and will be reviewed in point 7 of the present meeting's agenda.

ICO contacts have to be enhanced through visits or participations abroad of ICO Bureau members. A package of presentation folders edited by the ICO Secretariat will be provided to all ICO Bureau members as edited by the ICO Secretariat. (Action 03/2, Calvo)

The President has been invited to participate in various events: i) to the tri-annual meeting of the Spanish Optical Society (SEDO) to be held in Santander (Spain) in September 2003, where he will deliver an invited conference. ii) the Workshop on Fundamentals and Applications of Lasers to be held in Morocco in December 2003. Even if the later is not an ICO supported event, other ICO Bureau members will participate as lecturers as well. iii) the NATO workshop held in Ukraine where he met with Prof. O. Angelsky of the Ukrainian Territorial Committee. iv) an invitation to present the ICO in the bulletin of the Swiss Society of Optics. For this occasion an organigram of ICO structure has been prepared. This material could be used further by other ICO Bureau members, for the purpose of ICO presentation.

The European Physical Society (EPS) has declared the year 2005 as the World Year of Physics (WYP). The ICO is recorded as a participating commission among other societies and institutions like IUPAP and UNESCO. Information appears at the WYP web site. There is a coincidence with the ICO-20 Triennial Congress which will be held in the year 2005 as well. The ICO will undertake related activities for enhancing visibility of the Optics community. Initiatives could come from various ICO Territorial Committees as well. In view of the tendency of decreasing numbers of students in physics it is necessary to take initiatives on a general level.

OSA has created an OSA foundation with financial support of some private foundations and with a focus on developing countries. The details on this initiative appear in the last issue of OP News. The ICO is open to collaborate with the OSA in forthcoming programs related to this foundation. Past-President, A.H. Guenther will contact OSA officials responsible for the program to ensure ICO/OSA cooperation on these activities. (Action 03/3, Guenther).

The next edition of the ICO Book, *International Trends in Optics*, is now under preparation. This ICO series has increased its distribution and 270 copies of the previous “*International Trends in Applied Optics*”, edited by A. Guenther (SPIE publication) have been sold. We expect to continue with this dynamic publication.

3.- Financial matters

Treasurer G. T. Sincerbox, supplied the financial status report. ICO finances are in good shape but expenses have been high as well. Dues have increased according to new membership. The balance for ICO-19 is not yet closed, and it is expected to be ended within the current year. The Travelling Lecturer Program has been highly successful and there is only a remaining amount of USD 1,000 in the original budget - although money received as royalties on ICO books can also be applied to the travelling lecturer program as specified in the Rules and Code of Practice. Data from the first nine months of 2003 are supplied. There is around USD 160,000 available in our account along with another smaller amount from the French deposit. A tendency for retained earnings is reported. A list of delinquent territories is presented. Five countries have three years in arrears. The territorial contacts assigned to individual ICO Bureau members should be used to assess the current situation of Territorial Committees with a large amount in arrears. It is expected that the remaining territories will end with their dues on the current year. A summary for meetings support is presented. An amount of USD 4,000 has been approved for grants, as does another amount of USD 17,000 for the organization and support of the next ICO-20 to be held in Changchun, China, in 2005. There is a problem arising as the

remaining total amount for the rest of the triennium now appears to be drastically reduced. The Prize and Awards update list is provided along with the approved increasing for them.

The cost of the publication of the ICO Newsletter is presented. This subject will be treated as part of point 10 of the present meeting's agenda. There is also an approved amount for New Projects. The Treasurer introduces comments on the potential problems arising from the use of risk money in support of meetings. This risk money is not part of the approved budget and, hence must be provided from the ICO reserves. If the meeting incurs a loss, the money comes from ICO reserves, if there is a profit then the ICO share goes to the reserves. Fortunately, paying risks do not occur too often. Loans have obviously no risk.

ICO is still working on the possibility of a grant of USD 50,000 donated by J.W. Goodman (ICO President 1987-1990). One proposal is to use this grant for travel assistance to young researchers from developing regions to attend scientific meetings. Support from ICTP will be demanded to ensure an effective procedure for election of candidates. This proposal is subject to approval by the Goodman Foundation.

4.- Committees' reports, except prizes and awards

4a) Long Range Planning Committee

The Chair of the Committee President R. Dändliker, reports. The Committee had a previous meeting. This meeting is commonly prior to ICO Bureau in order to discuss at the ICO Bureau the main issues considered. The long range planning follows essentially the guidelines presented in the green book Towards ICO-19 (pp.48-49) and the report of the Long Range Planning Committee in the minutes of the ICO Bureau meeting in Florence 2002. A list of reports and activities related to optics in developing countries has been previously sent to all ICO Bureau members for consideration and some actions were already discussed in the point 2 of the present's meeting agenda.

Statements:

One of the keys for successful activities and global projection of ICO in the optics world community is to ensure that all Territorial Committees be fully operational.

President R. Dändliker has proposed that all elected ICO Vice-Presidents may have the responsibility for a few Territorial Committees to enforce activities and contacts under a more realistic and efficient procedure.

The intentions and motivations of Territorial Committees must be properly known by the ICO Bureau. Also, the ICO has to take advantages of the organization of the General Assembly, where a percentage of ICO Territorial Committees are present, to determine "in place" their current activities.

The ICO may also activate the participation of ICO Bureau members at the annual ICO Bureau meetings and enhance their direct involvement on the issued actions.

The ICO now has a global presence due to the geographical distribution of Territorial Committees and this increases its strength.

ICO is not working on the basis of large budgets, and this creates a weakness on its structure and potentiality. However, the main objective of ICO is not to compete with international societies but to help to enlarge the presence of optics in our society.

Proposed actions:

- All ICO Bureau Vice-Presidents have to inform the President and Secretary General about their current activities in relation with liaison committees.

- The Singapore Territorial Committee needs to be reactivated and contacts need to be reassumed.
- The General Assembly has to be the forum for the updating of ICO Territorial Committees activities. Page/ 4 Committee Reports and Awards
- Past-President A.H. Guenther will contact the OSA representative on the ICO Bureau in order to receive information on the recent creation of an OSA Foundation.
- ICO is negotiating a grant of USD 50,000 that could be donated by J.W. Goodman (ICO President 1987-1990). This grant will be used for the purposes of travel assistance to young researchers from developing regions to attend scientific meetings. Support from ICTP will be demanded to ensure an effective procedure for the election of candidates.
- ICO Awards and ICO Travelling Lecturer Program are among the most fruitful activities of ICO towards a projection of optics in the scientific community and, in general, in world society.

Dissemination of ICO Awards applications is required to achieve the general purposes. Posters will be designed and edited for distribution among the Territorial Committees. That action will be issued from ICO Secretariat. (Action 03/4, Calvo)

- The ICO web site is permanently being updated, including the ICO logo, for the purposes of high quality content and interaction enhancement with potential web visitors. This action is issued from the ICO Secretariat.
- The place for the next ICO Bureau meeting must be decided. There are various possibilities in view of the current forthcoming meetings and in connection with other possible events. This decision is taken at the ICO Bureau meeting and the information will be included in the corresponding minutes (see Point 8).

Further actions must be discussed regarding changes in the rules to be applied to activities regarding schools, etc. These actions will be reconsidered in the next ICO Bureau meeting (2004).

4b) Committee for the Regional Development of Optics

A. Wagué reported in the absence of G.C. Righini, Chair of the Committee. Electronic library facilities must be considered for providing free access to scientific literature and other related materials in general to members from Territorial Committees and, specifically for those from developing regions. ICO is having International Societies representatives as ICO Bureau appointed members and there is a real possibility to work in collaboration with them for providing on-line publications. UNESCO has already started a program concerning educational material. Another proposal is to use the material that has become obsolete in certain developed regions and that could be transferred to other places inside a donation program.

N. Gaggioli also reports. The situation in various geographical areas is not comparable. For example Argentina has partially solved the problem of access to European publications, but not regarding other international ones. Brazil and Mexico seem to have solved the problem. There is a main open problem for small Latin-American countries. Concerning other countries, in general, laboratory equipment used to be renewed every ten years. ICO could coordinate the transfer of material to less favoured centers. An added problem for import/export facilities must be considered. Another problem deals with the possible transfer of software to a second or third user. Optical equipment has a real value, as is the case for high power laser sources and other related optical instrumentation. A definition of the agreement between companies and academic institutions needs to be worked out.

OSA and SPIE could facilitate access to their electronic publications. The ICO has to help for according a certain number of memberships in International Societies that offer access to some scientific journals as electronic files. There is an approved budget for New Projects that could be used for this specific program and that can be considered for the next 2005 budget. A person responsible for preparing the specific budget has to be designated.

Motion: “to study the possibility of using ICO establishment contacts for donation of equipment”. (Motion: H.H. Arsenault, and second M.L. Calvo, approved by majority). The creation of a sub-committee of the Committee of Regional Development and in collaboration with the Education Committee will be studied. (Action 03/5, Arsenault, Calvo,).

A proposal is presented from M. Kujawinska to collaborate with other members of the Committee for Regional Development to define a line of action for solving this particular issue. Also, ICO has to be aware that in many countries educational material should be available in languages other than English, say Spanish, Portuguese, and so on. The same fact should be considered for educational kits. ICO could contact directly responsible authorities in specific countries or regions informing them on the necessity to support expenses for the distribution of educational kits. OSA has kits and it is possible to discuss an agreement OSA/ICO for the distribution of this material. Distribution of publicity among the territorial committees informing them on this facility is also a possible action. Translation of educational material from English into another alternative language has to be considered.

4c) Travelling Lecturer Committee

G. Sincerbox, Chair, reported. Several lecturer activities have taken place in 2003 in Egypt, China, India, Brazil, Mexico and Venezuela. The 2003 program has been a success.

4d) Education Committee

A. Guenther reported on behalf of absent Chair A.A. Sawchuk. The ICO should help to disseminate educational materials. Future actions towards the translation of current kits technical texts into languages others than English should be undertaken. The forthcoming ETOP meeting, part of the series of ICO meetings, will be held in Tucson (Arizona, USA) in October 6-8, 2003, in conjunction with the OSA Annual meeting 2003. A high level conference has been organized but further actions are required for future related activities. There is a proposal for offering a kit to each Territorial Committee, although this is not an immediate action since the material is costly and an agreement with OSA is required. Contacts between OSA-SPIE have to take place to discuss further issues.

4e) Standards Committee

I. Yamaguchi reported in the absence of L.L. Wang, Chair of the Committee. The ICO is an external commission of the International Standards Organization (ISO) at the Technical Committee 172, dealing with standards on optics and optical instrumentation. Last June 9-11, 2003, a plenary meeting of ISO/TC 172, was held in Tokyo and I. Yamaguchi attended as ICO representative. Interactions among the committee members took place. The ICO has nominated L.L. Wang as representative at the ISO/TC 172. It is nevertheless necessary to define a focused content for the activities which ICO could play in this ISO committee. At the Tokyo meeting only technical work was done in relation to the revision of new standards applications. I.

Yamaguchi contributed to the work on standards for interferometric instruments. There is a clear connection of standards and industry, but ICO needs to define the current interest and pertinent activities. Information on webs related to standards is periodically revised on the ICO web site. There is a particular activity for ICO to disseminate the information on standards in developing countries. A catalogue for available standards is required and the number of Territories potentially interested in this information should be checked. The Standards Committee needs to study whether the work of this committee inside ISO has to continue or not since there is not clear evidence on the usefulness. The committee needs to redefine its role.

5.- Reports of liaison with territorial committees and International Societies

5 a) Territorial Committees

A.A. Friesem reported on contacts with Romania. The Israeli Committee is now without any arrears. Problems have been encountered for contacts with Denmark and Norway.

N. Gaggioli reported on its contacts with Latin-American Committees. Many countries of this geographical area are in arrears. Discussions have taken place with organizers of the V RIAO/VIII OPTILAS forthcoming meeting to be held in Porlamar, Isla Margarita, Venezuela, in October 2004. Organizers agreed to have ICO support for the organization of the meeting. A meeting has been organized in Brazil on Condensed Matter and another will come on Electronics. In Columbia, national meetings are currently organized. Argentina organized an international school at the Center of Optics in La Plata. Prof. G. Kauffman (Past-President of the Argentina ICO) has received a national award for his scientific achievements. There is now also an SPIE chapter. Some conferences are being prepared as well as a workshop on Image Processing and Non Destructive Testing. There is a Laboratory Network organizing joint activities and an Annual Optics meeting, organized by the Argentina Territorial Committee. A school is going to be organized as a Brazilian-Argentina activity. In 2004 this school will be expected to have a large number of attendees. An international meeting on Optics of Surfaces and Interfaces is now under preparation in Mexico. Potential Territorial Committees in Chile and Peru are now increasing their presence at activities organized in the various Latin-American countries.

A.H. Guenther reported. There have been communications with Russia, and the holding of a major meeting in this country is under consideration. The Singapore Territorial Committee appears to be inactive, since contacts are not working duly and there is no update information from the Territorial Committee representative. Communication has not been possible either with the Turkey Territorial Committee. An offer has been received from Prof. D. Malacara and another from Peru for the co-organization of a school.

G. Jin reported. The Chinese Optical Society will nominate a representative for the forthcoming Adaptive Optics Conference in October 2003. The preparations for the ICO-20 General Assembly are on due course. Logically, the liaison with the UK Territorial Committee might be assigned to an ICO Bureau member from a European country.

M. Kujawinska reported that she has contacted the Ukraine, Slovakia, Lithuania and Poland Territorial Committees. Slovakia's Territorial Committee has a controversy since there are two claims for the contact person, a fact that must be resolved. Some of the smallest territories have decided to join and create a larger organization as an SPIE chapter. The Ukraine Territorial Committee is not showing a well defined organization and for the Byelorussia Territorial Committee, there were difficulties identifying responsible contacts. In various committees there

are signs of activity for organizing conferences and small meetings and workshops. Various degrees of quality of these activities have been reported with a dependence on the location. Future activities should be continued in Russia and in Poland, and towards the integration in the EU through a Network of Excellence.

A. Wagué reported that there have been contacts with Ghana/West Africa (Senegal). There is a plan to shift a school of optics to Dakar because of the political situation in the region. Gambia colleagues visited Dakar and the research laboratory of Prof. A. Wagué. A network of universities among various African countries could be established in the future. Contacts with Morocco as well as with Tunisia have taken place. In the latter, a LAM meeting was organized last December 2002 with great success. The contact with France is now under development. One school on Biophotonics was held in Dakar in a Hospital center. This activity was a collaboration with Swedish colleagues.

I. Yamaguchi reported that he has contacted the India Territorial Committee and an international meeting has been organized. A visit of Indian colleagues to Japan took place in 2003. No information is presently available regarding the Hungary Territorial Committee. In Japan, an ICO Topical meeting will be held in Tokyo in July 2004. The organizing committee is already nominated and operational. Proposals for invited speakers are in due course.

R. Dändliker reported contacts with the Swiss Territorial Committee. Austria is not having activities inside Territorial Committee since it is no longer an ICO member, an issue that should be analyzed.

A. T. Friberg reported. He is in charge of the ICO Territorial matters in Finland and he has contacted the Territorial Committee chair in Sweden as well. In Finland the ICO contacts work well, with good distribution channels of information among the members of the optics community. The ICO Newsletter is distributed throughout Finland, and information is disseminated also via the Finnish Optical Society's quarterly news journal (Fotoni). In Sweden the situation is slightly different. The ICO Territorial Committee is appointed by the Royal Academy of Sciences, who also pays the dues. However, the Territorial Committee activities in the present form do not sufficiently reach out to the optics and photonics community in Sweden, and improvements are needed.

H. Arsenault reported that the Canada Territorial Committee is fully operational but so far consists of a single person, R. Lessard.

G. Von Bally reported that he is currently a member of the board of the German Optical Society. L.L. Wang will continue to operate as a liaison with the German Territorial Committee. This initiative will be supported by G. Von Bally.

In sum, the activities of the liaison committees are showing positive results.

5b) International Societies

H.H. Arsenault, SPIE representative reported that the ICO is participating with the SPIE and the OSA in a series of meetings for Optics in Computing (OC). The next OC'2004 will take place in Engelberg, Germany. A problem came up due to a possible misunderstanding or lack of information to the organizing committee. M.J. Yzuel, appointed ICO representative on the OC Steering Committee has demanded to the ICO Bureau a clarification of the situation. OC'2004 has been presented as an EOS Topical meeting, and no ICO, SPIE and OSA representatives have yet been nominated. The meeting web site does not contain the relevant information. This fact is considered as irregular. SPIE should be co-sponsoring this meeting according to the

bylaws. The agreement needs to be followed, as it was done for previous OC activities. The solution can be obtained by revisiting the current organization. EOS representative T. Tschudi will contact the organizers. (Action 03/6, Tschudi). Treasurer G. Sincerbox proposes to retain the accorded grant until the situation is clarified. Discussions on the forthcoming OC'04 meeting followed. P. Chavel reported on the history of the OC series. He offered to provide also in the future information concerning previous ICO activities that is sometimes needed. The OC series has its own bylaws, the Steering Committee approves the place for the new meeting and other activities related to OC organization. The bylaws are available at the ICO web site as well as the full history of this ICO meeting series. The committee needs to be reactivated and one person is needed to send the appropriate information to the current members of the Steering Committee to secure an appropriate functioning. H. H. Arsenault stated that a meeting of the Steering Committee recently took place at the OC'03, 18-20 June 2003 in Wyndham, Washington DC, USA.

A. Weiner, IEEE/LEOS representative reported and he explained the concern of IEEE/LEOS towards an efficient collaboration with the ICO. IEEE/LEOS has also taken initiatives for helping developing countries in the relevant areas.

T. Tschudi, EOS representative reported that the EOS is enhancing activities towards the designation of two categories of participants: individual membership or societies other than the European ones.

G. Von Bally reported on the common activities of ICO and OWLS. A satellite meeting has been organized under ICO co-sponsorship, topics on Biophotonics have been considered and high participation took place. OWLS participated in the recent Winter College held in Trieste, ICTP, with ICO, SPIE, OSA collaborations, as well. A report on the meeting in Trieste for the Trieste System support was presented. This point will be discussed further on point ten of this agenda. Other forthcoming meetings such as the one in Australia in 2004 will take place.

A. Wagué reported on the LAM network. He reviewed the history of this African network. Financial support from ICTP, Senegal Government and French institutions was accorded. A series of meetings have taken place in different African locations. A recent one in Tunisia in December 2002 has been a great success regarding both number of attendees and scientific quality. There is an exchange program concerning lasers applications inside the LAM Network. Various institutions are involved in Senegal, Ghana, Sudan and Cameroon. Stronger interactions are expected by incorporating further African countries as Egypt and South Africa. The internal organization had the flexibility to facilitate the exchange of activities. International contacts were reported as well with European, North-American and Asian institutions. The LAM current motivation is to develop major and effective links in order to have access to large installations and equipment. ICTP, Upsala University and the ICO will be and are now collaborating to enhance this promotion of Laser Science in Africa. Further help is needed to define competitive research groups in this area. LAM includes an important number of African countries, from North, West, East and South Africa continent. A forthcoming International Workshop of LAM will take place in Cameroon, December 2004. One of the major problems of African researchers is that usually they are working without the appropriate connections with other colleagues of the community across the world. Universities have serious problems in offering Ph.D. programs. A so-called Sandwich Program exists with other European universities like German ones.

N. Gaggioli added information on activities regarding connections with Latin-America, for example, through Brazilian institutions. Every country involved has a nominated coordinator to act as a link with other countries and to organize workshops and other initiatives.

5c) African Laser Center

A. Guenther reported that this is a great opportunity for ICO to meet its goal in developing countries. The current work developed inside LAM is highly appreciated. The meeting held in December 2002 in Tunisia was a great success, giving opportunities for many colleagues from the African regions to meet. The facilities concerning the use of large equipment's are being considered. P. Chavel participated in the enhancement of these activities. South Africa will reactivate its participation in ICO and its collaboration is desirable. Progress is now made for common initiatives, especially towards an increasing cooperation in the Laser Science area. Other activities from ALC are expected but currently a stronger input is desired. South-African institutions are expected to collaborate in these programs in view of their large capacity regarding laser equipment and large installations already available. South-African installations should be used as nodal centers for other African countries. The LAM network is pursuing work in this direction.

6.- ICO awards

6a) ICO Prize Committee

Chair of the ICO Prize Committee A. Friesem proposed that the ICO Prize 2003 be awarded to Dr. Benjamin J. Eggleton from the University of Sidney (Australia). The high quality of his scientific work as a researcher younger than 40 has been considered. The nomination was proposed by an Australian scientist. The award citation reads: "the ICO Prize for the year 2003 is given to Dr. Benjamin J. Eggleton, from University of Sidney, Sidney, Australia, in recognition of the high level of research in the areas of nonlinear optics, photonic bandgap structures, optical fibre gratings, air-silica microstructured fibres, tuneable optical fibre devices, microfluidics, dispersion compensation techniques, Raman amplification and optical regeneration. These achievements were done as a researcher younger than 40 years old".

The massive advertisement for ICO Prize done in the year 2002 has resulted in an increasing number of candidates. The call is now open for the 2004 Prize. The deadline is 15 April 2004. An institutional call will be inserted into the January 2004 issue of the ICO Newsletter.

Motion: "to award Prof. B. J. Eggleton the ICO Prize for 2003". (Motion: G. Jin and second G. Sincerbox, unanimously approved). Dr. B. J. Eggleton will be invited to deliver a talk at the forthcoming ICO-20 General Assembly. (Action 03/7, Jin, Sincerbox,)

6b) ICO/ICTP Award Subcommittee

The Chair of the ICO/ICTP Award Subcommittee A. Friesem reported. The ICO/ICTP Prize is addressed to young researchers from a developing country and attending the ICO/ICTP Winter School of the actual year. The committee consists of two members from ICO and two from ICTP. For 2003, there were five candidates. The proposal for the winner Robert Szipöcs was made by the Hungarian Academy of Sciences in Budapest. His important contributions in the area of multilayer mirrors for laser cavity stability were considered. He received the diploma and prize at a ceremony during the last ICTP/ICO Winter School on Biophotonics, Trieste, February 2003, where he and the ICO/ICTP Award 2002 winner Alphan Sennaroglou delivered

a talk. An article on the scientific achievements of Dr. R. Szipöcs appeared in the ICO Newsletter, April 2003.

6c) Galileo Galilei Award Subcommittee

Chair of the ICO Galileo Galilei Award Subcommittee G. Von Bally, reported that this subcommittee belongs to the Committee for Regional Development in order to provide a link and fluid information on the activities related with this award. For 2003 nine nominees from seven countries were received. The committee unanimously proposed Prof. Cid B. De Araujo, from the Universidade Federal de Pernambuco, Recife, Brazil. Prof. Araujo is a leader of the group on non-linear optics in the mentioned university, with international projection and leading important internal activities in Brazil toward the development of research in Optics in that country. The details on the major scientific achievements of Prof. De Araujo were provided by Prof. G. Von Bally. The award citation reads: “the Galileo Galilei Award for the year 2003 is given to Prof. Cid B. De Araujo, from the Federal University of Pernambuco, Recife, Brazil, in recognition of his outstanding contributions to the field of non linear optics achieved under comparatively unfavourable circumstances”. This is approved by the Bureau.

Motion: “to confer Prof. Cid B. De Araujo the ICO Galileo Galilei Award for 2003”. (Motion: A. Weiner and second M. Kujawinska, approved by majority).

The Bureau then discussed the proposition by Prof. G. Von Bally concerning a possible upgrade the name of the Galileo Galilei Award Subcommittee within the Committee for Regional Development. Motion: “the ICO Galileo Galilei Award Subcommittee becomes a committee inside the ICO Committee for Regional Development.” (Motion: G. Von Bally and second A. Guenther, approved by majority). (Action 03/8, Von Bally).

7.- ICO participation in meetings and schools

A.T. Friberg, Associate Secretary in charge of ICO participation in meetings, reported.

7a) Preparation of ICO-20, Changchung, China: review of present status and plans for actions, review of planned practical organization (J. Cao)

Jianlin Cao, ICO-20 Co-Chair and invited to address the ICO Bureau, presented a detailed report with the help of computer on the current state of the organization of the ICO triennial meeting. The Chinese Ministry of Science and Technology is supporting this meeting. The conference will be held in a new convention building in Changchun. Explanations on the cost of renting of conference site, with a "forum" for 1,000 persons, were provided. A new airport is under construction for domestic flights near Changchun. Accommodation will be provided in a series of hotels of different price levels. The time schedule was provided: 1) last call for abstracts, February 2004, 2) final announcement, May 15, 2004, 3) abstracts deadline, Jan 5, 2005, and 4) program issued, May 15, 2005. A list of main organizers was provided along with a list of co-sponsors and domestic co-organizers. The scientific aspects are now under consideration, and a complete list of topics, covering the main areas in Optics and Photonics were presented. The Proceedings of the meeting will tentatively be published by SPIE. The exhibition will take place in a main area of about 5,000 m². Companies from all over the world are expected to participate in the exhibition. Financial aspects were presented, addressed towards the covering of expenses for invited speakers and student registration help. Social

activities are also proposed, among them visits to local research places. Pre- and post-conference tours will be arranged by the organizing committee in various tourist places. This will be an important meeting as a major geographical and scientific representation of China in the Asian region. 2005 will be the World Year of Physics and activities in connection with this event would be desirable with an interest for the Optics community. As has been the custom in ICO, suggestions for plenary and invited speakers as well as for members of the Program Committee and the International Advisory Committee are requested from the ICO Bureau members. OWLS has already accepted to co-sponsor the Congress. ICO-20 web site is linked and managed by the organizers.

7b) Events which took place in 2002-2003 (A.T. Friberg)

Nine events have taken place with ICO involvement since the previous Bureau meeting in August 2002, and these were briefly presented. The events are: ICO-19 "Optics for the Quality of Life", Florence, Italy, August 2002; OWLS VII "Environmental and Bio-Photonics for the New Millennium", Luzern, Switzerland, September 2002; ASCOS 2002 "Advanced Study Course on Optical Chemical Sensors", Wroclaw, Poland, September 2002; ODF 2002 International Conference on Optics-photonics Design and Fabrication, Tokyo, Japan, November 2002; ATOM 02, Advanced Topics in Optoelectronics Micro & Nanotechnologies, Bucharest, Romania, November 2002; 6th LAM, International Workshop on Laser Physics and Its Applications, Tunis, Tunisia, December 2002; ICTP Winter College on Biophotonics: Optical Manipulation of Molecules and Cells, Miramare-Trieste, Italy, February 2003; Photonics North, International Conference on Application of Photonic Technology, Montreal, Canada, May 2003; OC 2003, Optics in Computing, Washington, DC, USA, June 2003.

Of the nine events, one was an ICO Triennial Congress, two were co-sponsored and five endorsed conferences, and one was an ICO school. For these events ICO had given a total of USD 14,500 in grants, assumed USD 12,500 in risks, and had approved USD 6,000 in loans. For most meetings the assessments of the ICO representatives have been received, and no significant problems has appeared. For some meetings, reports have been published in the ICO Newsletter.

7c) Events already decided

A.T. Friberg informed. Thirteen events have been approved with ICO support. These are two topical meetings, six endorsed, three co-sponsored, one ICO school, and one general meeting. The events are: "Polarization Optics", held in Polvijarvi (Joensuu), Finland, July 2003; TecnoLáser 2003, Havana City, Cuba, July 2003 (ICO representative: M.L. Calvo); RomOpto 2003, 7th Conference on Optics, Constanta (Romania), September 2003 (ICO representative: G.C. Righini); 6th International Conference on Correlation Optics, Chernivtsi, Ukraine (ICO representative M. Kujawinska), ETOP 2003, 7th International Conference on Education and Training in Optics and Photonics, Tucson, Arizona (USA), October 2003 (ICO representative in the Steering Committee: A.H. Guenther); 4th IWAOM, International Workshop on Adaptive Optics for Industry and Medicine, Beijing, China (ICO representative: G. Jin); Optics 2003, 3rd International Conference for Students, Young Scientists and Engineers, Saint Petersburg, Russia, October 2003 (ICO representative: M.L. Calvo); ICLAOM'03, International Conference on Laser Applications and Optical Metrology, New Delhi, India, December 2003 (ICO representatives: I. Yamaguchi and T. Tschudi), ICTP Winter College on Optics, Trieste, Italy, February 2004 (ICO liaison: A.T. Friberg); OC 2004, Optics and Computing, Engelberg,

Switzerland, April 2004 (ICO representative: M.J. Yzuel); ICO'04 Tokyo, 2004 ICO International Conference, "Optics & Photonics in Technology Frontier", Makuhari Messe, Chiba, Japan, July 2004 (ICO representative: I. Yamaguchi); V RIAO/VIII OPTILAS, 5th Ibero-American Meeting on Optics & 8th Latin-American Meeting on Optics, Lasers and their Applications, Porlamar, Margarita Island, Venezuela, October 2004 (ICO representatives: M.L. Calvo and N. Gaggioli); ICO-20, "Challenging Optics in Science and Technology, Changchun, China, August 2005 (ICO representative: R. Dändliker).

For these events ICO has awarded a total of USD 20,500 in grants, accepted USD 10,000 in risks, and approved USD 5,000 in loans.

7d) Future meetings and schools

Three new applications have been received. These are: "Optics, Life and Heritage" (For a Sustainable Development in the New Millennium), Havana, Cuba, September 2004; Basic Problems of Optics (BPO'04), Saint Petersburg, Russia, October 2004; and OWLS VIII, Biophotonics Down Under, Melbourne, Australia, November 2004. Some discussions arose regarding the first application. The Cuban conference is intended as a satellite meeting of the RIAO/OPTILAS meeting in Venezuela, with the approval of the organizers, but satellite meetings can only be associated with major ICO meetings (i.e., general, topical, and regional meetings). However, such a link between "Optics, Life and Heritage" and the RIAO/OPTILAS meeting would be very useful and benefit both meetings the development of optics in South and Central America. The place for the forthcoming ICO Bureau meetings in 2004 was discussed as well. An ICO Topical meeting will be held in October 2004 in Tokyo. Nevertheless, the Bureau considered that various geographical areas need an increase of ICO activities, as is the case of the Latin-American region. A proposal for the place of next Bureau meeting at the forthcoming RIAO/OPTILAS meeting, to be held in October 2004, in Porlamar, Isla Margarita, Venezuela was discussed. To arrive to a full agreement the status of the RIAO/OPTILAS conference in 2004 needs to be revised. In principle, more than one ICO topical meeting per year can be arranged.

Motion: "to have the Bureau meeting jointly at the V RIAO/VIII OPTILAS meeting, October 2004, Venezuela". (Motion: A. Guenther and second G. Sincerbox, approved by majority).

In addition to subjects addressed above, N. Gaggioli reported related information. There is a real importance of this meeting for the Latin-American community. Great efforts have been made to increase the participation and the scientific level, and the proposed place is very convenient.

I. Yamaguchi (ICO Representative) informed on the ICO Topical meeting to be held in Tokyo, 2004. New important subjects in optics and photonics, such as electronic devices and advanced instruments, are now considered for that conference. The occasion of the Tokyo 2004 meetings provides also a possibility to hold the ICO Bureau meeting in that context. After some discussions a motion is presented.

Motion: "to upgrade the V RIAO/VIII OPTILAS meeting to the category of an ICO regional meeting". (Motion: A. Guenther and second N. Gaggioli, unanimously approved). One of ICO's expressed goals presently is to promote Optics in this world region and it is important to take care on the facilities for language presentation, three official languages will be provided: Spanish, English and Portuguese. (Action 03/9, Guenther, Gaggioli,)

A.Friberg continued on informing on the new applications that were revised. "Optics, Life and Heritage", La Havana, Cuba, 26-30 September 2004, is now considered as a satellite meeting of the ICO Regional Meeting, Porlamar, 3-8 October 2004. The type of award accorded to this meeting needed to be discussed.

First motion: "to endorse the ICO satellite meeting in La Havana with USD 2,000 grant". (Motion: N. Gaggioli and second M.L. Calvo, not approved).

Second motion: "to endorse the ICO satellite meeting in La Havana with USD 1,000 grant". (Motion: G. Sincerbox and second A. Guenther, approved by majority).

G. Von Bally and N. Gaggioli were appointed as ICO representatives to this meeting. (Action 03/10, Friberg).

The application received for "Basic Problems in Optics", to be held in Saint Petersburg, October 2004 was discussed. The structure of the various hierarchical conferences associated with BPO'04 is convolved, and there were various opinions among the Bureau members in relation to this application. Two motions were presented. First motion: "To endorse "Basic Problems in Optics" with USD 1,000 grant". (Motion: G. Jin and second A. Friesem, not approved). Second motion: "To endorse "Basic Problems in Optics" with no grant". (Motion: H. Arsenault and second M.L. Calvo, approved by majority). M.L. Calvo was appointed as the ICO representative to the meeting. (Action 03/11, Friberg).

OWLS VIII: This meeting is the 8th of a series of conferences organized by OWLS. This forthcoming meeting will be held in Melbourne, Australia, 28 November - 1 December 2004, under the title: "Biophotonics Down Under". In discussion it was pointed out that part of the grant could be substituted by a risk, since risks do not influence the triennial budget. Motion: "To co-sponsor OWLS conference with USD 2,000 grant and USD 2,000 risk". (Motion: G. Sincerbox and second A. Guenther, unanimously approved). G. Von Bally was appointed as ICO representative for this meeting (Action 03/12, Friberg).

7e) Other considerations

A complete table of events was provided by A. Friberg. Several matters concerning the current Rules and Codes of Practice of ICO for meetings procedures needed to be discussed and, in certain cases, revised. The deadline dates for conferences applications were considered for the sake of a better organization and budget management. The general idea would be to have only two possible dates for considering conference applications; for example, at the ICO Bureau meeting and about six months prior or after it. It is also important that the organizers could get an answer within one month from the application deadline. First motion: "to have annually two deadlines for conference applications: April 15 and October 15 of current year". (Motion: A. Guenther and second T. Tschudi, unanimously approved). (Action 03/13, Friberg). Second motion: "the application must be submitted before a deadline which is at least twelve months prior to the conference or meeting and before the first call". (Motion: A. Guenther and second T. Tschudi, approved by majority). (Action 03/14 Friberg)

Further business: Owing to restrictions on participation, NATO Schools are not considered particularly appropriate to be supported by ICO.

Due to a lack of time, other matters concerning the ICO policies on meetings, such as modification of application Questionnaires as regards the visa issues, ICSU and IUPAP rules, potential hosts of ICO-21 in 2008 (first call included in the October 2003 issue of the ICO Newsletter), etc, were not addressed. Some of these subjects were considered in a late point of the current agenda as complementary issues.

8.- Date and place of the next ICO Bureau meeting

The precise schedule of the Annual ICO Bureau Meeting 2004 will be provided on due time and fixed by electronic mail. The organizers of RIAO/OPTILAS would be willing to host the Bureau meeting and absorbing possible additional costs. The place then will be Porlamar (Isla Margarita, Venezuela), 1-2 October 2004. (Action 03/15, Calvo).

9.- Membership

9a) ICO Membership

P. Chavel, Senior Adviser, reported on the current status of the South-African Territorial Committee. The contact was discontinued on the 90's, South-Africa was over six years in arrears and therefore ICO membership was discontinued. A new South-African committee is now being established and the appropriate office of the South-African Government in charge of paying the fees has been identified. However, in compliance with the current policy on membership, a letter from the new committee identifying the contacts, the operating rules of the Territorial Committee and expressing adherence in the ICO statutes is now needed. A draft has been established by P. Chavel in collaboration with the new contact persons in South Africa. A. H. Guenther will also take care on this current situation.

Secretary M.L. Calvo, reported that new contacts have been initiated with scientific and academic institutions in Moldova, Costa Rica and Ecuador. The current contacts will be pursued for future new ICO Territorial Committees in these three regions. In some cases difficulties have arisen in identifying the appropriate government institution to be officially designated for ICO membership application. It is expected that new Associate Members will be issued in a reasonable period of time. The same situation is still pending for the Hellenic ICO Territorial Committee. (Action 03/16, Calvo).

9b) ICSU membership

P. Chavel, Senior Adviser and responsible for ICSU contacts reported. As an affiliate commission of IUPAP, ICO is in a way a second rank member of the ICSU family. It is the only commission of an ICSU Union that operates like a union, with Territories as members. In 1996, it was decided to seek closer association with ICSU. ICSU rules also needed to be considered as well as to tight the current relations. Presently, optical science and engineering have developed as disciplines on their own. This situation has created particular attitudes since there are professionals in the area that do not consider themselves as physicists, for example, professionals in the area of communication, nanotechnology, and so on. Several studies of the future of optics were conducted in various countries and concluded that a special effort is needed to publicize the future importance of the field, make it known that it grew into a full-fledged discipline, and train professionals in anticipation of foreseeable growth. Therefore, it is our role at ICSU to promote the visibility of the field since we are the unique link. We need to realize that becoming a union is nowadays non-realistic. Another category of membership in ICSU, Scientific Associated Member, appears more appropriate. Our application can be considered in the next general assembly of ICSU, to be held in 2005. The official conditions have to be accomplished as for ICSU standard procedures. P. Chavel plans to draft an

application and requests assistance from the Bureau, in order to build up the most convincing arguments. These include possible collaboration with TWAS on grant programs, access to information and data banks. The first draft will be sent to the Bureau no later than September 1, 2003. One can expect an answer prior to the forthcoming ICSU General Assembly (late 2004-early 2005). The opinion of IUPAP representative at the ICO Bureau, Y. Petroff was required. During the discussion, Y. Petroff manifested his neutrality. His first contact with ICSU was at the Cairo (Egypt) meeting and he was not favourably impressed. However, the new staff has made large efforts to introduce changes and very positive effects were seen at the Rio meeting (with the exception that basic science was never cited). A.H. Guenther offered his help to have access to ICSU official responsible. ICSU has studied interdisciplinary initiatives very well. ICO claim is that Optics is a discipline on its own and it is not to be considered as an interdisciplinary field. Motion: "to submit the draft to the ICO Bureau members for reviewing, (no later than September 1, 2003) and then, if approved, to send it to ICSU official responsible" (Motion: A. Guenther and second H. Arsenault, approved by majority). (Action 03/17, Chavel)

9c) IUPAP links

IUPAP Council representative Y. Petroff reported that in the IUPAP organization there are working groups in various areas. One new Women in Physics working group has recently been established as well as another new group for Energy business. A first meeting including these new groups will be held in November 2003. In the meeting of February 2003 a new working group on High Power Lasers was approved and a meeting supported by the OECD Global Science Forum took place.

A. Wagué, representative at the IUPAP Commission C13 "Physics for Development" could not attend the last General Assembly. As for comments on other related organizations, UNESCO policy is now given priority for basic science while ICSU does not have similar priorities so clearly stated.

A.T. Friberg, representative to IUPAP Commission C15 "Atomic, Molecular, and Optical Physics", has had various contacts in relation to endorsements of conferences and the IUPAP C15 meeting.

In the absence of G.C. Righini, representative at the IUPAP Commission C17 "Quantum Electronics", M.L. Calvo reported. G.C. Righini will attend the forthcoming IUPAP meeting in Vancouver (Canada) next October 2003 as the ICO representative. Representatives at the IUPAP Commissions should be replaced by other persons in the case of impossibility of attending the corresponding meetings.

10.- ICTP relations and current plans for joint events

10a) TSOSA Advisory Group

M.L. Calvo, reported that at the Winter College on Biophotonics held at the Abdus Salam International Center for Theoretical Physics (ICTP, 10-21 February 2003, Trieste, Italy), a one day meeting took place to update various issues concerning the programs on Optics and Photonics for developing countries. The chair of the meeting was G. Denardo, ICTP Executive Deputy and head of the Administration Department. Participants from various international organizations were invited to the meeting: Elettra Synchrotron Trieste, IAEA, ICO,

IEEE/LEOS, LAM, OSA, OWLS, SPIE, UNESCO, and P. Chavel as personal guest. The two main points of the meeting agenda were to study which cooperation in Optics could be developed on an international basis and how to make programs of different organizations resonate. G. Denardo proposed the creation of the so called Trieste System for Optical Sciences and Applications (TSOSA) Advisory Group, with the mandate to create actions on Optics and Photonics in developing countries, proposing subjects for future Winter Colleges, training courses of ICS, Sandwich programs, and in general, external activities relevant to the Trieste System to be exported to developing countries. The size of the TSOSA Advisory Group remains defined by: IAEA, ICO, IEEE/LEOS, OSA, OWLS, SPIE, UNESCO, and the Trieste System itself (as a unique body). Representatives of the above organizations have to be (or have already been) elected inside them. An annual meeting of the TSOSA Advisory Group will take place coinciding with the Winter College. ICO needs to elect a representative at the TSOSA Advisory Group.

Motion: “to nominate Pierre Chavel as ICO representative at the TSOSA Advisory Group, for the period July 2003-July 2005”. (Motion: A.Guenther and second G. Sincerbox, unanimously approved). This nomination will be reported to ICTP representative at the TSOSA Advisory Group, G. Denardo. (Action 03/18, Calvo).

11.- Administrative business

M.L. Calvo reported on the various items.

11a) Administrative assistants and ICO web master

The ICO Administrative Secretary is fully operational as well as a web master, both at the Department of Optics, Faculty of Physics, Complutense University of Madrid (Spain).

11b) ICO permanent site

The past and new ICO Secretary took care of the management of ICO Archives. The new location was graciously provided by the Dean of the Faculty of Physics of the Complutense University of Madrid at a special place located in the above building. It is nevertheless advisable that for the sake of good management the archives and ICO itself, as an international organization, have a permanent site. The proposed place is the Institut d’Optique, Orsay, Paris (France), since historically it was the place where ICO was created. The ICO archives have a historical value and need to be located in a permanent and safe place. Also, archives could be partially converted into electronic files. The final decision will be taken by the Executive Community.

11c) ICO Newsletters

G. Sincerbox, Treasurer, reported that a letter from OSA has been received informing the ICO that the OSA can no longer bear the cost of distributing the ICO NL with OPN as it has been doing in the past. OSA has offered to continue to do this, but the cost of doing so must be covered by the ICO. This is on the order of USD 10,000 per year. The charges for this are not reasonable and would greatly impact the budget. The main question is: what is the effectiveness of the distribution of ICO NL among the Territorial Committees? Various proposals were made:

1) To ask the international societies and organizations to provide links to the ICO NL on their web sites. 2) To ask international societies to insert an advertisement in their periodical publications directing the reader to the web site containing the NL. 3) To ask the Territorial Committees that are responsible for distributing the ICO NL they have web sites or servers that could serve as links. As we must reply to the OSA by the end of the year, a decision must be made by November 1, 2003. (Action 03/19, Sincerbox, Calvo)

In addition, the pdf files of ICO NL could be sent by e-mail to each one of the Territorial Committees for subsequent distribution.

11d) Green Book "Towards ICO-20"

M.L. Calvo informed that the material related to the current agenda will be edited before the next bureau meeting for approval. The Green Book "Towards ICO-20" will be edited between two and six months before the next ICO General Assembly.

Late point: VISA issue

A.T Friberg, Associate Secretary in charge of ICO participation in meetings, informed on items not discussed in the point 7 of the current agenda due to the lack of time. Problems of scientists to obtain visas to attend meetings in various countries were reported. The actual difficulties seemed to have a strong dependence on the actual political status of the country of origin of the scientist. Sometimes private information on the visa applicant was requested. The main principle is that ICO follows the ICSU rules for visa issues and the meeting organizers will have to conform to that. As a result, some changes to the conference application Questionnaires were approved, and these will be implemented. ICO encourages the organization of meetings in all areas of optics and these activities are designed to fill specific needs, including regional development of optics.



Bureau members at the gate of the center in Joensuu (Finland) were the annual ICO Bureau meeting took place, 28-29 June 2003. From left to right: R. Dändliker, H. Arsenault, G. Sincerbox, A. Friberg, A. H. Guenther, N. Gaggioli, A. M. Weiner, M. L. Calvo, G. Jin, A. Wagué, T. Tshudi, M. Kujawinska, Y. Petroff, G. Von Bally, A. Friesem, I. Yamaguchi, J. Cao (one of the ICO-20 organizers)

MINUTES OF THE ICO BUREAU MEETING

held in Porlamar, Venezuela, on Friday, October 8, 2004, from 8:30 AM to 6:00 PM
and Saturday, October 9, 2004, from 8:30 AM to 1:30 PM

Present:

ICO Bureau Members: H.H. Arsenault, M.L. Calvo, R. Dändliker, A.T. Friberg, A.A. Friesem, N.G. Gaggioli, A.H. Guenther, G. Jin, B.Y. Kim, M. Kujawinska, G. Righini, A.A. Sawchuk (only 9 Oct.), G.T. Sincerbox, G. von Bally, A. Wagué, I. Yamaguchi.

Apologies for absence have been received from: P. Chavel, T. Tschudi, A.M. Weiner, L.L. Wang, Y. Petroff (e-mail 7 Oct.).

Invited to Point 5c) of the agenda: M.J. Yzuel and J. Walker (SPIE)

1.- Call to order, introduction, matters arising from last Bureau, approval of minutes Joensuu 2003

René Dändliker, President, opened the session. Apologies for absence have been received from T. Tschudi, P. Chavel, L. Wang, and A. Weiner. The president listed several changes in the Agenda. There is also a late proposal for ending the meeting no later than October 9 at 2:00 PM. The organization of the traditional ICO Bureau dinner was confirmed. M. Kujawinska requested permission to leave the room in order to deliver an invited lecture at the RIAO/OPTILAS meeting. Point 4e) was moved earlier in the agenda for discussions on the current situation and on the future of the ETOP series of meetings. Other changes in the Agenda concerned Point 5c) on the OiC activities that took place on the afternoon of October 8, with M. Yzuel, ICO representative in the OiC Steering Committee, joining them in the meeting, as well as J. Walker, from SPIE staff. Several other changes were made to the Agenda of October 9, such as the presentation of ICO-20 (Point 8b) by the organizers from the Chinese Territorial Committee.

The approval of the minutes of the previous ICO Bureau Meeting, held in Joensuu, June 2003 is proposed.

Proposal: “to approve the minutes of the ICO Bureau Meeting held in Joensuu, Finland, 28-29 June 2003”. (Motion: A. Guenther, second G. Sincerbox, unanimously approved).

H. Arsenault introduced J. Walker, Director of Meetings at SPIE. She participated in the discussions on Point 4e), the ETOP Steering Committee activities A. Sawchuk, OSA representative, joined the meeting on the following day October 9.

R. Dändliker proceeded to review the list of actions decided at the last ICO Bureau Meeting held in Joensuu in June 2003. As a first remark he noticed that action 6 did not appear on the current list. M.L. Calvo, ICO Secretary, explained that there was a misprint in the numbers appearing on the list, so that the number of actions to be reviewed is eighteen.

- Action 03/1 Guenther and Friesem: They have contacted the J. Goodman Foundation (JGF). Up to the now, these contacts have not resulted in any specific joint ICO/JGF document. G. Sincerbox, ICO Treasurer, added comments regarding the amount of interest the ICO could expect to earn on an endowment of US200,000. At the current rates, about 2-3%, this would be only US\$6,000. The amount originally discussed with the JGF was only US\$50,000 – this would return us only US\$1,500 at 3%. This quantity is equivalent to an ICO grant. N.

Gaggioli commented that it would be advisable to increase the amount assigned for the attendance of young researchers to meetings (>2,000 US\$/meeting) to ensure a whole financing. A. Friesem stated that the meetings organizers could provide some of the registration cost for young researchers. After some adding discussions there was a proposal to send an official letter from ICO to the responsible of JGF in order to clarify the availability of funds.

Proposal: “to send an official letter to JGF responsible to specify the availability of funds”. (Motion: G.C. Righini, second A. Friesem, motion adopted by majority). (Action 04/1, Friesem, Righini)

- Action 03/2 Calvo: A package of presentation folders with the title “What is ICO?” was edited by the ICO Secretariat and mailed to all ICO Bureau members. All Vice-Presidents and IS representatives, being in charge of the respective liaisons with ICO Territorial Committees, will ensure that all the mentioned material reaches the territorial committees.
- Action 03/3 Guenther: Some contact with the representatives of OSA Foundation took place in the preceding month, and in particular a letter to M. Morris, OSA President, was prepared in August 2003, explaining the position of ICO in relation to the current activities in favour of developing regions. However, this letter was never mailed by the ICO President due to a misunderstanding. This letter will be updated and then signed and mailed by R. Dändliker (Action 04/2, Dändliker).

The activities of OSA Foundation will appear on the forthcoming issue of the periodical Optics and Photonics News.

- Action 03/4 Calvo: This year, for the publicity of both the ICO Prize and ICO Galileo Galilei Award, only electronic files were provided. There is a general agreement that hard copies, should be provided as well. (Action 04/3, Calvo).
- Action 03/5 Arsenault, Calvo: This item is related to the Education Committee and the discussion is postponed until Point 4e) of the Agenda.
- Action 03/6 (misprint on the list of actions), Tschudi: Revisiting the current organization of OiC activities. EOS representative T. Tschudi (absent) has contacted the organizers of OiC 2004.
- Action 03/7 Jin, Sincerbox: B. Eggleton, recipient of the ICO Prize 2003 has not yet been contacted by the organizers of the forthcoming ICO-20 Congress. It is planned to do it soon (October-November 2004). (Action 04/4, Jin, Sincerbox)
- Action 03/8 von Bally: Cid B. de Araujo, recipient of the Galileo Galilei Award 2003, was invited to participate at the V RIAO/VIII OPTILAS, where the award ceremony took place as well.
- Action 03/9 Guenther, Gaggioli: The facilities for language presentation at the V RIAO/VIII OPTILAS, as an ICO Regional Meeting, were explored. However, it is too expensive to have simultaneous translation for the three official languages: English, Portuguese and Spanish. There were presentations in these three languages with a higher percentage in English. Nevertheless, this issue should be considered in future ICO activities.
- Action 03/10 Friberg: The activities at the “Optics, Life and Heritage” meeting, a satellite meeting of the V RIAO/VIII OPTILAS, will be discussed in Point 7a) of the Agenda.
- Action 03/11 Friberg: Contacts with the organizers of “Basic Problems in Optics” and the associated Workshop on Optoinformatics were initiated by M.L. Calvo, ICO representative. She will participate in this forthcoming event in October 2004.
- Action 03/12 Friberg: The forthcoming OWLS8 conference is an ICO co-sponsored event

and US \$2,000 grant was provided together with USD 2,000 in risk. However, later the conference organizers decided not to transfer the risk money. G. von Bally will participate as ICO representative.

- Action 03/13 Friberg: The work related to the decisions of having two annual deadlines for conferences applications is in progress. The implementation is now being carried out, but the current operation is not quite satisfactory. This action will be reported further on Point 7 of the Agenda.
- Action 03/14 Friberg: The proposal to have the submission deadline at least twelve months prior to any event faces a similar situation as the previous action 03/13.
- Action 03/15 Calvo: The ICO Bureau 2004 is taking place at the V RIAO/VIII OPTILAS. The ICO President, R. Dändliker, officially expressed his gratitude to the organizers, in particular, A. Marcano, Chair, for the facilities provided. The ICO Bureau annual dinner will be offered by ICO and an invitation was extended to the local organizers of the V RIAO/VIII OPTILAS to join us.
- Action 03/16 Calvo: The situation for new associate members will be discussed in Point 9a) of the Agenda.
- Action 03/17 Chavel: The person responsible for ICSU liaisons, P. Chavel, did send a report to all ICO Bureau members before the Bureau meeting. Discussions on this report will take place in Point 9b) of the Agenda.
- Action 03/18 Calvo: At meeting of the TSOSA Advisory Group took place at the 2004 Winter College on Interferometry and Applications to Modern Physics, held at the ICTP, Trieste, Italy, in February 2004, a meeting of the TSOSA Advisory Group took place. P. Chavel, ICO representative was elected Chair for a period of one year.
- Action 03/19 Sincerbox, Calvo: This action will be discussed on point 9 of the Agenda. The conditions for the renewal of the ICO NL edition for the year 2005 were discussed. The actual distribution was revised through a questionnaire sent to all Territorial Committees (TC). From the data obtained it was observed that the actual procedure needed to be revised. This action is related to the corresponding Liaisons of ICO Bureau members. There is a concern about internal functioning of TCs. A specific proposal has to be checked and later to be sent to all ICO Bureau members. For example, there are local situations where TCs have a small number of members, and are therefore, not very representative. A proposal arose to make a general recommendation to all TC regarding this situation. Motion: To prepare a recommendation from ICO Bureau to be addressed to all TCs (Proposed G. C. Righini, second N. Gaggioli, unanimously adopted). (Action 04/5, Gaggioli, Righini).

The British Institute of Physics (IoP) has made a proposal for publishing the ICO NL for the year 2005. The offered conditions will be reflected in the forthcoming contract. The contract will be e-mailed to all ICO Bureau members by ICO Secretariat. The decision has to be taken not later than December 31, 2004.

Proposal: "The Bureau is requesting the ICO Secretariat to send the official contract issued by IoP to all ICO Bureau members, prior to deciding which institution will publish ICO NL in 2005. This contract has to be checked by all ICO Bureau members and a decision has to be taken by December 31, 2004". (Motion: G. Sincerbox, second M. Kujawinska, unanimously adopted). (Action 04/6, Calvo).

2.- President's report

2a) Report:

R. Dändliker, ICO President reported. He extended thanks for the support of the ICO Secretariat, in particular to María Calvo. As previously discussed, a new regime for the distribution of ICO NL was prepared. Also, a new regime for handling the applications for meetings and schools ICO support is introduced by the Associate Secretary. In general, the response from external and internal members and institutions has improved. Further actions for increasing the visibility of ICO, in particular from developing countries and TC members have to be considered. ICO President was invited to the meeting of the Spanish Optical Society (SEDO) held in Santander, Spain (September 2003). He presented information on ICO activities. ICO President had accepted to participate as a lecturer in a course on “Les lasers et leurs applications”, organized by the Moroccan Optical Society in Tangier in December 2003. However, he got stuck in Casablanca by bad weather conditions and his talk was given by M. Calvo instead. ICO President acted as co-director of the Winter College in Interferometry and Applications to Modern Physics, held at the ICTP, Trieste, in February 2004. In that school several ICO Bureau members participated by delivering various lectures. ICO/ICTP awards were presented and the Award Ceremony took place as well. For the year 2004 there was a positive coincidence for the two nominees from India and Pakistan, respectively. One of the awardees obtained later a Fellowship of six months to stay at ICTP, Trieste. The 2004 Optics in Computing (OiC) meeting was held in Engelberg, Switzerland. There were a total of 94 participants from 16 countries. There was an improvement of the attendance from the previous OiC meeting. At that occasion the ICO President met with members of the Steering Committee (SC) on the initiative from M. Yzuel, ICO representative. There was a general agreement that other IS should be involved in future activities, such as IEEE/LEOS. The SC has not been quite operational over the last years. The activities of the SC have to be reactivated and further contacts have to take place. ICO President was not able to attend the ICO Topical meeting 2004 “Frontiers in Optics” held in Tokyo (June 2004). Nevertheless, he was in contact with the organizers and did send an official welcome address which was read at the opening. At the occasion of that Topical Meeting an informal meeting was organized by some of the local organizers, some of them from the Japanese TC, and with members of the ICO Bureau attending the conference. In connection with the mentioned ICTP Winter College, M.T. Tavassoli, representative of the Iranian TC gave an official letter explaining the actual sanctions introduced by US, concerning US international societies, for which scientists from certain countries (as Iran) were not admitted for regular membership. To this concern assistance from ICO was requested. In particular, cancellation membership from LEOS and SPIE was perceived. Copies of this letter were sent to IS from the ICO Bureau as well as to IUPAP representative, Y. Petroff. To the present time, no satisfactory answers were received. Nevertheless, H. Arsenault, SPIE representative indicated that actions have been initiated by SPIE organization to improve the situation. There is an international agreement by ICSU that no discrimination of scientists by origin is. ICO President had some contacts with Peter Knight, current OSA President, who deplores also the current situation imposed by the US government. In particular, the restrictions for scientific publications must be relieved. J. Walker (SPIE staff) explained that this is a general situation faced in US professional societies. Currently, registrations are admitted, with no income from the sanctioned countries. It is noticed that the European offices accept registrations. There are joint actions with other US societies addressed to the US Government protesting for this situation. SPIE does not support these official policies. In the absence of the IEEE/LEOS representative no additional information for these society

issues is provided. As a partial solution, membership is accepted in some cases only for one year. These issues were discussed again in Point 12).

Proposal: “ICO, as member of IUPAP, has to offer support to local societies facing difficult situations. Information on the interaction of US Societies with ICSU has to be provided. The three US IS with representative in the ICO Bureau are requested to provide one report with data on the current situation”. (Proposed: G.V. Bally, second N. Gaggioli, adopted by majority), (Action 04/7, Arsenault, Sawchuk, Weiner).

2b) ICO Book

R. Dändliker reported. “International Trends in Optics – OPTICS WORLDWIDE” was chosen for the working title of the ICO-VI Book 2005 to emphasize the ICO vision statement: “ICO, the place where the world of optics meets”. For a good global coverage, contributions from all ICO Territorial Committees were sought through the contacts of the Bureau members with the TCs. However, the response was very disappointing: only eight proposals (from France, Germany, Israel, Korea, Spain, UK and US). As reported by SPIE, only 275 copies of ICO-V 2002 were sold, corresponding to US \$1,322 of royalty income for ICO (40 or more of those copies were free books to the authors and editor). SPIE finds also that general-survey books do usually not sell well. These results are not satisfactory for SPIE to face further similar editions. There is a need for reducing the cost, camera ready copies and decreasing royalties (10%). Also, soft cover and smaller number of chapters needed to be adopted. To reduce the expenditures no copies for authors should be offered. These current inputs imply that a decision is needed. Moreover, the contribution of the book to the ICO visibility is not clear. As a consequence, the ICO President came to the conclusion to renounce publishing the ICO-VI Book in 2005. This decision was accepted, although reluctantly, by the Bureau. An other action to increase the visibility of ICO is proposed instead (see point 4a).

However, ICO Bureau members are invited to edit the book in case of feasible actions. Notice, it is only several months prior to ICO-20, where the book should be exhibited. Probably, other publishers could make offers, but this action cannot be faced for obvious lack of time.

3.- Financial matters

G. Sincerbox, Treasurer, reported. He provided copies of an updated report dated October 1, 2004. Some items to note.

- There have been large expenditures for meetings support during this three-year period. An amount of US \$2,500 remains for meetings support that can be used through 2005.
- The royalties obtained from the ICO Book are applied to the Travelling Lecturer Program. Assistance to A. Guenther, ICO Past-President, to attend a meeting in Africa under the Travelling Lecturer program was recommended.
- The approved budget for possible website support has not been used
- Overall, there were good results for this year’s budget. It should be noted that the total cost of business operations for the Treasurer includes an amount of US \$1,538. This is the cost associated with sending and receiving money by wire transfer.
- The publication and mailing by OSA of the ICO NL has not been billed yet for 2004.
- Information on TC in arrears was presented and we were reminded that those TCs not

paying for the last six years are out of ICO according to rules. The Vice-Presidents in charge on the corresponding TC liaisons should contact them for resolving the current situation (Action 04/8, Vice-Presidents).

- It should be noted that some meetings organizers have not requested the ICO grants.
- To work with banks offering lower services fees may be advisable.

Proposal: “the Bureau accepts the presented ICO budget” (Motion: A. Guenther, second N. Gaggioli, motion unanimously approved).

4.- Committees reports, except prizes and awards

4e) Education Committee:

Sawchuk, Chair of the Committee, reported. There have been activities in 2004 in collaboration with OSA and SPIE for distributions of educational kits available in English, Spanish and French. The translation into other languages is a forthcoming issue. Volunteers are needed to establish collaboration, avoiding the duplication of activities, which involve money, government help, optics community, and in terms of industry. We need to search for places of reference. R. Dändliker asked for volunteers from ICO Bureau to participate in these activities. Same remarks arose concerning the possible work for the translation of the educational kits. The contents of the kit are previously required to afford a possible translation. G. Jin offers support for a possible work in Chinese. It turns out that this language is already available anyhow. A. Guenther commented that there are many issues in educational areas. In particular, for students who are aiming for a carrier in Optics and Photonics. Concerning carrier pathways we need to notice the following: students entering in high schools will travel later through the whole system while maintaining the focusing curricula. There is a proposal to US National Science Foundation (NSF) for financial assistance to secondary schools. Also, there is currently an Educational Network working in US. Optics subjects are having important attraction for young students and education under an experimental work scope. In Latin America there are an important number of teachers interested in educational area, performing their own kits for training. In connection with SPIE, N. Gaggioli informed that there are now some activities toward the organization of schools in Latin America and a concern for the availability of kits, provided by commercial companies, OSA Foundation and SPIE. A. Wagué added that in Africa the situation is not that optimal and there is no information available. Only within the LAM network some related work has already started, involving Ivory Coast, Senegal and other West-Coast African countries. ICO may collaborate with ICTP for having associated centers in Africa but resources are required. A. Sawchuk proposed that IS may cooperate with the ICO Education Committee, this one being the master coordinator. For this task a corresponding person at ICO Bureau to work for the Education Committee website maintenance and to improve the efficiency should be required. Also, ICO may collaborate with OSA to activate previous activities at OSA meetings. A. Guenther mentioned that the assessments are needed to ensure the effectiveness for the kits distribution, in particular for secondary schools teachers. SPIE has an annual program with a considerable budget (in collaboration with OSA), dedicated to this task. H. Arsenault suggested that more coordination between IS is required. All ICO Bureau members will work to provide feedbacks, including about the translation issue. This work will be coordinated by A. Sawchuk. (Action 04/9, Sawchuk).

Proposal: “All ICO Bureau members should work in close collaboration with the ICO Education Committee”. (Motion: G.C. Righini, second N. Gaggioli, motion unanimously

approved).

Information was provided on the forthcoming ETOP meeting, to be held in October 2005 in Marseille, France. The event is considered as a major conference for ICO. The last conference was held in Tucson, AZ, USA, in conjunction with the OSA Annual Meeting, October 2003, with great success and great acceptance from all the attendees. It is a major goal for ICO to support activities in developing countries as a joint event with IS. As for the number of participants it can vary from the order of 70 up to 150, in overall. Statistics started from previous ETOP meetings, as from the one organized in 1997. For ETOP 2005 negotiations between the local organizers and SPIE take place. There is a Memorandum of Understanding (MOU), specifying the responsibilities of local organizers, including financial duties as well. H. Arsenault informed that SPIE has sent a MOU to all the societies involved, but not all responded on due time.

SPIE representative Arsenault stated that SPIE had requested that he bring up to the Bureau three issues regarding the ETOP series of meetings :

- 1) The MOU issue and proposals to change the MOU.
- 2) The mechanism for deciding where ETOP meetings will be held and the focus of the meetings (industrial or developing nations, etc).
- 3) The considerable loss of money on SPIE's part for those meetings.

ICO President Dändliker ruled that since the future Marseille meeting would not face economical losses, past performance was not an issue and therefore, considered that these items do not need further discussions. Arsenault stated that he would therefore take the Long-range planning committee's reply (where the issues was discussed a few days before) as the official ICO response, to the effect that if SPIE did not want to lose money on meetings, it should manage the meetings in such a way as not to lose money.

As a main action, the local organizers have to analyze the financial viability of the conference, based on the facts from previous meetings. J. Walker offers her help to provide details and to look for a more practical issue avoiding losses. The Education Committee has to give inputs to improve all these issues.

Historically, the MOU was decided at the ETOP meeting held in Delft, The Netherlands, in 2000, as an action from P. Chavel. Generally speaking, ETOP is too large a meeting series to be handled solely by ICO. A.T. Friberg informed that for ETOP 2005 three proposals were received and no specific assistance from SPIE was requested in these proposals. The grants for supporting assistance of young researchers and colleagues from developing countries have to be considered as well on due time. J. Walker added that SPIE would require a report on ETOP 2003 from the OSA. OSA representative A. Sawchuk said that he would find out what was causing the delay. Obviously, ETOP is an important meeting and organization cannot be solely carried out on the basis of benefits. ETOP 2005 will be organized as well within a European Network for Optics and Photonics, financed by the EU, and it is not expected to have a deficit.

4a) Long Range Planning Committee

R. Dändliker, Chair of the Committee, reported. There was a previous LRPC meeting held in Porlamar on October 7, 2004. The proposals issued are presented to ICO Bureau:

- 1) Discussion on the future of the Standards Committee.
- 2) The preparation for the next elections for the ICO Bureau.
- 3) The necessary considerations regarding the election of Vice-Presidents from industry.
- 4) The ICO initiative to strengthen the presence of optics in WYP2005 on the occasion of the

World Year of Physics 2005 (WYP2005) and to strengthen the presence of optics in WYP2005. This can be a great opportunity for ICO to enhance visibility. An official letter from ICO President is to be addressed to TCs and ISs. Suggestions will include the systematic announcement of national and local optics activities as being a part of WYP2005. A special ICO logo is to be created for that year, to be inserted in all documents and on the ICO website. Special instructions for the use of the ICO logo will be prepared. (Action 04/10, Dändliker).

The activities for the WYP2005 started as collaboration between EPS and UNESCO. G. Von Bally informed that the WYP2005 official logo can be downloaded freely from the official website. The German Physical Society (GPS) has cancelled all separate conferences by unifying in to a single meeting in 2005 with the support of the German government. Additionally, a UNESCO meeting in South Africa will take place.

M. Kujawinska noted the need of an updated ICO logo for the forthcoming ICO meetings. The logo will be provided by A.T. Friberg to all organizers of conferences with ICO participation in 2005. (Motion: G. Von Bally, second M. Kujawinska, unanimously approved). (Action 04/11, Friberg).

5) There is a proposal from A. Guenther to create a Council of Past-Presidents, with a maximum of five Past-Presidents (in chronological order). They would meet in connection with the ICO General Assembly (a financial assistance with US \$1,000/person = US \$5,000 maximum could be accorded) every three years. ICO Bureau members may contact A. Guenther and give suggestions for the duties of this Committee, to be approved in the next General Assembly (ICO-20). (Motion: A. Guenther, second G. Sincerbox, approved by majority). (Action 04/12, Guenther).

4b) Nominating Committee

A. Guenther, Chair of the Committee, reported. The elections for the ICO Bureau (period 2005-2008) will take place in the next General Assembly to be held in Changchun, China, in August 2005. Nominations are required and the whole ICO Bureau has the responsibility for the success of these elections. The following positions are open: President, Secretary, Associate Secretary, Treasurer, and eight Elected Vice-Presidents. In particular, the ICO Bureau will lose three current Vice-Presidents who are running the second term, among them one from industry. Five current Vice-Presidents are eligible for a second term. G. Sincerbox, Treasurer, has expressed his wishes to retire from this position. It is important to collect information. The first round of nomination has to be concluded by December 31, 2004. The Nomination Committee is formed by A. Guenther (Chair), T. Asakura, C. Velzel, and M. Yzuel. They will assure the circulation of information (Action 04/13, Guenther) and a second run will conclude on July 1, 2005. Late nominations will be accepted up until August 24h before the vote.

So far the Committee has received three letters from TCs. The ICO Bureau members, being also representatives of TCs, have the responsibility to endorse nominees. The procedure is explained in the "Green Book", available on the ICO website.

4c) Committee for the Regional Development of Optics (CREDO)

G.C. Righini, Chair of the Committee, reported. There are overlapping activities of CREDO with the Education Committee (EC). The efforts initiated toward the establishment of a digital library were not successful. Legal problems appeared in relation with property held by ISs.

Unluckily, the countries requiring more assistance cannot have a secured free access to internet. It is possible to collect the material which is not protected by copyright (for example, ppt files). An agreement with the Education Committee is suggested to have common links on the website. The CREDO and EC have to converge in common points while maintaining own definitions. There was a former proposed initiative: Collection of information on activities on optics carried out by TCs, that was achieved. The Committee received a 40% of TC members replies. There are still pending problems in contacts with some TCs, such as Indonesia and Iran. N. Gaggioli added up-to-date information on activities in optics in Latin-America (the report was presented at V RIAO/VIII OPTILAS). There is also a proposal for ICO meetings as to encourage production of CDs to be distributed in place of the usually edited proceedings; this could be the situation for the forthcoming ICO-20. G. Von Bally informed on the informal Bureau meeting that took place in June 2004 in Tokyo, at the occasion of the ICO Topical meeting “Frontiers in Optics”. He also reported on the current situation that exists in Uzbekistan where due to political problems scientists are facing a difficult situation. It is important that ICO recommend actions in the case of ethical problems.

Proposal: “To develop rules of practice to be distributed and publicized. This action will be developed in common with the Galileo Galilei Award Committee and it is applicable to optical scientists”. (Motion: G. Von Bally, second N. Gaggioli, unanimously approved). (Action 04/14, Von Bally, Gaggioli).

Wagué indicated that special training programs in Africa should be proposed. Also, activities such as equipments donation have to be coordinate by CREDO. To ensure feasibility the problems of customs have to be solved as well. R. Dändliker commented that the offer has to be launched again. A. Wagué added that the ICO contacts could be used to find a solution. A. Sawchuk mentioned that IS Foundations can be of some help and it will be proposed in next OSA Foundation meeting. Notice that this matter was already discussed in 2003. M. Kujawinska pointed out that ISs are organizing many courses every year and we can use these activities to train with specific equipments. Other comments in support of the proposal were made by Y. Kim.

Proposal: “CREDO will take act towards the development of the program for donation of equipments. The procedure will be mailed within the next three months” (not later than January 2005). An example is the training course on laser spectroscopy organized by LAM. (Motion: G.C. Righini, second A. Wagué, unanimously approved). (Action 04/15, Righini, Wagué).

4d) Travelling Lecturer Committee

G. Sincerbox, Chair of the Committee reports. The annual budget of US \$5,000 was fully expended. There have been five lecturers from Taiwan, USA, Japan, and Russia, travelling to various countries all over the world. For the moment the budget appears to be adequate for affording future programs. There is a proposal to grant A. Guenther’s forthcoming travel to Cameroon to visit various centers. (Motion: G. Sincerbox, second M.L. Calvo, approved by majority). The electronic files for travel applications should be linked to the ICO website.

4f) Standards Committee (SC)

In the absence of L. Wang, Chair of the Committee, I. Yamaguchi reports. At the occasion of the ICO Topical Meeting 2004 held in Tokyo an informal Bureau meeting took place. Discussions arose in relation with the current contents of this committee. L. Wang was

contacting various committees for the development of standards in optics. It is difficult to arrive to specific proposals or concrete actions. Standards are nowadays a complicate field and ICO needs to discuss the current activities. The conclusion is that SC is having little influence in the world of standards and its future has to be revised. This subject was also discussed at the Long Range Planning Committee.

Proposal: "To prepare a report prior to the General Meeting 2005, to explain the future of the committee including the possibility of dissolving it". (Motion, A. Friesem, second I. Yamaguchi, unanimously approved). (Action 04/16, Wang, Kim, Yamaguchi).

5.- Reports of liaisons with Territorial Committees and International Societies

5c) OiC Steering Committee

M.J. Yzuel, ICO representative in the OiC Steering Committee, reports. R. Dändliker received a letter from SPIE (a copy is provided with Bureau meeting documents). M.J. Yzuel provided copies of the OiC Steering Committee report and copies of the Bylaws to all attendees. In 2004, an EOS Topical Meeting was held in Engelberg, Switzerland, and the report by the Chair J. Jahns, is also provided. M.J. Yzuel participated in the Scientific Committee. At the occasion of this topical meeting a meeting of the OiC Steering Committee was organized. In it, various aspects on the current status were reviewed: there is a proposal to change the name of the series to Information Photonics. Also, since there is a substantial change in contents, the Bylaws should be changed. In general, among the members of the organizing committee of OiC meeting series, members of the Steering Committee may participate as well. The main problem arising is that ISs are not totally aware of the existence of the Bylaws. At present, the representative of OSA, D. Psaltis, is the Chair but his term is over. So, another person needs to be nominated. EOS has no nominated representative. Earlier, the representative was K. Chalasinska, but her term is over. In 2005 an OSA Topical Meeting on Information Photonics will be organized and the Chairs are already designated. There is a need for receiving inputs for 2006. Australian colleagues have presented a proposal.

To the present state, further discussions are required for the redefinition of the Steering Committee duties and activities. A. Sawchuk mentioned that the current name OiC is becoming obsolete. Contents have to be focused inside a more interdisciplinary field. OSA has been historically involved in this series of meetings. Now there are new very relevant subjects so that a change in the name was needed. Moreover, OSA was loosing money on the organization of these series of meetings. To avoid these facts, surveillance for future results will be required. Sometimes also the organizers are not taking into account the main agreements. IEEE/LEOS is demonstrating an interest to participate in the Steering Committee as a new member and therefore, this committee has to be renewed. R. Dändliker added that these matters were also considered in the meeting that took place in Engelberg. New Bylaws need to be established, may be simplifying contents. EOS, ICO, IEEE/LEOS and OSA are having an interest in renewing the procedure. SPIE is invited to consider its participation. There is already a contact with D.A.B. Miller for the LEOS participation. Another possible nominee could be S. Esener. A main concern is that these meetings are not securing positive gains. H. Arsenault pointed out that historically the subject focused on optical information processing and digital information processing had little contents. At the present time, SPIE has decided to withdraw from the Steering Committee. SPIE representative H. Arsenault made it clear that SPIE is not interested in modifying the old MOU, but is open to suggestion for a new agreement regarding the new

meeting contents. New contacts have to be done through SPIE staff (E. Arthurs) and A. Sawchuk will take care on this action. (Action 04/17, Sawchuk).

Overall, the meeting held in Engelberg was a successful one from both the scientific and the economical point of view. However, J. Walker mentioned that the organizers have not yet sent (the series managing society) the final balance to SPIE. There is no information from Nowitzki (EOS staff).

Proposal: The new SC representatives will be: M.J. Yzuel (ICO), A. Sawchuk (OSA) or S. Esener (OSA) (to be decided by OSA), J. Jahns (to be decided by EOS). (Motion: A. Sawchuk, second G.C. Righini, approved by majority with two abstentions).

5c) African Laser Center

Guenther, ICO Past-President in charge of African Laser Center (ALC) liaisons, reports. ICO is involved in African initiatives for optics promotion. The main question is: What role to play? As a resume of activities, a meeting was held in Tunisia in 2002 within the LAM Network. There is now a development of several centers throughout Africa for Laser Schools and training. Furthermore, P. Chavel visited the ALC to maintain contacts, but no complementary information is available. There have been as well contacts with the Director of NLC (Philemon). As a main idea: LAM and ALC should do complementary work. The last meeting was held in Johannesburg in parallel with the meeting for African Development. There is an agreement to write a document for rules and codes. The meeting scheduled earlier for January 2004 was postponed up to July 2004, and discussion on the constitutions and exchange programs in various African countries are in progress. LAM Network is now coordinating many African laboratories and these links can be used as well to reactivate the ALC. Nevertheless, the decisions are difficult to materialize. An additional meeting is planned in ICTP in Trieste at the occasion of the forthcoming Winter College 2005. As expected issues, the possibilities for the training of African students, are not yet materialized. P. Chavel was also prosecuting actions with few responses. The next LAM meeting will be held in Cameroon, December 6-10, 2004. ICO may try to activate the connections and has A. Guenther as representative. There will be a joint meeting in Cameroon and it will look for common actions. In general, the incomes must be used for training programs, but currently there are no concrete actions. A. Guenther could be able to travel to South Africa if financial assistance is available for this travel to be accomplished. Several sources of funds are now under application. ICTP is interested as well in seeing concrete actions. Globally, there is a positive evolution. The Cameroon meeting will be an opportunity for discussing on how to increase funding.

Proposal: "to study the cooperation with Latin-America. A meeting at ICTP, Trieste will take place with the presence of Latin-American scientists". (Action 04/18, Gaggioli).

5a) Territorial Committees (TC)

ICO Bureau members, in charge of TC Liaisons, reported. R. Dändliker suggests to focus on aspects of special interest. A. Friesem reported. He contacted Israel and Romania TC, and was asking for responses for ICO/ICTP Prize. He was having problems for contacts with Denmark, Czech Republic and Norway. Similar problems appeared with other TC contacts: Hungary (I. Yamaguchi), . G.C. Righini (Indonesia) and M. Kujawinska (Estonia) had problems as well to contact representatives. The USAC/ICO Committee was also providing working links with Turkey and Russia. With Singapore there are no contacts. Identification of the Singapore

contact was done and reestablished as an action from ICO Secretariat. Finland TC is working, Sweden is constituting a new TC (expected to be ready for next ICO Congress in 2005). Contacts with Australia TC are working. R. Dändliker informed that the Ireland contacts are not operative. With Estonia there are currently not so fluent contacts. Ukraine TC is very active. West/Africa TC also is doing good work. There is a need for enhancing the representations in African countries. To this concern there are potential new contacts with Cameroon. Regarding India, the representative was attending the ICO Topical Meeting 2004 in Tokyo and I. Yamaguchi contacted this representative. N. Gaggioli informed that Brazil is on arrears, as well as Columbia. With Mexico the contacts are operative as well as with Spain and Venezuela. There are contacts with Peruvian colleagues and a possible application could come next year. There have been contacts with Portuguese colleagues, but no specific new information is available at the present time. There is an intention for reassuming ICO membership but there are problems to organize the TC. For Chile the situation has to be clarified. Uruguay is not interested in ICO membership. R. Dändliker informed on other geographical areas: Indonesia presents problems for contacting, as well as with Iran. G.C. Righini informed that the Italy TC is suffering from cutting of funding.

5b) International Societies

In the absence of A.M. Weiner, IEEE/LEOS representative, Y. Kim reported. He will attend the next Bureau meeting of this IS and will inform on due time on the issues regarding joint activities. M. Kujawinska remarked that we have to consider the importance of the links of IS with ICO. Joint activities in a near future are expected for ICO and the ISs represented on the ICO Bureau.

6.- ICO Awards

6a) ICO Prize Committee

A. Friesem, Chair of the Committee, reports. The information on the nominees for the year 2004 has been sent to all ICO Bureau members. This report is included in the collection of documents of the annual Bureau meeting. This year the committee reviewed six candidates: four new nominees and two considered from last year nominations, all very good ones. The final proposition of the Committee is to award the ICO Prize 2004 to Ashok Venkataraman Krishnamoorthy, Sun Microsystems, USA. This is approved by the Bureau. (Motion: A. Friesem, second G.F. Jin, unanimously approved).

6b) ICO/ICTP Award Committee

A. Friesem, Chair of the Committee, reports. There is an accompanying report available with the documents of the annual Bureau meeting. The winners this year, Imrana Ashraf Zahid (Pakistan) and Revati Kulkarni (India), were selected among the participants in the 2005 ICTP Winter College. Both have promoted optics in their respective countries and tutored at previous ICTP schools. The committee's recommendation was approved by the ICO Bureau, and the Award was presented to the candidates at the 2004 ICTP Winter School by R. Dändliker and M.L. Calvo. The advertisement has to be increased with the editing of a poster in collaboration with ICTP. These advertisements have to be inserted at the occasion of the Winter College. The

proposals are usually made by e-mail prior to the Winter College (by December of the precedent year).

6c) Galileo Galilei Award Committee

G. Von Bally, Chair of the Committee, reports. This year seven nominations were received. The Committee proposes: C. Saloma (Philippines) and M. Belic (Serbia and Montenegro), ex-aequo. Both candidates have a high level of merits as compared to the other remaining candidates. C. Saloma, University of Philippines, has done experimental work on microscopy, signal processing, and neural networks in complex systems. He has an international reputation and has promoted research and education in optics in Philippines. M. Belic, Department of Physics, University of Belgrade (Serbia and Montenegro) is a leading figure in the former Yugoslavia in the field of non-linear optics and optical solitons with important contributions (600 citations). He is currently a professor in Qatar. The cash of prize has to be shared this year by the two nominees.

Proposal: “to increase the assistance for the two candidates to attend the ICO meetings”. (Motion: G. Von Bally, second A. Guenther, unanimously approved).

Proposal: “Two medals have to be provided”. (Motion: G. Von Bally, second G. Sincerbox, unanimously approved).

Proposal: “ICO/ICTP and Galileo Galilei Awards Committees are both addressed to developing countries. It is necessary to put them a more normal basis. “The Chairs of ICO/ICTP Prize and Galileo Galilei Award Committees are encouraged to work in cooperation for sharing common information on possible nominees”. (Motion: G. Von Bally, second A. Guenther, unanimously approved). The resolutions will be edited into the “Green Book” Toward ICO-20. (Action 04/19, Friesem, Von Bally)

In sum, the call for 2004 was a successful one

7.- ICO participation in meetings and schools

A.T. Friberg, Associate Secretary in charge of ICO participation in meetings and schools, reports. He provided a detailed accompanying review and summary. It is worth noting that our host event V RIAO/VIII OPTILAS is the first ICO Regional Meeting ever organized.

7a) Events taken place in 2003-2004

Thirteen events have taken place with ICO involvement since the previous Bureau meeting, and they were briefly presented. These events are: Polarization Optics, July 2003, Joensuu, Finland (Topical); TecnoLaser 2003, July 2003, Havana, Cuba (Endorsed); RomOpto 2003, September 2003, Constanta, Romania (Endorsed); ETOP 2003, October 2003, Tucson, AZ, USA (Cosponsored, topical); International Workshop on Adaptive Optics for Industry and Medicine (4. IWAOIM), October 2003, Muenster, Germany (Endorsed); Optics 2003, October 2003, Saint Petersburg, Russia (Endorsed); International Conference on Laser Applications and Optical Metrology (ICLAOM'03), December 2003, New Delhi, India (Endorsed); ICTP Winter College on Optics, February 2004, Trieste, Italy (School); Optics in Computing (OiC 2004), April 2004, Engelberg, Switzerland (Cosponsored); ICO'04, July 2007, Tokyo, Japan (Topical); Optics, Life and Heritage, Havana, Cuba (Endorsed); V RIAO / VIII OPTILAS, October 2004, Porlamar, Venezuela (Regional).

A total of US \$15,500 had been awarded for these events in grants, though no loans and no

risks in the financial outcome. For the most important meetings brief summaries have been published in the ICO Newsletter (and posted on the ICO website). For most events reports have been received from the organizers and/or Bureau representatives. The adaptive optics workshop 4. IWAOIM was moved from Beijing to Muenster. The Optics, Life and Heritage event was a satellite of the RIAO/OPTILAS conference. The two Topical Meetings and the Regional Meeting were also endorsed by IUPAP.

7b) Events already decided

ICO participation in seven future conferences had already been decided. These events are: Basic Problems in Optics (BPO'04, Topical meeting on Optoinformatics), October 2004, Saint Petersburg, Russia (Endorsed); OWLS8 (Biophotonics Down Under), November 2004, Melbourne, Australia (Cosponsored); 7. International LAM Workshop on Physics and Modern Applications of Lasers, December 2004, Douala, Cameroon (Cosponsored); 8. International Symposium on Laser Metrology (LM-2005), February 2005, Merida, Yucatan, Mexico (Endorsed); 10. Congress of International Colour Association (AIC Colour 05), May 2005, Grenada, Spain (Cosponsored); ICO-20 Triennial Congress (Challenging Optics in Science and Technology), August 2005, Changchun, China (General Meeting); 9. International Conference on Education and Training in Optics and Photonics (ETOP 2005), October 2005, Marseille, France (Cosponsored, topical).

For these conferences a total of US \$15,000 has been awarded in grants, plus a US \$7,000 loan and US \$10,000 financial risk in ICO-20. An adaptive optics workshop (5. IWAOIM) is planned as a satellite event to ICO-20. Following ICO practices, IUPAP endorsement has been applied for the Triennial Congress ICO-20.¹

7c) Future meetings and schools

Several new applications for ICO participation in meetings and schools have been received a total of eight including ICTP 2005 and a last-minute new bid for ICO-21 from Mexico. The Bureau decided to deal with all the applications, except ICO-21 in 2008, in one block for a better coordination. The case of ICO-21 was then handled separately afterwards.

The ICO Bureau has already in 2001 taken a decision to support the ICTP Winter Colleges on Optics and Photonics by US \$1,500 annually, and A.T. Friberg has served as the Bureau liaison. The ICTP Winter Colleges are now being coordinated among the general TSOSA activities, and P. Chavel has been elected as Chair of the TSOSA Advisory Committee for one year. It was nonetheless felt useful to appoint a separate ICO representative (liaison) to the ICTP Winter College alone, and A. Wagué is proposed for the Winter College 2005, which deals with Nanoscience and Nanotechnology and takes place in February 2005 in Trieste, Italy. Though the 9. International Conference of Squeezed States and Uncertainty Relations (ICSSUR'05) represents a somewhat new area for ICO, the Bureau however considered it important, within ICO's charter, and well worth supporting. An "endorsed" status and a grant of US \$1,250, with R. Dändliker as Bureau representative, was proposed for ICSSUR'05, which takes place in May 2005 in Besançon, France. The next application was for the 17. International Conference on Optical Fibre Sensors (OFS-17), scheduled for May 2005 in Bruges, Belgium.

¹ At the time of writing these minutes, IUPAP endorsement for ICO-20 has been approved.

ICO Bureau member Y. Kim is on the Steering Committee of this meeting series. Despite lengthy dialogues between OFS-17 organizers and ICO, the conference registration fees – including social events such as a gala dinner - were kept very high (early registration for members €625, normal registration and non-members €725, students €295). These are in strong contrast with ICSU and IUPAP regulations, which limit the registration fees – including the proceedings – to €410 in meetings organized in 2005. The social events should be separated from the meeting's technical part and be paid only by those who wish to participate in them. The Bureau's opinion was that the high conference registration fees, which do not comply with the ICSU and IUPAP rules, are a deterrent to a global advancement of optics and especially harmful to scientists representing developing nations with limited financial resources. For these reasons it was proposed to turn down the OFS-17 application of ICO participation. The Optics in Computing (Information Photonics) meeting series was earlier discussed in connection with point 5c) of the agenda. ICO has had a long and strong involvement with this series (especially in the even-numbered years) and it continues to support it and its revival under the title. It was proposed to grant the Information Photonics 2005 conference, which takes place in June 2005 in Charlotte, NC, USA, the status of an “endorsed” event with no financial participation (in accordance with the application and previous ICO practices). A. Sawchuk and M.J. Yzuel, who also serves as ICO's representative in the joint Steering Committee of the whole Information Photonics series, were proposed as ICO representatives to IP 2005. The last application in this group concerned the 7. International Conference on Correlation Optics, which is scheduled for September 2005 in Chernivtsi, Ukraine. ICO has supported these meetings before and the Bureau was happy with the recent reports of the series becoming scientifically more topical, diverse, and international. The meeting organization is now perceived as very good. SPIE is supporting the meeting, for example publishing the proceedings. The Bureau felt that the Correlation Optics meeting series serves the surrounding areas (former USSR states) well e.g. by keeping the registration fee low (US \$250). The status of “endorsed” event with a grant of US \$1,250 was proposed, and M. Kujawska was proposed as ICO representative. The proposals in this block of five meetings were unanimously approved by the Bureau (Motion: G. Sincerbox, second S. Sawchuk). (Action 04/20, Friberg)

In the discussion it was pointed out that conference fees even now often are too high to be afforded by scientists from developing regions (N. Gaggioli). This fact should be addressed by ICO. If the fee does not include proper proceedings, the cost must be even lower. Many countries are nowadays having such problems but they can be handled, especially by trying at least to let the students participate inexpensively (M. Kujawska). Colleagues in this situation are operating with a positive attitude. The important aspect is to progress in our common efforts. It is difficult to achieve a world-wide network of assistance for attendees coming from developing countries. As a new measure it was suggested that high-quality lecturers and speakers from developing areas can be proposed (by meeting organizers and others), towards an increase in the applied ICO grant.

For the ICO-21 Congress in 2008 two applications had been received from Australia and Mexico, respectively. We need to discuss and decide how to proceed. In relation to Mexico, previous contacts were initiated with various Latin-American countries without success. Mexico had earlier submitted bids in 1993 and 1996. They were encouraged to prepare proposals for future ICO General Assemblies. However, their present ICO-21 proposal was received by ICO well past the deadline – only one day before the Bureau meeting on location in Porlamar. Australia, on the other hand, which also had earlier been encouraged to submit a bid e.g. for the 2005 Congress, sent in their proposal in good time. Moreover, Australia's proposal is

comprehensive and of very high quality. The final decision, on the Bureau's recommendation, will be taken by the General Assembly in the next ICO-20 Congress in Changchun, China in August 2005. Some discussions arise as regards the decision of the place of ICO-21. Comments are related to previous meetings in Mexico, where e.g. the ETOP 99 in Cancun was not financially optimally managed (A. Guenther). On the other hand, V RIAO/VIII OPTILAS 2004 has been a great success, and this is an important fact to be addressed to the Latin-American optics community. Mexico's bid was presented in the last minute after the deadline, and this has to be considered by the ICO Bureau (Y. Kim). It is proposed that the Bureau is not in a position of accepting the post-deadline application for an event that is of such a great importance to ICO and to the optics community as a whole. (Motion: A. Sawchuk, second A. Guenther, approved by majority with two abstentions). The Bureau is nevertheless encouraging the Latin-American optics community to present bids for ICO-22 in 2011. The ICO-21 Congress is tentatively planned for 6-10 July 2008 in Sydney. Our colleagues from Australia will be invited to make an updated presentation to the Bureau and the General Assembly at ICO-20. (Action 04/21, Friberg)

7d) Other considerations

Plans for ICO Topical (or Regional) Meetings in 2006 and 2007 will have to be established.

M.L. Calvo informs that there is a possibility of an application for a 2006 Topical Meeting from Saint Petersburg (Russia). Also, another possibility is the 2006 OWLS meeting; it will to be discussed in Melbourne (Australia) at the OWLS General Assembly. There will be a combined major conference in the former Soviet Union states area in 2007, which could be developed into an ICO Regional Meeting (M. Kujawinska). While these ideas are pursued further, all Bureau members are encouraged to find additional suitable venues and hosts for these important optics conferences (which would host the annual Bureau meetings).

On a more technical front, the decisions taken by the ICO Bureau in Florence 2002 and in Joensuu 2003 regarding the visa guarantees and bi-annual application deadlines are being implemented. These decisions require the reformulation of the ICO meeting questionnaires, placing downloadable forms onto the ICO website, informing potential meeting organizers and ICO Territories e.g. in the ICO Newsletter and home page, and finally revising the ICO Rules and Codes of Practice. The work is in progress and will hopefully be completed by the ICO-20 Congress in 2005 in China.

8.- Next Bureau meeting: ICO-20

8a) Next Bureau Meeting

This is an ICO Bureau decision. Important dates: 21-26 August 2005, General Assembly has to be scheduled inside this period. The first Bureau meeting needs to take place prior to the General Assembly (One day: Sunday 21 August). The second Bureau meeting needs to take place after the end of the General Assembly (One day: Saturday, 27 August). The General Assembly has to be fixed during the conference. Facilities have to be confirmed with the organizers. (Action 04/22, Friberg, Calvo)

8b) State of preparation of ICO-20

J. Cao, representative of the Organizing Committee of the next ICO-20, reports on the

current status of the organization of the 2005 General Meeting, “Challenging Optics in Science and Technology”. The schedule is running on due time. Contacts with the International Advisory Committee are also fluent. All information has been provided to ICO Secretariat. The contents on eleven parallel sessions are under current developments. The web site is up-to-date. The presentation on the current organization status was also made in Tokyo’04, July 2004 (Japan). Keynote speakers have been contacted as well as other relevant scientists in the area of optics and photonics. The local government is offering local support as well. Conference rooms are being rented at the major conference hall in Chanchung. Facilities for the ICO Bureau meetings will be provided. A high number of students are also expected. The parallel sessions will take place in various rooms, with participants the order of 50-100/session. The business center will be available. Social events are being organized including various visits and tours to interesting places near Changchun. Still some major aspects are pending: Editing and publishing the printed proceedings, registration fees, and the plenary conference. The registration fees for students should be fixed at half of the prize: US \$200 /student. Supports from Chinese institutions have been received. Students will receive copies of the proceedings. Special support is needed for participants coming from developing countries. Negotiations are underway between the organizers and SPIE for the cost of the editing of the proceedings. For the present state only the cost of US \$5/exemplar is affordable. Conditions for transportations have to be clarified. There are direct flights from Japan and Korea (information posted on the website). Local facilities will be offered for the attendees. Exhibition is also under preparation. Possible visits to Chinese universities and research centers could be organized, if participants are showing an interest and would be done after contacting the organizers. The Advisory Committee needs to solve the plenary conference event. International promotion is also required under the usual procedures.

9.- Membership

9a) ICO membership

M. L. Calvo, ICO Secretary, reports. The current status of Associate Members Morocco, Tunisia, and Greece has not changed. These Associate Members are still waiting to send to ICO Secretariat the official letter from local institutions. The contact with Moldova is now fluid. A letter has been received indicating the difficulties for affording the annual dues. This is a clear case of Associate Membership and information from this ICO Bureau will be provided to Moldova representative.² The contacts with South-Africa have been lost. There have been some other contacts with Ecuador and Costa Rica. These countries are currently facing economical difficulties, but there is an emerging optics community with an interest to participate in ICO activities. The contacts will be pursued, as well as with other countries in various geographical areas of Latin-America. There is a contact also with the Secretary General of CYTED (Ciencia y Tecnología para el Desarrollo: Science and Technology for Development) through which it would be possible to organize a thematic Latin-American Network for optics involving research and industry.

9b) ICSU membership

² At the time of writing these minutes, Moldova has become an Associate Member.

In the absence of P. Chavel, ICO Senior Adviser in charge of ICSU affairs, R. Dändliker reports. The ICO Bureau has received the documents prepared by P. Chavel to be presented to ICSU, for consideration of optics as a discipline independent from physics. The Bureau is congratulating P. Chavel for the remarkable work done.

Proposal: “The proposition will be sent according to the final presented documents”. (Motion: A. Guenther, second M. Kujawinska, approved unanimously). (Action 04/23, Dändliker)

It is also advisable to have previous contacts with ICSU representatives prior to the sending of the official letter. Another additional action could be to request a letter of support from ICSU members. It is very likely that ICSU will require IUPAP inputs in relation with the ICO application. If ICO will become an ICSU member, it would represent additional work for the ICO Bureau, therefore, the annual budget should be revised.

(In an e-mail sent on 7 October 2004, but only received after the Bureau meeting. Y. Petroff writes concerning ICSU membership: “The document is good because it shows all the exciting developments in the field. However, you do not insist enough on the fact that optics play an important role not only in physics but also in biology, chemistry... That will be the main argument for ICSU. Finally, I was neutral during the discussion but I will try to help you at ICSU”.)

9b) IUPAP links

In the absence of Y. Petroff, the IUPAP Representative, A. Wagué, representative at C13 (Physics for Development), A.T. Friberg, representative at C15 (Atomic, Molecular, and Optical Physics), and G.C. Righini, representative at C17 (Quantum Electronics), reported. G.C. Righini attended the 2003 IUPAP Council Chairs meeting in Vancouver, Canada, and a report of this meeting was provided along with the annual Bureau documents. The next IUPAP meeting will be held in November 2004 in India, at present there is no confirmation for the participation of an ICO representative. As for the C17 commission, the ICO representative attended a meeting in Brazil.

10.- ICTP relations and current plans for joint events

10a) Trieste System for Optical Sciences and Applications Advisory Group (TSOSA)

In the absence of P. Chavel, the ICO representative and Chair of the TSOSA Advisory Group, M.L. Calvo, ICO Secretary, reports. The approval of the last version of the Terms of Reference is still pending. Since there were only minor, not too relevant corrections with respect to the previous version already approved in 2003 annual Bureau meeting, it is considered that the final version is approved, not needing additional votes.

(Motion: A. Sawchuk, second G.V. Bally, unanimously approved).

10b) Winter College 2005

M.L. Calvo, ICO Secretary, reports. The organization of the forthcoming Winter College on Optics 2005 is in progress. G. Denardo is coordinating the related activities of this college under the title: Optics and Photonics in Nanosciences and Nanotechnology. Further information will

be available on the ICTP website under the usual procedure. A. Wagué informs that a preparatory school will be held in Senegal. The mentoring program proposed by the TSOSA Advisory Group needs to be developed as a joint action from EOS, ICO, OSA, OWLS, and SPIE.

11.- Administrative business

M.L. Calvo, ICO Secretary, reports on the next sections of this point.

11a) ICO web site

ICO thanks SPIE for the very valuable assistance and support in the maintenance of the website. The information updating is being reasonably done. Nevertheless, still electronic facilities for the Travelling Lecture Program application need to be installed.

11b) ICO permanent site

The solution concerning the permanent archives site, is at present to maintain the location of the archives at the local place of the Secretariat. The ICO website is now linked to SPIE. Another possibility would be to have a registered domain. The legal address of the ICO is the Institute of Optics, Paris, France.

11c) ICO Newsletter

There has been a bid from the IoP for publishing the ICO NL for the year 2005. The conditions of this bid are included on the documents of the annual Bureau meeting. ICO Secretariat is making the necessary arrangements for the procedure to be of interest to ICO. G. Sincerbox comments that OSA, which currently is publishing the NL, has not billed ICO for the last two years, and this question has to be clarified.

11d) Green Book "Towards ICO-20"

All Bureau members are requested to contribute to the ICO Green Book "Towards ICO-20", which will be mailed to the Territorial Committees well in advance of the General Meeting (by June 2005). The deadline for the Bureau contributions will be February 28, 2005. Copies of the last Green Book will be sent to the Bureau members and suggestions to improve it will be expected from the Bureau members. It has to be noticed that the budget appearing in the Green Book has to be approved previously by ICO Bureau. This procedure will be done by electronic mail by January 2005. (Action 04/24, Calvo, Sincerbox)

12.- Other business

12a) Current business on ethical issues

H. Arsenault, in charge of this point, comments that there is no specific information at the

present time. He collecting related documents and will report by e-mail. (Action 04/25, Arsenault).

12b) Other business of relevance: No relevant matters in this point.



The ICO Bureau during a brake at the Bureau Meeting in Porlamar (Isla Margarita, Venezuela) held at the occasion of the VRIAO/VIII OPTILAS Meeting. Seated from left to right: N. Gaggioli, M.L. Calvo, R. Dändliker, M. Kujawinska, A. Friesem. Standing from left to right: G. Sincerbox, H. Arsenault, G. Von Bally, G. Jin, I. Yamaguchi, A. Friberg, A. Wagué, Y. Kim

ICO TREASURER'S REPORT, 2002-2005



The ICO Treasury operates on a cash basis using a fiscal year matching the calendar year. Because the Green Book goes to press early, reported here are the actual expenses for the period ending February 1, 2005. An update will be presented at the time of the ICO-20 Congress in Changchun, China.

The income for the ICO during any three-year period is comprised of about US\$ 100,000 from territorial dues, US\$ 3,300 from interest and US\$ 2,000 from book royalties. As of 1 February 2005, the cash reserves of the ICO are US\$ 159,433, a decrease of about US\$ 13,000 over the previous 3-year period.

Dues in arrears have increased slightly to US\$ 13,800. Much of this, US\$ 9,000, is due to five territories being more than four years in arrears. Resolving this situation will continue to receive priority attention in the next triennium.

The reserves continue to remain at a high level and now exceed the cost of operation of a single triennium. While it is prudent to maintain a reserve, the ICO Bureau recognizes that funds are available to support new ventures and/or augment current programs. This is reflected in the new budget for the period 2005-2008 where it is proposed that expenses exceed income by approximately US\$ 18,000. Even at this increased rate of spending, it is estimated that, with inflation, a balanced budget will not be required for approximately 21 years.

Glenn T. Sincerbox, Treasurer

INCOME AND EXPENSES – 1 FEBRUARY 2005

Ordinary Income

Book Royalties	\$1.347
Membership Dues	\$66.386
Interest Income	\$2.705

Total Income

\$70.438

Expenses

Secretarial expenses	
Supplies	\$5.763
Labor	\$8.736
Treasurers expenses	
Bank service charges	\$1.674
Postage, FAX, PO Box	\$467
Newsletter distribution	\$12.931
Bureau expenses	\$3.358
Meeting & school support	\$31.250
Prizes	
Galileo Prize	\$2.000
ICO Prize	\$0
ICO/ICTP Prize	\$2.000
Prize recipient travel	\$2.000
Travelling Lecturer	\$5.000
Payment to SPIE for ETOP'99	\$3.000

Total Expenses

\$78.179

BALANCE SHEET – 1 FEBRUARY 2005

ASSETS

Current Assets

Checking/Saving

Bank of America - checking	\$45.256
Bank of America - Money Market	\$110.482
French Account (converted as of 01/25/05)	\$3.925
Total Checking/Saving	\$159.663

Accounts Receivable

Accounts Receivable (current year dues)	\$4.800
Dues in arrears	\$9.000

Total Accounts Receivable	\$13.800
----------------------------------	-----------------

TOTAL ASSETS	\$173.463
---------------------	------------------

LIABILITIES & EQUITY

Liability

Meeting/School Support	\$4.250
Prizes/Awards/Prize travel	\$6.500
Newsletter printing not billed	\$5.280
Total Liability	\$16.030

Equity

Retained Earnings	\$157.433
-------------------	-----------

Total Equity	\$157.433
---------------------	------------------

TOTAL LIABILITIES & EQUITY	\$173.463
---------------------------------------	------------------

INTERIM REPORT OF THE INTERNATIONAL COMMISSION FOR OPTICS NOMINATING COMMITTEE 2005 ICO BUREAU ELECTIONS

According to established procedures, elections for members of the ICO Bureau occur every 3 years and will take place this year at the ICO-20 Congress, “Challenging Optics in Science and Technology” to be held 21-26 August 2005 in Chang Chun, China, a special event during this World Years of Physics 2005. The procedures and protocols for the election are as described in the ICO Rules and Codes of Practice.

For the upcoming election the Nominating Committee consists of Arthur H. Guenther (US, Chair), Toshimitsu Asakura (Japan), Maria Yzuel (Spain), and Chris Velzel (Netherlands).

According to ICO rules letters have been sent to the territorial committees in 2004 and 2005 asking for nominations to be received by April 15, 2005.

As of this date, April 25, 2005, the following nominations have been received and/or established by protocol, to wit:

Candidate for President - Prof. Ari T. Friberg - Finland

Candidate for Secretary – Professor Maria L. Calvo (Spain)

Candidate for Associate Secretary – Prof. Gert Von Bally (Germany)

Candidate for Treasurer – Professor Alexander Sawchuck (USA)

Candidates for Vice President (those in industry are marked with an asterisk*)

*Please note that the Bureau is required to have two Vice Presidents members from industry. We look forward to hearing from you further on this most important matter concerning ICO.

Prof. Sergei N. Bagayev (Russia)
Dr. Nestor G. Gaggioli (Argentina)
Dr. Hervé Lefevre* (France)
Professor John Love (Australia)
Dr Byoung Yoon Kim* (South Korea)
Dr. Timothy G. Strand* (United States)
Prof. Ichirou Yamaguchi (Japan)

Present Vice Presidents eligible for a second term are:

Prof. Guofan Jin (China)
Prof. Molgorzata Kujawinska (Poland)

Past President

The position of Past President for the term 2005 – 2008 will be automatically assumed by the current President, René Dändliker (Switzerland)

To these in the Bureau composition will be individuals designated as Vice President by the member societies.

However, it should be remembered that nominations for all positions/officers close 24 hours before the second business meeting of the International Commission for Optics General Assembly in Changchun.

The election activities will take place as indicated during the ICO General Assembly - I sessions scheduled for 16:00-18:00 hours August 22, 2005 while the second and final ICO General Assembly No. II is scheduled for 16:30 to 18:30 hours August 25, 2005.

Additionally, during the immediate future the Nominating Committee will be collecting endorsements of candidates from the various territorial members and CVs.

Professor Arthur H. Guenther

International Commission for Optics Past President
Chairman, ICO Nominating Committee



ICO ACTIVITIES FOR THE REGIONAL DEVELOPMENT FOR OPTICS – A SUMMARY

It has been a standing policy of the International Commission for Optics for almost twenty years to make the Regional Development for Optics one of its highest priorities.

The summary of activities has been reported in the minutes of the ICO Bureau Meetings for the period 2003-2005. In particular, we are here including some of the mayor actions.

ICO maintains tight contacts with the International Center for Theoretical Physics, ICTP, Trieste, Italy, in order to find new ways to provide promote Optics in developing countries, in particular true the exchanges of information and true joint organizations of schools. A series ICO/ICT Winter College in Optics has been organized every two years 1993. The ICO Bureau 2001 decided to make it an annual event. In these schools, ICO provides a nominal financial support, and place a major role in the selection of topics and schools directors. In 2000 the Optical Society of America has joined the program, in 2002 the SPIE and in 2003 OWLS also joined as partners. Discussions are underway with other possible partners.

The following topics were decided and offered for the period 2003-2005:

2003: Winter College on Biophotonics

2004: Winter College on Interferometry and Applications in Modern Physics

2005: Winter College on Optics and Photonics in Nanoscience and Nanotechnology

Detailed reports on these colleges are periodically published in ICO Newsletter.

In February 2004, ICO has signed the terms of reference for the establishment of a body to advise on the coordination of activities in Optics and Photonics related to the Trieste System. With the working name: TSOSA Advisory Group (Trieste System Optical Sciences and Applications Advisory Group). The TSOSA Advisory Group is established with the purpose to offer advice on the development and coordination of activities on Optics and Photonics carried out or planned by the Trieste System. It is initially established by the following Organizations: ICO, OSA, SPIE, OWLS, IAEA, UNESCO and Institutions of the Trieste System i.e. ICTP, ICS, TWAS, ICGEB, Elettra Synchrotron Light Facility and the Laser laboratory at Elettra.

The detailed contents of the terms of reference can be found in this Green Book in the Meetings Reports section



Some of the participants at the meeting held at the ICTP, Miramare, Trieste (Italy) in 20 February 2003. The meeting was organized by Gallieno Denardo, responsible for the management of optics and photonics activities at ICTP.

REPORT OF THE TRAVELLING LECTURER COMMITTEE

This is a report of the Travelling Lecturer committee covering the period October 1, 2002 to Feb 1, 2005. During this period we have supported the following five lecturers:

- Prof. Yen-Chieh Huang, National Tsinghua University, Taiwan, to visit Egypt in Sept./Oct. 2003. Professor Huang lectured at the Assiut University, Mina University and Kena Faculty of Science.
- Prof. Xi-Chen Zhang, Rensselaer Polytechnic Institute, USA, to visit China and Malaysia in the summer 2003. Professor Zhang's lecture topics were "Next Rays? T-Rays!" and Recent Advancement of Terahertz Wave Sensing and Imaging at the Institute of Physics, Beijing and the Universiti Teknologi Malaysia in Malaysia.
- Prof. Y. P. Kathuria, Ritsumeikan University, Japan, to visit India in May/June 2003. Prof Kathuria lectured on Laser/Optics Applications in Rapid Manufacturing and Laser-optic Applications in Nano and Microtechnology at the Instrument Design Dev. Center, Central Scientific Instruments Org., IEEE-Delhi/OSA local chapter, Center for Advanced Technology, Indian Inst. Of Science, Indira Gandhi Center for Atomic Research, Indian Institute of Technology and the Instruments Research and Development Establishment.
- Prof Vadium Parfenov, S. I. Vavilov State Optical Institute, Russia, to visit Brazil in November 2003. Prof. Parfenov lectured on Adaptive Optics and Optical Instrumentation for Large Astronomical Telescopes at the University of San Paulo and the Institute for Astronomical Sciences.
- Prof. Akhlesh Lakhtakia, Penn State University, USA, to visit Pakistan in July 2005. Professor Lahktakia will lecture on Sculptured Thin Films and Advanced Topics in Electromagnetics at the Quaid-i-Azam University and the GIK Institute of Science and Technology.

The budget for the Travelling Lecturer program for this 3-year period was US\$ 5,000 and has been fully utilized. There is an additional amount of US\$ 1,322 that can be applied to this program. This money comes from royalties derived from the ICO book(s).

The ICO Travelling Lecturer program still has very few applicants. It would be better for the program if the selection process were a little more competitive. This, to a very large extent, is due to the lack of familiarity with the program within the optics community. We need to do a better job of identifying potential lecturers and/or identifying developing territories that can serve as hosts. Both require more intensive advertising on our part and promoting better awareness. Perhaps we can use the ICTP to reach potential host territories by the distribution of a flyer to attendees at the Winter College in Optics. We must be somewhat careful as our limited budget may result in too many rejections and subsequent loss of interest.

Glenn Sincerbox, Chair, Travelling Lecturer Committee

AN ICO TRAVELLING LECTURER PROGRAM 2003

Theme: Exploring Laser and Optics Applications in Engineering and Science Report

The main aim with this ICO Travelling Lecturer Program was to explore laser and optics application in engineering and science in India and to interact with the researchers through a series of lectures in various institutions: Instrument Design Development Centre (IDDC) Ambala, Central Scientific Instruments Organization (CSIO) Chandigarh, Instruments Research and Development Establishment (IRDE /DoD) Dehra Dun, IEEE-Delhi / OSA-local chapter: Indian Institute of Technology (IIT) Delhi, Center for Advanced Technology (CAT /DAE) Indore, Indian Institute of Science (IISc) Bangalore, Indira Gandhi Centre for Atomic Research (IGCAR /DAE) Kalpakkam, Indian Institute of Technology (IIT) Mumbai, Shriram Institute for Industrial Research (SRI) Delhi, National Physical Laboratory (NPL) Delhi.

The first five institutions located in the north and central part of India are directly involved in optics and laser research and development programs, whereas the others are involved indirectly as users for the R & D activities of their needs. Some institutions also develop laser and optics based educational kits for schools and colleges as well as impart optical-workshop training to the individuals. The lectures were held in the above mentioned institutions located at various places in the country. The lectures covered a wide spectrum of optics and laser applications in macro-, micro- and nanotechnology with the actual demonstrations of the samples. In total it attracted more that 200 participants. There has been much interest and enthusiasm among the audience for interdisciplinary research in the emerging areas.

The lecturer is especially grateful for the support of the local organizers: Ms Keshni A. Arora, M. P. K. Goel, Dr. R. P. Bajpai, Mr. H. L. Bajaj, Dr. S. Mukopadhyaya, Prof. Kehar Singh, Dr. A. K. Nath, Prof. S. Mohan, Dr. Baldev Raj, Dr. V. S. Raghunathan, Prof. B. P. Kashyap, Dr. A. K. Gupta, Shri J. P. Kapur, Dr. R. K. Khandal and Dr. Vikram Kumar, who made this event a great success.

A related link with additional information can be found in: <http://www.ritsumei.ac.jp/eng/>

Y. P. Kathuria



Optical workshop trainee – polishing assistance

TRIENNIAL REPORT OF THE ICO PRIZE COMMITTEE

1) Introduction

ICO has established in 1982 the ICO Prize, to be given each year to an individual who has made a noteworthy contribution to optics, published submitted for publication before he or she has reached the age of 40. (Specifically, the Prize winner must not have reached the age of 40 before December 31 of the year for which the Prize is awarded). The character of the work of successive Prize recipients should preferably alternate between predominantly experimental or technological and predominantly theoretical. The "noteworthy" contribution in optics is measured chiefly by its impact (past or possibly future) on the field of optics generally, opening a subfield or significantly expanding an established subfield in research or technology.

The award winners to this date are :

- 1982 Antoine Labeyrie, France
- 1983 James R. Fienup, USA
- 1984 J. Christopher Dainty, U.K.
- 1985 Sergei I. Stepanov, USSR
- 1986 Kensuke Ikeda, Japan
- 1987 Alain Aspect, France
- 1988 no prize bore the number of the year 1988. The 1988 prize was changed to 1989 in order to coincide with the year of the award
- 1989 Demetri Psaltis, USA
- 1990 Rosario Martinez-Herrero, Spain
- 1991 David A.B. Miller, U.K. and USA
- 1992 Wolfgang Peter Schleich, Germany
- 1993 Aleksander K. Rebane, Estonia
- 1994 Emmanuel Desurvire, France
- 1995 Tony F. Heinz, USA
- 1996 Vladimir Buzek, Slovakia
- 1997 Andrew M. Weiner, USA
- 1998 David Mendlovic, Israel and Haldun Ozaktas, Turkey
- 1999 Hugo Thienpont, Belgium
- 2000 Stefan W. Hell, Germany
- 2001 Nabeel A. Riza, Pakistan and USA
- 2002 Prize not accorded
- 2003 Benjamin J. Eggleton, Australia
- 2004 Ashok V. Krishnamoorthy, India

The present ICO Prize Committee, consisting of Asher A. Friesem (chair), Henri H. Arsenault, Guofang Jin, Giancarlo Righini, Bahaa E.A. Saleh and Andrew M. Weiner is now in the process of selection from nominations for the 2005 prize, whose winner will be announced at ICO-20.

2) Rules and Form:

The Prize includes:

- a citation,

- a cash award of an amount established in the triennial budget of ICO, and the invitation to present an invited paper and receive the award at the next ICO Congress or another ICO meeting mutually agreed to by the bureau and the award winner.

Every year, the ICO Prize Committee issues a call for nominations that is published in the ICO Newsletter, receives the nominations and selects the recipients for approval by the Bureau at its next meeting. The award needs not be made each year if the Prize Committee so chooses. The Prize is preferably given to an individual, but it can be shared by two persons. Eligibility for the Prize is not excluded by previous prizes awarded to the individual. The selected Prize winner is then announced in the ICO Newsletter and, as appropriate, in one or more optics journals. The prize will be presented at the next appropriate major ICO meeting and the Prize winner will be expected to deliver an invited talk at that Meeting.

Additional general information about the ICO Prize:

The cash award presently carries an amount of US\$2000 and US\$1000 for travel expenses. In addition to the rules adopted by ICO, the Carl Zeiss foundation has generously agreed to donate an Ernst Abbe medal to the winner.



The formal rules of the ICO Prize are found in section 9 of the Rules and Codes of Practice in this booklet.

3) Award nomination form:

<http://www.ico-optics.org/awards.html>

4) ICO 2002, 2003, 2004 Prize winners

a) 2002 ICO Prize: not accorded

b) 2003 ICO Prize: Benjamin J. Eggleton

Benjamin J. Eggleton is currently a Federation Fellow of the Australian Research Council (ARC), Professor of Physics and the Director of the ARC Centre of Excellence for Ultrahigh-bandwidth Devices for Optical Systems (CUDOS) at the University of Sydney in Australia. He received his Ph.D in Physics from the University of Sydney in 1996. He then joined Bell Laboratories, Lucent Technologies, as a Postdoctoral Member of Technical Staff in the Optical Physics Department where he explored nonlinear pulse propagation effects in one-dimensional

photonic crystal materials. In 1998 he transferred to the Optical Fibre Research Department at Bell Laboratories and subsequently was promoted to Technical Manager of the Fibre Grating and Devices group where he lead Lucent Technologies research effort in fibre grating devices. In this role he leads a team that invented and developed a 40Gb/s tuneable dispersion compensator that was subsequently manufactured and deployed in optical networks. In 2000 he was promoted to Research Director within the Speciality Fibre Devices Business Division where he was responsible for forward-looking research and research prototyping supporting Lucent Technologies business in optical fibre devices and components, including fibre lasers, Raman amplifiers, optical performance monitors and polarization management devices.



More recently he was Director of the Photonic Devices Research Department in OFS Laboratories, part of the newly formed OFS Fitel business. Dr. Eggleton has co-authored over 90 journal publications and numerous conference papers and invited presentations. Dr Eggleton was the recipient of 1998 Adolph Lomb Medal from the Optical Society of America for the first demonstration of nonlinear pulse propagation effects in photonic bandgap materials. He received the distinguished lecturer award from the IEEE/LEOS in 2002, is an OSA fellow and was the co-inventor of a

photonic device that was award an R&D100 award. His research interests include nonlinear optics, photonic bandgap structures, optical fibre gratings, air-silica microstructured fibres, tuneable optical fibre devices, microfluidics, dispersion compensation techniques, Raman amplification and optical regeneration. He was the Program Chair for the 2003 LEOS Topical Meeting on Photonic Crystals and Holey Fibres and serves on various conference committees. He is also an associated editor for IEEE Photonics Technology Letters. It is expected that Prof. Benjamin J. Eggleton will deliver the ICO Prize 2003 Lecture in the forthcoming ICO-20 Triennial Congress “Challenging Optics in Science and Technology”, Changchun, China, 21-26 August 2005.

c) 2004 ICO Prize: Ashok V. Krishnamoorthy

The ICO Prize is given to an individual who has made noteworthy contributions to optics before reaching the age of forty years. The ICO Committee for ICO Prize has selected Dr. Ashok V. Krishnamoorthy as the recipient of the 2004 prize. This proposal was unanimously approved by the ICO Bureau held in Porlamar (Venezuela) last October 2004. The award citation reads: “For his outstanding contributions in the areas of optical integrated circuit technology, free-space optical interconnects, optical neural networks, and parallel computer architectures, in both theoretical and experimental results”.

Ashok V. Krishnamoorthy was born in Madras (now Chennai), India. He went to school in Tokyo, Japan; New Delhi, India; and Lagos, Nigeria, before coming to the California Institute of Technology (CALTECH) in USA to pursue higher studies in 1982. He obtained the BS in Engineering (with honours) from CALTECH in 1986. The MS in Electrical Engineering/Optics from University of Southern California in 1988 and the PhD in Electrical Engineering from the

University of California San Diego (UCSD) in 1993. His thesis advisor was Professor Sadik Esener.

During his PhD studies, Ashok Krishnamoorthy already demonstrated impressive theoretical and experimental research abilities in the areas related to optical waveguides, integrated optics and applications to optical communications. As a post-doctoral research at UCSD, he participated in the development of optically transparent, polarization-based switches.

In 1994, he joined ATT Bell Laboratories, where he made noteworthy contributions in the area of opto-electronic integrated circuits. Specifically, he helped to develop a method where arrays of optical devices, such as detectors, modulators, and vertical cavity surface-emitting lasers (VCSELs) are attached to CMOS chips.



In 1999, he joined Lucent New Ventures Organization as a Program Manager, where he and his team successfully demonstrated working prototypes of opto-electronic-VLSI technology. This led to the establishment of Aralight Inc., a Lucent spin-off, which he joined as President and CTO in 2000. The first product developed in this company was a dense parallel-optics module. After successfully launching the product and completing several customer trials, he sold the company to Xanoptix in late 2003. In October 2003, he joined SUN Microsystems' Physical Sciences Center to lead work on optical interconnection technologies for high-performance computing systems. He also played the key role in several industry milestones including: the first CMOS-based opto-electronic modulator foundry service, the first demonstrated parallel optics transmitter/receiver product with over 100Gbit/s throughput, and the first 300meter opto-electronic backplane interconnect demonstration free of clock and data-recovery (CDR) circuits.

Ashok Krishnamoorthy has authored and co-authored more than 150 scientific articles, holds 30 US patents, and has given invited presentations on his research at major international conferences. He was named Outstanding Young Engineer in 1999 by the Eta Kappa Nu Engineering Honour Society and was chosen a Distinguished Lecturer by LEOS in 2002 and 2003 for his work on integration of optical devices with VLSI electronics. In 2003 he was given the title of Distinguished Engineer by Sun Microsystems. He will be invited to deliver the ICO Prize 2004 Lecture in one of ICO major events in which the award ceremony is traditionally taking place as well.

TRIENNIAL REPORT OF THE ICO GALILEO GALILEI COMMITTEE

1) Introduction

At the 1993 General Assembly of ICO, the International Commission for Optics established the ICO Galileo Galilei Award, to be given each year for outstanding contributions to the field of optics achieved under comparatively unfavourable circumstances. The award will normally be given to an individual. However, if a collective contribution is judged to be worthy of the award, a team of several persons may be selected.

The award winners to this date are:

- 1994 Ion N. Mihailescu, Romania.
- 1995 Rajpal S. Sirohi, India.
- 1996 Daniel Malacara, Mexico
- 1997 Natalyia D. Kundikova, Russia
- 1998 Ajoy K. Ghatak, India
- 1999 Mario Garavaglia, Argentina
- 2000 Vladimir P. Lukin, Russia
- 2001 Kehar Singh, India
- 2002 Rashid A. Ganeev, Uzbekistan
- 2003 Cid B. de Araujo, Brazil
- 2004 Milivoj Belic, Serbia and Montenegro, and Caesar Saloma, Philippines

The present ICO Galileo Galilei Award Committee consists of Gert Von Bally (chair), Anna Consortini, Henryk Kasprzak, Serguey Odoulov, María J. Yzuel. The Committee is established as part of the ICO Committee for Regional Development of Optics.

2) Rules and form

The Galileo Galilei medal of ICO is awarded for outstanding contributions to the field of optics which are achieved under comparatively unfavourable circumstances.

The outstanding contributions in the field of optics should refer to:

- fundamental scientific questions or problems, or
- research or development of optical methods or devices, or
- scientific or technical leadership in the establishment of regional optical centres.

"Comparatively unfavourable circumstances" refers to difficult economic or social conditions or lack of access to scientific or technical facilities or sources of information.

The outstanding contributions must be documented, if applicable, by internationally acknowledged publications. Exceptionally, reports can be considered, provided that they are made available to the Award Committee.

The award is normally given to one person. Exceptionally, however, if a collective contribution is judged to be worthy of the award a team of several persons may be selected.

Every year, the ICO Galileo Galilei Award Committee issues a call for nominations that is published in the ICO Newsletter, receives the nominations and selects the winner for approval by the Bureau at its next meeting. The award need not be given every year if the Bureau so chooses.

The award consists of:

- a) the Galileo Galilei Medal,
- b) assistance in travel to present an invited paper and receive the award at the next ICO Congress or another ICO meeting mutually agreed to by the Bureau and the award winner,
- c) a cash donation
- d) special attention and appropriate measures of ICO to support the future activities of the award winner



The formal rules of the ICO Galileo Galilei award are found in section 10 of the Rules and Codes of Practice in this booklet.

Additional general information about the Galileo Galilei Award:

The Italian Society of Optics and Photonics, SIOF (Società Italiana di Ottica e Fotonica) has agreed to support ICO's initiative and donate the silver medal with the portrait of Galileo Galilei to be given to the recipient.

The Award contributes to one of the essential missions of the International Commission for Optics: recognize the promotion of Optics under difficult circumstances. The award was established by the 1993 General Assembly of ICO and has been awarded annually since 1994.

3) Award nomination form:

<http://www.ico-optics.org/awards.html>

4) ICO 2002, 2003 and 2004 award winners:

a) 2002 ICO Galileo Galilei award: Rashid A. Ganeev

The 2002 ICO Galileo Galilei award has been awarded to Dr. Rashid A. Ganeev. Rashid A. Ganeev was born in Tashkent, Republic of Uzbekistan in 1955. He got his M.Sc. degree in Engineering Physics from Tashkent Polytechnic Institute in 1977 and Ph.D. degree in Physics and Mathematics in 1987 from the Academy of Sciences of Uzbekistan. In 1977 he joined the Institute of Electronics, Academy of Sciences of Uzbekistan, Tashkent, where he became engineering. In 1998 he became principal scientist at the Institute for Physics of Polymers, Physical and Technical Institute, Samarkand State University.



Dr. R. A. Ganeev has published over 100 research papers in internationally reputed journals. His current research interests are in the fields of Nonlinear Optics and Laser Physics. The Galileo Galilei Award committee recognized his sound contributions, both theoretical and experimental, for developing new methods for nonlinear frequency conversion of high power laser radiation in nonlinear crystals and characterization of nonlinear optical properties of metal, semiconductor and polymer media. All mentioned work has been developed under comparable unfavourable conditions.

Dr. Ganeev has undertaken and developed extensive major lines of research in the above mentioned subjects. In the first subject he obtained a maximum energy efficiency of frequency conversion of a high-laser beam (1054 nm) in KDP and ADP crystals, of the order of 90% for second harmonic generation (527 nm) , 80% for third harmonic generation (351 nm), 92% for fourth harmonic generation (263 nm) and 20% for fifth harmonic generation (211 nm). The main result of these investigations is the understanding of principles, which permit to increase the frequency conversion of laser radiation in crystalline media. In the second general subject he measured nonlinear refractive indices, non linear susceptibilities and non linear absorption coefficients of colloidal metal solutions, semiconductor chalcogenide films and fullere-doped polyimide films and solutions at the wavelengths of Nd:YAG laser radiation and its second harmonic. Ganeev has been awarded in 1994 by the International Science Foundation Grant, in 1997 by the Third World Associateship Scheme Grant, in 1998 by the State Committee for Science and Technology of Uzbekistan Prize and in 2000 by the Japanese Ministry of Science and Technology. Ganeev has conducted scientific leadership in the establishment of the centre of nonlinear optical studies in Uzbekistan. Now this centre combines the efforts of various groups from Uzbekistan and various foreign countries academic institutions and industries as with Germany, India, Japan, Malaysia, Singapore, Russia and other NIS countries.

b) 2003 ICO Galileo Galilei award: Cid B. de Araujo

The 2003 Galileo Galilei Award is given to Prof. Dr. Cid Bartolomeu de Araújo, Departamento de Física, Universidade Federal de Pernambuco, Cidade Universitária, Recife, PE, Brazil. Prof. de Araújo was born on May, 20th 1945 in Recife, Brazil.



He received his Master degree in Physics from the Pontificia Universidade Católica, Rio de Janeiro, in 1971. After finishing his PhD in Physics at the same University in 1975 he joined the group of the Nobel Laureate Prof. Dr. Bloembergen at Harvard University, Cambridge, USA, as research associate. Returning back to Brazil in 1978, he started a theoretical research program in optics and by 1983 he established a laboratory for research in non-linear optics in Recife. The research work has attracted funding for research in non-linear optics, laser spectroscopy and photonics from Brazilian agencies such as National Research Council, Ministry of Education and Ministry of Science and Technology. Prof. de Araújo is one of the founders of the Physics Department of the Federal University of Pernambuco, where he became full professor in 1989 up to the present. As early as 1980 his team was the first to propose two-photon absorption by a pair of two different atoms, an effect observed only recently by a group of German scientists. Thanks to the advances in quantum-optics, the importance of the effect predicted 23 years ago by Prof. de Araújo and his co-workers can now be visualised for application and quantum computation. Also in 1980 his team was the first to demonstrate frequency up conversion via energy transfer among isolated isoionic triads of ions in doped crystals. His group was also the first to report coherent excitation of phonon-polaritons in a centrosymmetric crystal. In 1991 his group was the first to demonstrate two-colour Z-scan technique for nonlinear material characterisation, a technique later reported independently by a group at CREOL at the University of Central Florida, Orlando. In recent years, Prof. de Araújo has been involved in several experiments in fluoroindate glasses. Currently the major effort in

his laboratory is dedicated to studies of nonlinearities in nanostructured materials, including photonic bandgap crystals and nanocomposites. Summarizing it can be said, that the nonlinear optics group under the leadership of Prof. de Araújo has gained international reputation.

Yet, it has not to be forgotten, that all these efforts were done under especially complicated circumstances. So, despite of the economic hardships and bureaucratic bottlenecks, he made possible to establish world-class research facilities in Recife and to train new generations of students not only from Brazil but also from other developing countries. He advocated high standards and lobbied the federal and state governments to support basic as well as applied research in parts of Latin-America and Brazil in particular. In his country Prof. de Araújo has provided unparalleled services to the optics community. He has contributed to the departmental and university governance, served in advisory capacity with several federal and state government agencies, and played leadership role in the Brazilian Physical Society, an umbrella organization for all branches of physics, including optics.

It was this combination of internationally high standard research on one side and his outstanding personal engagement without which the economic and bureaucratic restrictions could not have been overcome, on the other hand, which convinced the Galileo Galilei Award Committee to propose Prof. de Araújo as candidate for the Galileo Galilei Award 2003 to the Board of the International Commission for Optics. This proposal was supported and accepted by the Board Members at their meeting in Joensuu, Finland, in September 2003.

It is expected that Prof. Cid B. de Araújo will deliver de ICO Galileo Galilei Award 2003 Lecture in one of the major forthcoming ICO Meetings or supported events.

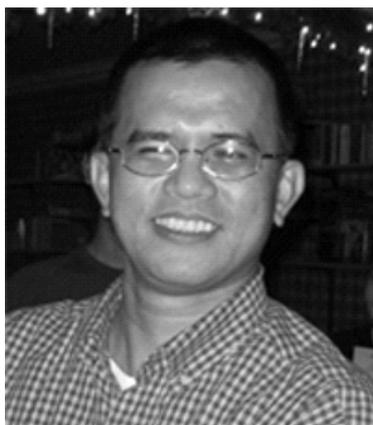
c) 2004 ICO Galileo Galilei award: Milivoj Belic and Caesar Saloma

The Galileo Galilei medal of ICO is awarded every year to scientists authoring outstanding contributions to the field of optics which that have been achieved under comparatively unfavourable circumstances. For the year 2004 the award has been accorded to Milivoj Belic and to Caesar Saloma. Milivoj R. Belic was born 1951 in the former Yugoslavia. In 1975, with wife and baby, he left for USA, to pursue graduate studies at the City College of New York. He obtained PhD degree in 1980, under Joel Gersten and Melvin Lax. The first post-doc stint he did at the University of Arizona, Tucson, with Willis E. Lamb, Jr. In 1981 he returned to Yugoslavia, to accept a junior position at the Institute of Physics, Belgrade. He remained with the Institute ever since.



The research interests of Prof. Belic centred on optics from the beginning, more particular on the nonlinear optics and nonlinear dynamics of optical systems. His work in nonlinear optics was concerned with the wave mixing, optical computing, and spatial solitons. In nonlinear dynamics, it involved the development of optical instabilities and chaos, transverse pattern formation, and the dynamics of defects. In other areas, such as the condensed matter physics, he was working on photorefractive materials and effects. In computational physics, over a span of three decades, he

was instrumental in developing ever more sophisticated numerical algorithms for the treatment of systems of PDE in space and time. The range of his research interests touched even on biophysics, where he studied the cooperative behaviour of honeybees in constructing beehives. While his activities in Yugoslavia were accomplished under very limited resources at hand, he succeeded in obtaining exact analytical solutions to various two-wave and four-wave mixing arrangements in photorefractive media. In the nineties, when his interest shifted to phase conjugate oscillators, he formulated working conditions for these devices and applied them to optical computing. In the past few years he introduced and demonstrated, with the help of experimental colleagues, the existence of counter-propagating two-dimensional vector solitons and bidirectional waveguides in SBN crystals. Currently he is concerned with the dynamics of counter-propagating solitons and self-trapped beams in saturable non-local media. His most important and lasting contribution is the establishment and maintenance of strong research group in Belgrade, working under adverse conditions, yet producing outstanding research results. The initial years of political unrest were followed by the economic breakdown and hyper-inflation, sanctions amid war and crime, deteriorating conditions to the times of no electricity, heating or gas, to food shortages, and falling bombs. It was difficult to do physics when the order of the day was physical survival. Yet, over the years, he produced a steady stream of high-quality papers published in the leading physics journals. Milivoj Belic is currently a visiting professor at the Texas A&M University at Qatar, in Doha.



Caesar Saloma is a professor of physics at the National Institute of Physics of the University of the Philippines in Diliman, Quezon City, Philippines. Between 1987 and 1989, he was in the Department of Applied Physics, Osaka University to perform his PhD dissertation research under the super-vision of Shigeo Minami and Satoshi Kawata. His PhD dissertation dealt with temporal coherence control of semiconductor lasers as light source in optical microscopy. In 1989, he returned to the University of Philippines as an assistant professor and started a research group in optical microscopy and signal processing. He graduated his first MS student in 1991 based on the formulation of an efficient algorithm for calculating the Fourier transform from the sampled sinusoid crossings of an interferogram. In 1994, Professor Saloma spent a year at the Osaka National Research Institute on a postdoctoral fellowship from the Science and Technology Authority of Japan where he worked on the use of optical feedback detection in optical microscopy. In 1996, he was a visiting professor at the Institute of Molecular and Cellular Biology of Osaka University and worked with Professor Hisato Kondoh on the use of the laser fluorescence confocal microscopy in imaging optically-thick biological samples. Caesar Saloma has investigated as well on the efficiency of laser confocal microscopy and multi-photon excitation microscopy for imaging applications in highly-scattering media. He collaborated with Professor Satoshi Kawata in studying the potential use of two-photon fluorescence microscopy for observing biological samples in turbid media. Caesar Saloma and his team are using a home-built hydrogen Raman shifter as a light source for two-colour (two-photon) fluorescence excitation and two-colour generation of optical beam induced current in semiconductor devices. Together with engineers from Intel Technology Philippines, he is also developing new ways of detecting defects in backside integrated circuits. His team is also collaborating with marine biologists in the

Philippines to develop a better way of classifying coral reefs and sea grasses by remote sensing. The experience of Caesar Saloma in optics and signal processing has allowed him to venture into other emerging interdisciplinary research areas as in complex adaptive systems and neural networks. To date, Caesar Saloma has successfully trained ten PhD students at the University of the Philippines. In 2000 he became Director of the National Institute of Physics and is currently serving his second term until 2006. He has been working in the formulation and implementation of new ways to improve the quality and efficiency of its graduate school programs. His efforts are based on the recognition that young talented Filipinos migrate to developed countries due to the lack of viable graduate schools in the Philippines where there are less than a hundred PhD degree holders in physics. Caesar Saloma served as president of the Physical Society of the Philippines from 1997 to 2000. He is currently a council member of the Association of Asia-Pacific Physical Societies. He is also an associate member of the *Abdus Salam* International Centre for Theoretical Physics and a member of the Optical Society of America.

TRIENNIAL REPORT OF THE ICO/ICTP AWARD SUBCOMMITTEE

1) Introduction

ICO, the International Commission for Optics, and ICTP, the Abdus Salam International Centre for Theoretical Physics, Trieste, have agreed to establish a joint prize, called the ICO/ICTP Award. It is reserved for young researchers from developing countries (as defined by the United Nations), who conduct their research in a developing country. The award will be given to scientists less than 40 years old (on December 31 of the year for which the award is given), who are active in research in Optics and have contributed to the promotion of research activities in Optics in their own or another developing country. While this web site has complete information, the following should be appropriate to prepare a nomination.

The first winners of the award were:

- 2000: Arbab Ali Khan (Pakistan)
- 2001: Arashmid Nahal (Iran) and Fernando Pérez Quintián (Argentina)
- 2002: Alphan Sennaroglu (Turkey)
- 2003: Robert Szipöcs (Hungary)
- 2004: Imrana Ashraf Zahid (Pakistan) and Revati Nitin Kulkarni (India)
- 2005: Sarun Sumriddetchkajorn, Thailand

The present ICO/ICTP Award Subcommittee, consisting of Asher A. Friesem (chair) and Anna Consortini (2 ICO appointed members), Gallieno Denardo and Miltcho Danailov (2 ICTP appointed members).

2) Rules and Form

Purpose: It is reserved for young researchers from developing countries, who conduct their research in a developing country. The award will be given to scientists less than 40 years old (on December 31 of the year for which the award is given), who are active in research in Optics and have contributed to the promotion of research activities in Optics in their own or another developing country.

The award consists of the following:

1. The ICO gives a cash amount of US\$1000 and a diploma.
2. The ICTP invites the winner to attend a three weeks College at Trieste at the next appropriate opportunity, and to give a seminar on his/her work when appropriate. ICTP will pay for travel and living expenses. In February 2003, ICTP might to host an ICTP/ICO/OSA Winter College in Biophotonics.

Periodicity: The award will be delivered to the winner at Trieste in the presence of representatives of ICO and ICTP. The award is given to one person every year.

Nominations: The winner is selected on the basis of nominations received by the Award Committee in response to a call published by both ICO and ICTP. The nominations must be documented by a complete curriculum vitae including a list of publications and selected reprints (no more than three) as well as a complete employment history and a description of the nominee's achievements for the promotion of research activity in developing countries.

The ICTP invites the winner to attend a three weeks College at Trieste at the next appropriate opportunity, and to give a seminar on his/her work when appropriate. ICTP will pay

for travel and living expenses. In February 2004, ICTP might to host an ICTP/ICO/OSA Winter College in Interferometry.

3) **Award nomination form:**

<http://www.ico-optics.org/awards.html>

4) **ICO/ICTP 2003, 2004, 2005 award winners**

a) **2003 ICO/ICTP award winner: Robert Szipöcs**

The winner for 2003 is Dr. Róbert Szipöcs, a research scientist currently at the Research Institute for Solid State Physics and Optics, Hungarian Academy of Sciences, Budapest (Hungary).



After completing his MSc. at Technische University of Budapest, he has been working at the Optical Coating Laboratory of the Research Institute for Solid State Physics of the Hungarian Academy of Sciences. Working toward his doctoral degree, he investigated the nonlinear optical behaviour of optical thin film interference filters containing compound semiconductors. During the same period of time, he developed a software for analysis and synthesis of optical interference coatings.

After receiving his university doctoral degree, his research concentrated on the area of development of optical interference coatings used in femtosecond pulse solid state lasers and related fields of optics such as synthesis of graded-index dielectric coatings, computer optimisation of interference coatings, computational physics, interferometry and mode-locked solid state lasers, ultrafast phenomenon and spectroscopy.

In 1993, at the Research Institute for Solid State Physics and Optics, Budapest, Hungary, he developed special dispersive dielectric laser mirrors for femtosecond laser systems in collaboration with researchers at the Technical University of Vienna, Austria. These became known as chirped mirrors. This invention has been awarded by US Patent on "Dispersive dielectric mirror" including applications on mirror-dispersion-controlled Ti:sapphire laser oscillators. In general, chirped mirrors offer a solution for broadband dispersion control and feedback in femtosecond laser systems. They combine the benefits of a broader high-reflectivity range (as compared to low dispersion, standard quarterwave mirrors) with dispersion control over the reflectivity band. As a consequence, chirped mirror technology makes possible shorter pulse duration and more compact and reliable design in fs lasers. One of the most important applications of chirped mirrors is their use in Kerr-lens mode-locked Ti:sapphire laser oscillators.

In 1995, Dr. Szipöcs founded R&D Lazer-Optika Bt, which develops and offers dispersive dielectric mirrors for different mirror-dispersion-controlled femtosecond pulse laser systems, such as Ti:sapphire oscillators, Cr:LiSAF oscillators, Yb:glass or Nd:glass oscillators, fs chirped pulse amplification systems (CPA) and optical parametric oscillators (OPO-s). In 1997, he founded R&D Ultrafast Lasers Ltd, which develops and offers different femtosecond pulse laser systems, such as mode-locked Ti:sapphire laser oscillators in collaboration with his research institution.

In 1998, a new laboratory for ultrafast laser technique and laser spectroscopy was founded at the Research Institute for Solid State Physics and Optics. Since then, he worked on the scientific and technical development of this laboratory as a project leader (Development of femtosecond pulse laser system by using chirped mirrors for dispersion compensation). Currently, his research interest includes femtosecond nonlinear pulse propagation in microstructure (photonic crystal) optical fibers, femtosecond time resolved spectroscopy and two-photon microscopy.

Dr. Szipöcs has been a visiting scientist at the ICTP, Trieste, Italy, for various periods during the last ten years and delivered various conferences and invited talks. In 1995, he received the Youth Prize of the Hungarian Academy of Sciences, and in 1996, he was honored with the International Dennis Gábor Award. He is author or co-author of more than 30 scientific papers dealing with applications of special dielectric mirrors in femtosecond lasers and related works. His papers have been cited more than 600 times by independent authors. Additionally, he authored some 70 conference papers including some 10 invited conference lectures.

The ICO/ICTP Award Committee recognized Dr. Róbert Szipöcs's pioneering work in the understanding of the phase behavior of optical thin film devices creating a revolutionary progress in the field of femtosecond pulse lasers and thin film optics. The ICO/ICTP Award Committee has recognized the great quality of his work, mainly developed in his country of origin.

b) 2004 ICO/ICTP award winners: Imrana Ashraf Zahid and Revati Nitin Kulkarni



For the year 2004 the ICO/ICTP Award was given to Dr. Imrana Ashraf Zahid from Quaid-I-Azam University (Pakistan) and Dr. Revati Nitin Kulkarni from the International Institute of Information Technology, Pune (India), both researchers were sharing this 2004 prize. Dr. Ashraf was awarded for her contributions in the field of Quantum and Atom Optics and Lasers, and Dr. Kulkarni was awarded for her contributions in the field of Adaptive Optics. Both scientists are young researchers who have been pursuing their careers in a developing country as defined by UN.

In this occasion, the two winners of the 2004 prize were invited to deliver each an invited lecture. Thus, Dr. Ashraf presented the sounded results on her theoretical work on "Role of Pump-phase Fluctuations in Micromasers" and Dr. Kulkarni, was presenting the major achievements of her experimental work on the "Development of Methods and Devices for Adaptive Optics". All the attendees were impressed by the quality of their work developed in their countries of origin in the mentioned institutions.



The diplomas and awards were presented to the awardees by the ICO President, Prof. René Dändliker, in the presence of the ICTP-Executive Deputy Prof. Gallieno Denardo, followed by

the presentations of the recipients. The subsequent reception sponsored by the ICO provided a further chance for the mostly young participants, and for more senior lecturers to socialize and to congratulate to the ICTP colleagues for the 40th Anniversary of the foundation of this organization. The reception was also attended by the current ICTP Director, Prof. K. R. Sreenivasan.

c) 2005 ICO/ICTP award winner: Sarun Sumriddetchkajorn

Every year, at the occasion of the Winter College, held in February, at the International Center for Theoretical Physics (ICTP), Trieste (Italy), the ceremony of the ICO/ICTP Prize takes place. For the year 2005 the ICO/ICTP Prize has been awarded to Dr. Sarun Sumriddetchkajorn a researcher from the National Science and Technology Development Agency (NSTDA), Pathumthani, Thailand's Ministry of Science and Technology. Dr. Sumriddetchkajorn was born in 1973. In 2000 he presented his PhD dissertation at College of Optics and Photonics, CREOL (Florida, USA) under the supervision of Nabeel Riza. His main subject of research was multiwavelength fibre-optic switch array retroreflective structures, under both theoretical and experimental studies to analyze optical crosstalk level. Back to Pathumthani (Thailand) he pursued his work and organize activities, both scientific and professional, to promote optics and photonics in his country. He is currently a full-time scientist at the Thai National Electronics and Computer Technology Center (NECTEC) in which he develops both academic and research activities. In 2004 Dr. Sumriddetchkajorn was the recipient of Thailand's 2004 Young Scientist Award. The ceremony of this award, held in August 2004, had the presence of some members of the Thailand's Royal Family.



The ICO/ICTP Prize Committee has considered the outstanding merits of Dr. Sumriddetchkajorn, as a young researcher from a developing country and achieving mainly his scientific contributions in his country of origin. The citation reads: "For his achievements in applying Photonics and Micromechanics to Biomedical Devices and Telecommunications. His commitment in diffusing the interest for Optics and Photonics in Thailand deserves a special mention".

After the award ceremony, Dr. Sumriddetchkajorn delivered an invited lecture and explained his most remarkable achievements, including the recent development of an optical digital sensor, based on confinement of light in a planar waveguide, to be used as reference signal reception-emission. The device is an optical touch switch based on total internal reflection (TIR) in a Dove prism. The key features include ease of implementation, prevention of the light beam from becoming incident directly on the user's eyes, and ability to accept both strong and weak mechanical forces from users. The device presents an interesting characteristic as it is the exhibited low optical loss of 0.4 dB. In addition, two methods for removing the finger from the touching surface are implemented. The applications are having a social impact as are addressed to disable persons.

MEETINGS WITH ICO PARTICIPATION, 1946-2005

List compiled by Ari T. Friberg, ICO Associate Secretary, in charge of meetings

Below is a complete listing of events with ICO participation. Since the list may contain omissions or inaccuracies, corrections are particularly welcome. Events approved by the Bureau as of end of February 2005 have been included.

The first column indicates the ICO participation category: Z = no category; E = endorsed; C = cosponsored; X = ICO School; T = ICO Topical Meeting; R = ICO Regional Meeting; G = ICO General Meeting; S = Satellite. From 1992 on, the last four columns indicate respectively the ICO Bureau Member delegated by ICO in the Program Committee of the event and the amount of financial help; a "*" in the "grant" column indicates a specific help for identified registrants from less favored countries.

cat	start	end	cntry	city	title	ICO rep	grant	risk	loan
Z	14/10/46	19/10/46	FRA	Paris	Réunions d'opticiens				
Z	1/6/47	/ /	CZE	Praha	ICO Preparatory Meeting				
G	1/7/48	/ /	NLD	Delft	ICO-1				
G	1/7/50	/ /	GBR	London	ICO-2 Optical Instruments				
G	10/4/50	11/4/50	ESP	Madrid	Optical science				
C	11/11/51	11/11/51	FRA	Paris	Colloquium on Phase-Contrast				
C	11/11/52	11/11/52	ITA	Milano	Optics and Microwaves				
G	1/4/53	/ /	ESP	Madrid	ICO-3 Optical Problems of Vision				
C	1/9/54	/ /	ITA	Parma	International Symposium on Infra-Red				
G	1/3/56	/ /	USA	Cambridge, Mass.	ICO-4 Frontiers in Physical Optics				
C	1/6/57	/ /	FRA	Paris	The Physical Problems of Colour Television				
Z	6/5/58	9/5/58	BEL	Brussels	Optics in Metrology				
G	24/8/59	30/8/59	SWE	Stockholm	ICO-5 Modern Systems for Detection and Evaluation of Optical Radiation				
X	4/7/60	12/7/60	FRA	Paris	Modern Aspects of the Theory of the Formation of Images				
C	1/7/61	/ /	GBR	London	Optical Instruments and Techniques				
C	1/7/61	/ /	FRA	Paris	Optical Materials				
G	1/8/62	/ /	DEU	München	ICO-6 Image Formation and Vision				
C	1/9/63	/ /	FRA	Marseille	L'Optique des Couches Minces Solides				
C	1/8/64	/ /	AUS	Sydney	Interference and Coherence				
C	1/9/64	/ /	JPN	Tokyo, Kyoto	Photographic and Spectroscopic Optics				

C	1/4/65	/ /	HUN Budapest	Thin Films
C	11/11/65	/ /	FRA Paris	The Teaching of Optics to Specialists
G	1/5/66	/ /	FRA Paris	ICO-7 Recent Progress in Physical Optics
C	1/6/67	/ /	HUN Budapest	Second Colloquium on Thin Films
C	1/9/68	/ /	ITA Firenze	Symposium on Applications of Coherent Light
C	1/9/68	/ /	USA New York, NY	First International Conference on Electrophotography
G	1/7/69	/ /	GBR Reading	ICO-8 Optical Instruments
X	1/7/69	/ /	FRA Orsay	Optical Processing of Information
C	1/7/70	/ /	FRA Besançon	Holography
C	29/6/70	4/7/70	FRA Marseille	Space Optics
X	19/7/70	/ /	FRA Marseille	Space Optics
C	19/4/71	22/4/71	GBR London	Symposium on Perception & Applications of Flashing Lights
C	21/7/71	23/7/71	DEU München	Symposium on Visual Perform. when using Optical Instruments
C	30/8/71	2/9/71	JPN Tokyo	Vacuum Ultra-Violet Radiation Physics
C	11/11/71	11/11/71	HUN Budapest	Thin Films
C	11/11/71	11/11/71	GBR London	Modern Optics in Metrology
C	1/5/72	/ /	ITA Venice	International Conference on Thin Films - ICTF 2
C	1/10/72	/ /	USA Tucson, AZ	Beam Foil Spectroscopy
C	7/2/72	9/2/72	USA Las Vegas, NV	Integrated Optics, Guided Waves, Materials & Devices
G	10/10/72	12/10/72	USA Santa Monica, CA	ICO-9
C	1/3/73	/ /	USA Aspen, Colorado	Optical Storage of Optical Data
C	12/6/73	16/6/73	DEU Oberkochen	100 Years of Abbe's Theory
C	29/1/73	4/2/73	RUS Novosibirsk	5th Soviet Conference on Holography
C	1/5/74	/ /	USA Rochester, NY	Image Assessment & Specification
C	21/1/74	23/1/74	USA New-Orleans, LA	Integrated Optics
C	19/8/74	21/8/74	AUS Sydney	Optical Information Processing
C	26/8/74	30/8/74	JPN Tokyo	Optical Methods in Scientific & Industrial Measurements
C	1/4/75	/ /	FRA Paris	Optics of Guided Waves
C	1/4/75	/ /	GBR Glasgow	Engineering Use of Coherent Optics
G	28/8/75	29/8/75	CZE Praha	ICO-10
C	1/8/76	/ /	ISR Jerusalem	Applications of Holography & Optical Data Processing
C	1/9/76	/ /	DEU München	Lasers & Applications
C	1/12/76	/ /		Submillimeter Waves
C	13/6/76	16/6/76	DEU Aalen	100 Years of Abbe's Theory
C	1/10/77	/ /	FRA Strasbourg	European Conference on Optics in Metrology
C	1/3/78	/ /		Submillimeter Waves
G	11/9/78	14/9/78	ESP Madrid	ICO-11

C	4/8/80	8/8/80	MEX	Ensedana, BC	Optics in Four Dimensions
C	31/5/80	4/6/80	USA	Oakland, CA	International Lens Design Conference
C	18/11/80	21/11/80	HUN	Budapest	Optika '80
S	7/9/81	11/9/81	AUT	Graz	Optics in Biomedical Sciences
G	31/8/81	5/9/81	AUT	Graz	ICO-12
C	4/7/83	4/7/83	JPN	Kobe	4th Top. Meeting on Gradient Index Optical Imaging Systems
C	6/4/83	8/4/83	USA	Cambridge, MA	10th Int'l Optical Computing Conference (IOCC)
T	6/4/83	9/4/83	FRA	Paris	3rd Int'l. Top. Meeting on Photoacoustic Spectroscopy
C	7/6/83	10/6/83	HUN	Budapest	Optika '83
C	13/8/84	17/8/84	USA	Madison, WI	1984 International Conference on Luminescence
S	15/8/84	17/8/84	AUS	Melbourne	Progress in Optical Physics
S	15/8/84	17/8/84	NZL	Canterbury	Information Processing in Optics
G	20/8/84	24/8/84	JPN	Sapporo	ICO-13 Optics in Modern Sciences & Technology
S	27/8/84	28/8/84	JPN	Tsukuba	Post Congress Meeting
C	10/9/84	11/9/84	ITA	Firenze	1984 IEEE Int'l Workshop on Integr. Optical & Rel. Techn.
C	26/9/85	27/9/85	ITA	Palermo	6th Topical Meeting on Gradient-Index Optics
C	28/10/85	1/11/85	DEU	Dresden	5th Int'l Conference on Lasers & Their Applications
T	11/6/85	14/6/85	FIN	Espoo	Image Science '85
C	6/7/86	11/7/86	ISR	Jérusalem	Int'l Optical Computing Conference (IOCC)
T	16/7/86	18/7/86	FRA	Paris	Image Detection and Quality
C	7/7/87	9/7/87	CZE	Praha	Optics in Solar Energy
G	24/8/87	28/8/87	CAN	Québec	ICO-14
S	31/8/87	1/9/87	USA	Cambridge, MA	Directions in New England Optics
T	30/8/88	2/9/88	FRA	Toulon	ICO Topical Meeting on Optical Computing
C	13/9/88	16/9/88	HUN	Budapest	Optika '88
C	19/12/88	21/12/88	ISR	Tel-Aviv	6th Meeting of Optical Engineering
C	2/10/89	6/10/89	CZE	Praha	Applied Optics in Solar Energy III
C	11/9/89	13/9/89	GBR	Bath	2nd Int'l Conference on Holographic Systems & Components
G	5/8/90	10/8/90	DEU	Garmisch-Partenkirchen	ICO-15 Optics in Complex Systems
C	21/5/90	25/5/90	USA	Anaheim, CA	International Quantum Electronics Conference
T	8/4/90	12/4/90	JPN	Kobe	1990 Int'l Topical Meeting on Optical Computing
C	22/8/90	25/8/90	CHN	Beijing	Int'l Conference on Opto-Electronic Science & Engineering, ICOESE
C	22/10/90	27/10/90	SGP	Singapore	Asia Pacific Conference on Optical Technology 1990
C	28/10/90	2/11/90	DEU	Aachen	Int'l Conf on Physical Concepts of Materials for Novel Optics
C	11/6/90	14/6/90	USA	Monterey, CA	International Lens Design Conference

CS 12/8/90	16/8/90	DEU	Garmisch-Partenkirchen	International Conference on Optics in Life Sciences					
C	17/3/91	23/3/91	PRT	Porto	Optics in Biomedicine				
C	14/5/91	17/5/91	POL	Szlarska Poreba	Diffraction Optical Elements D.O.E. 91				
T	27/8/91	30/8/91	ITA	Firenze	Atmospheric Volume & Surface Scattering & Propagation				
C	16/9/91	18/9/91	GBR	Edinburgh	3rd Int'l Conference on Holographic Systems				
C	28/9/91	1/10/91	RUS	Leningrad	Int'l Conference on Education in Optics				
C	15/10/91	17/10/91	CHN	Beijing	Int'l Conference on Photodynamic Therapy				
XE27/01/92	21/02/92	ITA	Trieste	The Physics & Technology of Lasers & Optical Fibers, ICTP	J.C. Dainty	0	0	0	
E	19/05/92	22/05/92	CZE	Prague	Workshop on Digital Holography	C.H.F. Velzel	0	0	0
T	28/06/92	02/07/92	BLR	Minsk	ICO Topical Meeting on Optical Computing	J.W. Goodman	5000	0	0
C	03/08/92	07/08/92	USA	Seattle, WA	Int'l Meeting on Wave Propagation in Random Media	A. Consortini	2000	0	0
C	21/09/92	23/09/92	ESP	Barcelone	3rd Spanish & 1st Latin American Optical Congress	M.J. Yzuel	0	2000	0
C	04/10/92	10/10/92	DEU	Münster	Optics Within Life Sciences OWLS II	F. Lanzl	0	2000	0
E	14/12/92	16/12/92	ISR	Tel-Aviv	8th Meeting of Optical Engineering in Israel	A. Consortini	0	0	0
XC22/02/93	12/03/93	ITA	Trieste	Winter College on Optical Systems	J.C. Dainty	0	0	0	
CS 01/08/93	03/08/93	DEU	Garching bei München	Adaptive Optics	J.C. Dainty	0	0	0	
G	09/08/93	13/08/93	HUN	Budapest	ICO-16 Optics for High Technology	G. Lupkovics	6000	6000	0
TS	16/08/93	19/08/93	HUN	Pecs	Education & Training in Optics	J.C. Dainty	2000	0	0
T	04/04/94	08/04/94	JPN	Kyoto	ICO Topical Meeting on Frontiers in Information Optics	P. Chavel	0	3000	0
E	10/04/94	14/04/94	JPN	Tokyo	OWLS III	A. Consortini	0	0	0
XC22/05/94	10/06/94	IRN	Zanjan	School on Nonlinear Optics and Optical Design	C.H.F. Velzel	0	0	0	
XC08/08/94	27/08/94	GHA	Cape Coast	School on Lasers	J.C. Dainty	1000	0	0	
C	15/08/94	18/08/94	CHN	Beijing	ICOESE 94, Optoelectronic Science and Engineering	Mu G.G.	0	0	0
E	17/08/94	30/08/94	RUS	Moscow	ICO Int'l Conference on Optical Memory and Neural Networks	P. Chavel	0	0	0
C	22/08/94	25/08/94	GBR	Edinburgh	Optical Computing OC'94	J.W. Goodman	0	2000	0
E	24/10/94	26/10/94	ISR	Tel Aviv	9th Meeting on Optical Engineering in Israel	A. Consortini	0	0	0
XT21/02/95	10/03/95	ITA	Trieste	ICTP/ICO Winter College on Optics	A. Consortini	1000	0	0	
E	03/04/95	06/04/95	NLD	Delft	European Conf. on Integrated Optics ECIO 95	P. Chavel	500*	0	0
E	15/05/95	19/05/95	UKR	Chernivtsy	Int'l Conf. on Holography and Correlation Optic	P. Chavel	300*	0	0
E	09/07/95	10.07/95	USA	San Diego, CA	1995 Int'l Conf. on Education in Optics	R.R. Shannon	0	0	0
E	23/08/95	26/08/95	CZE	Prague	Photonics '95	C.H.F. Velzel	0	0	0
C	18/09/95	22/09/95	MEX	Guanajuato	II Reunion Iberoamericana de Optica	M.J. Yzuel	1500	1500	0
E	25/09/95	26/09/95	BEL	Liège	3rd Int'l Workshop on Optical Fiber Measurement and Control	P. Chavel	0	0	0
E	20/11/95	25/11/95	CUB	la Habana	V Latin American Meeting on Optics, Lasers and Applications	M.J. Yzuel	300*	0	0
C	06/01/96	14/01/96	SDN	Khartoum	4th Int'l Workshop on the Physics and Modern Appl. of Lasers	J.C. Dainty	1000		

C	21/04/96	25/04/96	JPN	Sendai	OC'96 Int'l Topical Meeting on Optical Computing	P. Chavel	800*		
E	09/07/96	13/07/96	DEU	Münster	OWLS IV, Optics Within the Life Sciences	C.H.F. Velzel	0	0	0
G	18/08/96	24/8/96	KOR	Taejon	ICO 17 Optics for Science and New Technology	S.S. Lee	6000	6000	0
E	26/08/96	28/08/96	CHN	Nanjing	Int'l Conf. on Holography and Optical Information Processing	G. Sincerbox	1200*		
E	27/08/96	29/08/96	JPN	Wako	Int'l Workshop on Interferometry	C.H.F. Velzel	0	0	0
C	10/12/96	14/12/96	IND	Madras	Photonics '96	T. Asakura	1000*		
E	02/03/97	06/03/97	ISR	Jerusalem	10th Meeting on Optical Engineering in Israel	A. Consortini	0	0	0
E	16/03/97	21/03/97	USA	Lake Tahoe, NV	OC'97 Optics in Computing (OSA)	P. Chavel	0	0	0
E	02/04/97	04/04/97	SWE	Stockholm	ECIO'97 European Conf. on Integrated Optics	A.T. Friberg	0	0	0
E	20/05/97	23/05/97	UKR	Chernivtsy	3rd Int'l Conf. on Correlation Optics	K. Macukow	1000*0		0
C	09/06/97	13/06/97	RUS	Shatura	Int'l Workshop on Adaptive Optics for Industry and Medicine	F. Merkle	1000*		
E	07/07/97	09/07/97	FIN	Savonlinna	EOS Topical Meeting on Diffractive Optics (DO'97)	C.H.F. Velzel	0	0	0
T	19/08/97	22/08/97	NLD	Delft	ICO 50th Anniversary, Education and Training in Optics (ETOP)	C.H.F. Velzel	2000*	5000	0
E	26/08/97	30/08/97	RUS	Moscow	Optical Information Science and Technology (OIST'97)	P. Chavel	0	0	0
E	09/09/97	12/09/97	ROM	Bucharest	RomOpto '97	K. Macukow	0	0	0
XT	09/02/98	27/02/98	ITA	Trieste	ICTP/ICO Winter College on Optics	T. Asakura	1000	0	0
E	15/06/98	16/06/98	JPN	Tokyo	Int'l Workshop on Optics Design & Fabrication (ODF'98)	R.R. Shannon	0	0	0
C	17/06/98	20/06/98	BEL	Bruges	OC'98 Optics in Computing	P. Chavel	1000*	2500	0
T	03/08/98	06/08/98	CHN	Tianjin	Optics for Information Infrastructure (OII'98)	S.S. Lee	3000*	0	0
E	14/09/98	17/09/98	HUN	Budapest	Optika '98	F. Merkle	0	0	0
C	28/09/98	02/10/98	COL	Cartagena de Indias	III RIAO / VI OPTILAS '98	A. Consortini	2000	0	0
E	13/10/98	16/10/98	GRC	Crete	OWLS V, Biomed. and Culture in the Era of Modern Optics and Lasers	C.H.F. Velzel	2000*	0	0
C	09/12/98	12/12/98	IND	Dehradun	Int'l Conf. of Optics & Optoelectronics (ICOL-98)	T. Asakura	1000	0	0
E	21/06/99	23/06/99	CZE	Prague	Photonics '99	R. Dändliker	1000*0		0
CS	28/07/99	30/07/99	MEX	Cancun Q.R.	Education and Training in Optics and Photonics (ETOP'99)	A. Guenther	3000*0		0
ES	28/07/99	30/07/99	MEX	Cancun Q.R.	Light for Life	R.R. Shannon	2000*0		0
G	02/08/99	06/08/99	USA	San Francisco, CA	ICO 18 Optics for the Next Millennium	T. Asakura	5000*	5000	0
E	23/08/99	25/08/99	DEU	Jena	EOS Topical Meeting on Diffractive Optics (DO'99)	J. Ojeda-Casta.	0	0	0
E	30/08/99	01/09/99	DEU	Mainz	3rd Int'l Conf. on Micro Opto Electro Mechanical Systems (MOEMS'99)	F. Merkle	0	0	0
E	09/11/99	11/11/99	ISR	Tel Aviv	11th Int'l Conf. on Electro-Optics and Microelectronics in Israel	A.A. Friesem	0	0	0
XT	07/02/00	25/02/00	ITA	Trieste	ICTP/ICO Winter College of Optics and Photonics	A.T. Friberg	1500	0	0
C	22/02/00	24/02/00	AUS	Sydney	OWLS VI Down Under	J. Ojeda-Casta.	2500*0		0
T	10/04/00	14/04/00	SEN	Dakar	Optical Science and Applications for Sustainable Development	P. Chavel	5000	0	0
E	04/06/00	05/06/00	HUN	Budapest	Dennis Gabor Memorial Conference	Dändl./Consort.	0	0	0
C	18/06/00	23/06/00	CAN	Quebec	OC 2000 Optics in Computing	P. Chavel	0	0	1000

E	04/09/00	07/09/00	ROM	Bucharest	RomOpto 2000	P. Chavel	0	0	0
E	15/11/00	17/11/00	JAP	Tokyo	Int'l Conf. on Optical Design and Fabrication	R.R. Shannon	0	0	0
E	12/12/00	15/12/00	TWA	Hsinchu	Int'l Photonics Conference (IPC 2000)	G. Righini	0	0	0
E	09/01/01	11/01/01	USA	Lake Tahoe, NV	OC 2001 Optics in Computing (OSA)	P. Chavel	0	0	0
E	10/05/01	13/05/01	UKR	Chernivtsy	5th Int'l Conf. on Correlation Optics	K. Macukow	1000*	0	0
E	12/08/01	24/08/01	IRN	Tabriz	Int'l Summer College on Optics and Photonics	A.T. Friberg	1500	0	0
C	03/09/01	07/09/01	ARG	Tandil	IV RIOA / VII OPTILAS	J. Ojeda-Casta.	2000*	0	0
CT	27/11/01	30/11/01	SIN	Singapore	6th Int'l Conf. on Education and Training in Optics and Photonics	Asakura/Shepp.	2000*	0	0
E	28/01/02	02/02/02	CUB	Havana	Photosciences 2002	Guenther/Calvo	0	0	0
XT	18/02/02	01/03/02	ITA	Trieste	ICTP/ICO Winter College on Ultrafast Nonlinear Optics	A.T. Friberg	1500	0	0
C	08/04/02	11/04/02	TWA	Taipei	OC 2002 Optics in Computing	H. Arsenault	1000*	0	1000
C	26/05/02	29/05/02	CZE	Prague	Photonics Prague 2002	T. Tshudi	1000*	0	0
E	02/06/02	06/06/02	CAN	Quebec	Photonics North (ICAPT 2002)	H. Arsenault	0	0	0
E	08/07/02	12/07/02	CAN	Quebec	Int'l Laser Radar Conference (ILRC21)	A. Guenther	1000*	0	0
E	22/08/02	28/08/02	USA	Hawaii	Astronomical Telescopes and Instrumentation Symposium (SPIE)	J. Breckinridge	0	0	0
G	25/08/02	31/08/02	ITA	Florence	ICO 19 Optics for the Quality of Life	A. Guenther	7000*	10000	5000
CS	01/09/02	05/09/02	CHE	Luzern	OWLS VII Environmental and Bio-Photonics for the New Millennium	C.C. Righini	2500*	2500	0
E	25/09/02	29/09/02	POL	Wroclaw	Adv. Study Course on Optical Chemical Sensors (ASCOS 2002)	Chalasinska-M.	1000*	0	0
E	30/10/02	01/11/02	JAP	Tokyo	3rd Int'l Conf. on Optics-Photonics Design and Fabriation	R.R. Shannon	0	0	0
E	21/11/02	23/11/02	ROM	Bucharest	ATOM'02 Adv. Topics in Optoelectronics Mirco & Nanotechnologies	H. Arsenault	1000	0	0
C	11/12/02	17/12/02	TUN	Tunis	6th LAM Workshop on Laser Physics and Applications	A. Guenther	1500	1000	0
XT	10/02/03	21/02/03	ITA	Trieste	ICTP/ICO Winter College on Bio-Photonics	A.T. Friberg	1500	0	0
E	25/05/03	29/05/03	CAN	Montreal	Photonics North 2003	H. Arsenault	0	0	0
E	18/06/03	20/06/03	USA	Washington, DC	OC 2003 Optics in Computing (OSA)	M. Yzuel	0	0	0
T	30/06/03	03/07/03	FIN	Polvijärvi	Polarization Optics	A. Friesem	3000*	0	0
E	15/07/03	16/07/03	CUB	Havana City	Tecnolaser 2003	M. Calvo	0	0	0
E	08/09/03	11/09/03	ROM	Constanta	RomOpto 2003	G.C. Righini	1000	0	0
E	16/09/03	19/09/03	UKR	Chernivtsi	6th Int'l Conf. on Correlation Optics	M. Kujawinska	1000	0	0
CT	06/10/03	08/10/03	USA	Tucson, AZ	7th Int'l Conf. on Education and Training in Optics and Photonics	A. Guenther	3000*	0	0
E	19/10/03	24/10/03	DEU	Münster	Int'l Workshop on Adaptive Optics (4. IWAOIM)	G. Jin	0	0	0
E	20/10/03	24/10/03	RUS	St. Petersburg	Optics 2003	M. Calvo	0	0	0
E	01/12/03	04/12/03	IND	New Delhi	Int'l Conf. on Laser Applications & Optical Metrology (ICLAOM'03)	Yamag./Schudi	0	0	0
XT	02/02/04	13/02/04	ITA	Trieste	ICTP/ICO Winter College on Interferometry	A.T. Friberg	1500	0	0
C	21/04/04	23/04/04	CHE	Engelberg	OC 2004 Optics in Computing	M. Yzuel	2000*	0	0

T	12/07/04	15/07/04	JAP	Tokyo	Optics & Photonics in Technology Frontier (ICO'04)	I. Yamaguchi	0	0	0
ES	26/09/04	30/09/04	CUB	Havana City	Optics, Life and Heritage	Gaggioli/Bally	1000	0	0
R	03/10/04	08/10/04	VEN	Porlamar	V RIAO / VIII OPTILAS	Calvo/Gaggioli	3000*	0	0
E	18/10/04	21/10/04	RUS	St. Petersburg	Basic Problems in Optics (BPO'04)	M. Calvo	0	0	0
C	28/11/04	01/12/04	AUS	Melbourne	OWLS VIII Biophotonics Down Under	G. v. Bally	2000*	0	0
C	06/12/04	10/12/04	CAM	Douala	7th LAM Workshop on Physics and Mod. Applications of Lasers	A. Wahué	1500	0	0
XT	07/02/05	18/02/05	ITA	Trieste	ICTP/ICO Winter College on Optics and Photonics in Nanosciences	A. Wagué	1500	0	0
E	14/02/05	18/02/05	MEX	Merida, Yucatan	8th Int'l Symposium on Laser Metrology (LM-2005)	M. Kujawinska	1000*	0	0
EX	26/03/05	04/04/05	TUN	Monastir	Active Learning in Optics and Photonics	A. Wagué	1000	0	0
C	02/05/05	06/05/05	FRA	Besancon	Int'l Conf. on Squeezed States and Uncertainty Relations (ICSSUR'05)	R. Dändliker	1250*	0	0
C	08/05/05	13/05/05	ESP	Granada	10th Congress of the Int'l Colour Association (AIC Colour 05)	M. Calvo	1500*	0	0
E	06/06/05	08/06/05	USA	Charlotte, NC	Information Optics 2005 (OSA)	M. Yzuel	0	0	0
C	08/06/05	11/06/05	CZE	Prague	Photonics Prague 2005	T. Schudi	1500*	0	0
G	21/08/05	26/08/05	CHN	Changchun	ICO 20 Challenging Optics in Science and Technology	R. Dändliker	7000*	10000	5000
E	06/09/05	09/09/05	UKR	Chernivtsi	7th Int'l Conf. on Correlation Optics	M. Kujawinska	1250	0	0
E	05/10/05	07/10/05	CAN	Quebec	MUSCLE XIV (Multiple Scattering Lidar Exp.)	A.T. Friberg	0	0	0
CT	17/10/05	20/10/05	RUS	St. Petersburg	Meeting on Optoinformatics	M. Calvo	1000*	0	0
CT	24/10/05	26/10/05	FRA	Marseille	8th Int'l Conf. on Education and Training in Optics and Photonics	A. Guenther	3000*	0	0
C	12/12/05	15/12/05	IND	Dehradun	Int'l Conference on Optics & Optoelectronics (ICOL-2005)	G.C. Righini	2000*	0	0

SELECTED PAPERS FROM ICO XIX

Guest Editors:

Anna Consortini

*Universit`a degli Studi di Firenze
Italy*

Giancarlo C Righini

*Nello Carrara Institute of Applied Physics, CNR,
Firenze, Italy*

ICO XIX was the 19th in a series of triennial congresses promoted by the International Commission for Optics (ICO) and held in conjunction with the general assembly of the organization. ICO is an affiliated commission of the International Union of Pure and Applied Physics (IUPAP), and was created in 1947 with the object of contributing on an international basis to the progress and diffusion of knowledge in optics. ICO I, the first official congress held in Delft (The Netherlands) in July 1948, saw the participation of 44 delegates from 11 countries. ICO XIX, held in Florence (Italy) in August 2002, was attended by more than 400 participants from most of the 43 Territorial Committees which are current members of ICO. The triennial congress moves quite regularly from one continent to another; thus, the previous one (ICO XVIII) was held in San Francisco (USA) in 1999, and the next one (ICO XX) will be held in Changchun, a city in northern China, in 2005.

Optics is growing up fast and healthily. To quote John N Howard, founding editor of *Applied Optics*, ‘Optics is almost unique in being both a field of challenging scientific study and also an important tool that can be applied to many other fields of science and technology.’ A confirmation of that comes from the results of a poll on the most beautiful physics experiment, published in *Physics World* in September 2002. The top place was awarded to the application of Young’s double-slit experiment to the interference of single electrons (demonstrated by C Jonsson in 1961), while two ‘pure’ optical experiments ranked 4th and 5th—respectively, Newton’s decomposition of sunlight with a prism (which dates back to around 1665) and Young’s original light interference experiment (around 1801).

Similarly, if we look to the years since the founding of the ICO, many of the Nobel Prizes in physics have been awarded for works in optics and spectroscopy, including, to mention just a few winners, Zernike and Gabor in image formation and holography, Townes, Kastler, Schawlow and Bloembergen in lasers and spectroscopy, Mulliken, Herzberg and Polanyi in chemical spectroscopy, Wald, Granit, Hartline and Cormack in medical optics, and more recently the 1997 prize to Chu, Cohen-Tannoudji and Phillips for laser cooling and trapping of neutral atoms, and the 2001 prize to Alferov and Kroemer for semiconductor optoelectronics.

Thus, it is clear that a congress which, according to ICO traditions, is open to contributions in every branch of optics, may attract a large number of contributions of great scientific and/or technical relevance in quite different areas.

A special theme is generally selected for each triennial congress to enlighten particular aspects of optical science and technology. The theme for ICO XIX was ‘Optics for the Quality of Life’, but the 290 oral presentations (including invited lectures and ICO prize winners’ lectures) and the 240 posters covered a much wider area, being subdivided into the following topical sessions:

- Boundaries, traps and vortices
- Computing and communications
- Education in optics
- Femtosecond optics
- Fibre optic devices
- Guided waves and microoptics
- Holography
- Images and image processing
- Lasers and applications
- Nonlinear optics and applications
- Optical and innovative microscopy
- Optical design
- Optical instruments and systems
- Optical materials
- Optical physics, interference and applications
- Optics for biology and medicine
- Optics in art conservation
- Optics in the atmosphere and in space
- Optics in information systems
- Photonic crystals
- Photonic glasses
- Photorefractive materials and applications
- Random media and statistical optics
- Sensing and metrology
- Spectroscopy.

Two-page summaries of the accepted presentations were collected in *SPIE Proceedings*, volume 4829.

This special issue of *Journal of Optics A: Pure and Applied Optics* contains a selection (less than one tenth of those presented at the Congress) of papers based on presentations given at ICO XIX or, in one or two cases, related works by congress participants. Despite the rigorous selection criteria necessary to maintain an optimum size of this special issue (for which we express our regret to the authors of those papers which did not rank in the top group), we believe that this issue is well representative of the current work in optics, both on a topical and a geographical basis.

We take this occasion to thank the sponsors of the Congress, who contributed to make ICO XIX a successful event, the editorial office of Institute of Physics Publishing, and in particular Claire Bedrock whose hard work made this issue feasible, all the authors for their valuable contributions and, last but not least, the members of the Advisory and Program Committees as well as all the reviewers for their dedicated work.



POLARIZATION OPTICS 2003, FINAL REPORT



The ICO Topical Meeting on Polarization Optics was organized in Polvijärvi, Finland, June 30 – July 3, 2003. It was preceded by the ICO Bureau meeting in Joensuu, Finland. The conference and holiday centre “Huhmari”, which was the venue of the conference, is located some 30 km from Joensuu in eastern Finland.

The program committee was chaired jointly by Asher A. Friesem (Israel) and Jari Turunen (Finland), while Timo Jääskeläinen (Finland) acted as the chairman of the local organizing committee. The practical arrangements were the responsibility of the Department of Physics of the University of Joensuu.

The conference was endorsed the International Union of Pure and

Applied Physics (IUPAP), as well as by European Optical Society (EOS), Finnish Optical Society (FOS), Optical Society of America (OSA), and the International Society for Optical Engineering (SPIE). The conference and the associated ICO Bureau meeting were sponsored financially by the following organizations and companies:

- International Commission for Optics
- Academy of Finland
- The Delegation of the Finnish Academies of Science and Letters
- Finnish Optical Society
- Nokia Research Centre
- Honeywell
- Modilis Ltd
- Town of Joensuu
- County of Polvijärvi

The sponsorship money from ICO (USD 3000) was used to waive the registration fees of selected delegates from less favoured regions, while the money received from the Academy of Finland (EUR 6000) was used to waive the registration and accommodation fees of several invited speakers. Money received from other sources was shared between these two purposes, and it greatly helped to keep the registration fees at low levels (standard fee EUR 325, EOS members 285, full-time students 250). The fees included, e.g., all meals, free transportation to the conference site, welcome reception and conference dinner, as well as the conference excursion). These low fees were possible only because of the voluntary work of many students of the hosting organization; no costly “professional” services were needed. The accommodation fees at Huhmari were also very reasonable, ranging from EUR 44 to EUR 65 per night in a comfortable hut with free use of all the bath/pool/sauna facilities at Huhmari. In conclusion, the local organizers made every reasonable effort to make it possible for delegates from less favoured territories to participate in the conference.

The conference attracted 116 participants (including 23 full-time students) and 19 accompanying persons from 26 countries:

Australia	1	Canada	1	China	4
Cuba	1	Estonia	2	Finland	38
France	7	Germany	2	India	1
Ireland	1	Israel	4	Italy	3
Japan	7	Latvia	7	Lithuania	1
Mexico	1	Netherlands	4	New Zealand	1
Russia	4	Senegal	1	South Korea	1
Spain	9	Sweden	3	Switzerland	2
United Kingdom	3	USA	7		

Before the start of the scientific program of the conference on Monday, June 30, a welcome reception was offered on Sunday evening. Food and drinks were plentiful and the atmosphere grew rather hilarious during the three-hour event!

The scientific program started with the ICO Galileo Galilei Award Lecture by Rashid Ganeev. This was followed by the plenary talk of Emil Wolf on Young's classic interference experiment, all aspects of which are, as yet, not explained. Altogether, 12 oral sessions were held in single-session format, and they were divided into sessions focused on linear, nonlinear, and quantum polarization optics. The key concept "polarization optics" was defined very broadly; in effect all contributions somehow related to the vectorial nature of light were welcome. One of the sessions was devoted to welcome the three Baltic States, Estonia, Latvia, and Lithuania, as new members of ICO. In this session a renowned member of the optics community of each Baltic country gave an extended talk. The total number of talks was approximately 50. In addition, the program contained a poster session, which also featured approximately 50 contributions.

The following special presentations were given:

ICO Galileo Galilei Award Presentation (year 2002):

Rashid Ganeev (Uzbekistan), "Frequency conversion of polarized radiation in various media"

Plenary lecture: Emil Wolf (USA), "Young's interference experiment two hundred years later"

Invited talks:

- Garish S. Agawam (India), "Controlling polarization by coherent control of anisotropies"
- Sir Michael Berry (UK), "Polarization singularities in crystal optics"
- Robert Boyd (USA), "Polarization properties of nonlinear optical interactions"
- Dirty Bunker (USA), "Resonant nonlinear magneto-optical effects in atoms"
- René Dandier (Switzerland), "Measuring 3-D polarization with scanning optical probes"
- Daniel James (USA), "Polarisation photon entanglement"
- Erez Hasman (Israel), "Space-variant polarization-state manipulation by use of computer-generated subwavelength gratings"
- Makoto Kuwata-Gonokami (Japan), "Polarization sensitive nonlinear spectroscopy of correlated electron systems and semiconductors"
- Philippe Lalanne (France), "Bloch-mode effective index of subwavelength gratings: application to diffractive optics"
- Emmett Leith (USA), "Coherence methods for optical sectioning"
- Adolf Lohmann (Germany), "Descartes-style duality in (polarization) optics"
- Joseph Zyss (France), "Polarization effects in molecular nonlinear optics"

The conference received considerable publicity in local media. The highlight of the press conference was the interview of Professors Emmett Leith and Adolf Lohmann, who told the media about the birth of holography and diffractive optics, respectively. Both large optical holograms fabricated in Joensuu by the company Holotek Oy and diffractive elements fabricated at the University of Joensuu and at Nanocomp Ltd (Joensuu) were on display, and they received considerable interest among reporters.

The social program of the conference was extensive, giving the delegates an opportunity to form new contacts in a relaxed atmosphere. Firstly, all meals were on purpose self-service type, with a wide selection of food and no fixed seating. Monday and Wednesday afternoons were free of technical sessions for a few hours, enabling the delegates to participate in the many sports and recreational activities offered by Huhmari. On Tuesday afternoon there was an option (used by many) to visit the Puntarikoski Castle, which is being constructed by the conference co-chair Jari Turunen, and to see features such as the guillotine and the torture chamber. On

Tuesday afternoon a conference excursion was organized to the Koli Mountain, which is often referred to as the “national scenery” of Finland. After the excursion there was a special Midnight Session, in which a representative from Nokia presented an informal talk on the secrets of the company’s success story. This session was held outdoors, being accompanied by a grilled-sausage party, since there is no real night Joensuu in mid-summer: the sun barely sets below the horizon for a short while. On Wednesday evening, after the conference dinner, an orchestra played traditional Finnish dancing music, including the Finnish version of tango. Immediately after the conference, on Friday, July 4, there was an opportunity to visit the Department of Physics of the University of Joensuu and to see, e.g., the lithographic facilities and the colour research labs. After that several delegates witnessed a public PhD defense in the unique Finnish style, with the candidate, the opponent, and the custodian all wearing tailcoats.

In the beginning of the conference the weather looked a bit gloomy, but it soon turned out great, with sunny and warm weather that in fact lasted in Finland for the rest of July. Several delegates stayed in Finland for some time after the conference on vacation, and they probably did not curse the weather!

Asher A. Friesem and **Jari Turunen**, Conference co-chairs



5TH IBERO-AMERICAN MEETING ON OPTICS, AND 8TH LATIN-AMERICAN MEETING ON OPTICS, LASERS AND THEIR APPLICATIONS—RIAO/OPTILAS 2004

(Porlamar, Venezuela, 3-8 October 2004: the great success of optics in Latin-America)



The RIAO/OPTILAS 2004 took place with great success the first week of October 2004 on the beautiful Island of Margarita (Venezuela). The meeting ran as an ICO Regional Meeting with the support and co-sponsorship of the International Society for Optical Engineering SPIE, the Optical Society of America OSA, the Abdus Salam International Centre for Theoretical Physics ICTP, the Latin-American Centre for Physics CLAF and other important international organizations and local institutions.

The meeting gathered 329 participants coming mainly from Ibero-American countries. However, more than 60 participants came from countries of the rest of the world showing the growing international character of this regional meeting. The conference demonstrated the maturity and increasing visibility of the optical research being conducted in the Ibero-American region.



(21 oral and 34 posters), Optical Devices (15 oral and 22 posters), Optoelectronic Devices (27 oral and 15 posters), Spectroscopy (4 oral and 33 posters), Physical Optics (14 oral and 29 posters), Atmospheric Optics (1 oral and 8 posters), Colour, Vision and Radiometry (7 oral and 15 posters), Image Processing (12 oral and 20 posters), Diffractive Optics (7 oral and 12 posters), Educations on Optics (5 oral and 3 posters) and Thin Films (4 oral and 12 posters). There were 12 cancellations and 23 no-shows. Attendees in terms of country of origin were: Argentina 41, Brazil 28, Canada 3, Colombia 37, Cuba 3, Chile 6, France 10, Germany 2, Israel 1, Italy 3, Japan 1, Korea 1, Mexico 66, Poland 1, Peru 5, Russia 1, Spain 28, Sweden 1, Switzerland 1, Trinidad Tobago 1, Turkey 1, USA 11 and Venezuela 77.

Remarkable was the invited talk “Manipulating Light with Atoms” given by Dr. Claude Cohen-Tannoudji, 1997 Nobel Prize on Physics. The 2003 ICO Galileo Galilei Award ceremony took place during the program of the RIAO/OPTILAS 2004 on Tuesday October 5. This time the Galileo Galilei Prize was awarded to Dr. Cid B. de Araujo, from University of Pernambuco, Brazil, who delighted the audience with his invited talk about “Optical Nonlinearities of Nanostructured Materials”. Other invited speakers were: Dr. G. Stegeman, from the School on Optics (USA), Dr. E. Van Stryland, Director of the School of Optics (USA) and Vice-President of the OSA (USA), Dr. N. Melikechi from the Applied Optics Centre of Delaware (USA), Dr. P. Meystre from the University of Arizona (USA), Dr. C. Flytzanis from l'École Normale (France), Dr. A. Lappa from the Chelyabinsk University (Russia), Dr. P. Andrés from the Valencia University (Spain), Dr. S. Braslavsky from the Max Planck Institute (Germany), Dr. J. M. Nunzi and X. Nguyen Phu from the Angers University (France), Dr. M. Kujawinska from the Warsaw University and SPIE Vice-president (Poland), Dr. A. Waguè from the Dakkar Institute of Atomic Physics (Senegal) and Dr. Morandotti from the INRS-EMT (Canada). The SPIE President Dr. J. Bilbro, the SPIE Executive Director Dr. E. Arthurs and other important SPIE directors participated in the activities of the RIAO/OPTILAS 2004.

A Forum on the possibilities of international cooperation for Ibero-America was also organized with the presence of distinguished directors from SPIE, OSA and ICO. The 3rd School on Optics and Photonics was also included into the program with participation of 100 students from all over Ibero-America. Eight talks of 45 minutes each were presented during the School.

During the General Assembly a recognition Plate was awarded to Dr. G. Denardo from the ICTP for his continuing support of scientific activities in developing countries. The Plate was received by Dr. A. Consortini in representation of the Italian scientific community.

The RIAO/OPTILAS 2004 was also honoured to host the ICO Board of Directors meeting, which took place on October 9 and 10.

Proceedings: Extended proceedings (from 4 to 7 pages), were published by the International Society for Optical Engineering SPIE on a CD ROM version (volume 5622, 2004, A. Marcano O. and J. L. Paz, editors, 1,567 pages containing 276 communications). **Grants:** 145 students were offered support to assist to the RIAO/OPTILAS 2004 on ICO, OSA, ICTP, Argentina Optical Territorial Committee and CLAF grants. 123 of them profited of these grants.

Finally, I would like to thank for the ICO support, the excellent Venezuelan Optical Committee (CVO) organization as well as the support of the other organizations and all participants of the RIAO/OPTILAS 2004.

Aristides Marcano, RIAO/OPTILAS 2004 Chairman.



ETOP 2003 STEERING/ ETOP LONG RANGE ADVISORY COMMITTEE MEETING

7 October 2003, Tucson, AZ

Present: Ari Friberg, Chair; Barry Shoop; Gloria Putnam

Committee Alternates: Arthur Guenther; Vengu Lakshminarayanan

Guests: Maria Calvo; Judy Donnelly; Steve Jacobs; Tamae Wong; Nick Massa; Kristin Mirabel; Liz Rogan; Aimee Gibbons; Grace Klonoski; Jason Briggs; Eugene Arthurs; Sheila Sandiford

Secretariat: Kathleen Robinson

1. **Call to order, Welcome and Introductions:** Friberg called the meeting to order at 4:43pm and asked everyone to introduce themselves.
2. **Approval of 2001 Draft Minutes:** Friberg called for corrections and discussion of minutes. Art Guenther requested that the acronym AFRSL ((last paragraph of item 3, Summary of ETOP 2001) be corrected to AFOSR. Correction noted. Minutes approved.
3. **Approval of Draft Agenda:** Friberg asked for amendments to agenda. None were offered and it was approved.
4. **History of ETOP Meeting:** Robinson passed out a summary of ETOP since 1988 (attachment A)
Rogan asked how application process worked in the past.
Shoop stated that in the past there were informal discussions about potential venues. Sometimes groups were asked to apply.
Guenther stated that past agreements were for the meeting to be in US every other time, and like other ICO meetings, not explicitly directed to developing nations.
Rogan asked if organizers try to get as many applications as possible.
Friberg stated that it was good to have several different venues apply, but not too many, to avoid disappointment.

Rogan asked if someone could supply financials from past meetings. Robinson stated that she might be able to pull some numbers together.

Friberg asked that we put this discussion on hold for later in the meeting (agenda item 8).

Guenther suggested people go to the ETOP online website for application guidelines if they have questions about how to apply.

ACTION: Robinson to provide Rogan with available financial data for past meetings.

5. **Summary of ETOP 2003:**

Briggs distributed a compendium of details (Attachment B)

Shoop pointed out aggressive marketing strategy resulted in the largest ETOP meeting to date: 109 papers; 113 registered; 23 countries represented. He also stated that the 2003 meeting managed to maintain its international flavour even though it was held in the US. Shoop did a lot of fund raising to get external support from organizations like IEEE/LEOS and government funds. Almost all funds received were spent on bringing in program participants from other countries.

Rogan thanked Shoop and Swartzlander for their fund raising efforts.

Wong asked if there will be proceedings for ETOP 2003.

Shoop explained that a new approach for the 2003 meeting was to deliver the papers electronically at the meeting. The object was to combine all of the ETOP papers with all of the Frontiers in Optics papers to get it to a much wider audience.

Wong asked if the papers would be available online and suggested that by monitoring hits on the site we could determine the success of the conference.

Shoop agreed that was a good idea and suggested that organizers consider links on the ETOP web page.

Wong suggested that teleconferencing might be a good format to consider for future ETOP meetings, especially keynote speakers.

Shoop agreed that it could work well but also could be expensive.

Friberg pointed out that there are some meetings already being web cast (in Russia for instance) and suggested that this may be something to discuss for the future. He stated that teleconferencing is good, but it is always better to be there in person.

Friberg asked if there will be any way to distinguish ETOP from Frontiers in Optics participants.

Shoop stated that there was not an easy way to do this but he did not perceive it as a problem.

Friberg stated that this is clearly the largest ETOP conference so far.

Arthurs stated that it highlights the importance of having a dedicated chair and staff.

Putnam asked how typical it is for 75% of the participants to be from the US. Friberg answered that the portion of US participants is lower when the meeting not in the US, but that each meeting is pretty unique.

6. **Discussion of Long Range Planning Committee make-up. Will current members/alternates continue? Will Friberg remain Chair?**

Friberg explained that the structure of the Long Range Planning Committee is long term, compared with the Steering Committee which exists for each individual ETOP meeting.

Friberg pointed out that in Singapore the LRPC decided it was not a good idea to increase the number of the LRPC members to more than 3, but agreed that each member should have an alternate. However guests are very welcome as the Committee likes to encourage as much input as possible at planning meetings.

Friberg named 3 LRPC members and their alternates:

ICO: Ari Friberg; alternate: Art Guenther

OSA: Barry Shoop; alternate: Vengu Lakshminarayanan

SPIE: Gloria Putnam; alternate: Pete Latham

Friberg stated that ICO will not be making a change.

Gloria Putnam announced that she is stepping down and will be replaced by Nick Massa with his alternate to be announced later.

OSA will determine their representative and alternate in the next month or so.

Friberg asked that these members be determined as soon as possible.

Friberg will remain the chair until 2004.

ACTION: OSA will name its LRPC member and alternate as soon as possible.

ACTION: SPIE will name its LRPC alternate as soon as possible.

7. Secretariat of ETOP—Will OSA assume this role or will it remain with SPIE?

Friberg explained that ETOP management is split into 2 parts; 1) the management of ETOP as a whole and 2) the management of the individual ETOP meetings. SPIE has been the manager as a whole since the first meeting in 1988. The MOU stated that SPIE would remain secretariat until 2003 and then it would be reviewed. Friberg stated that to ICO it makes no difference who is the secretariat of ETOP.

Rogan asked if there is there a secretariat fee?

Friberg stated that there was not.

Rogan and Arthurs agreed to discuss this matter offline.

Friberg agreed that it is appropriate for OSA and SPIE to make this decision, but asked that a decision on this matter be made some time soon.

ACTION: Rogan and Arthurs to decide which society will be the current Secretariat of ETOP (until 2006.)

8. Presentation of Applications to host 2005

Shoop passed out application from Mark Nantel to hold ETOP 2005 in Toronto with Photonics North. Friberg stated that it is the most complete application that has been submitted so far. In addition, Galieno Denardo, has expressed some interest by ICTP to host it in Trieste, Italy. There was an approach from a group in South Africa, but it was agreed that this was a convention centre trying to sell space and not a group associated with optics. Not the kind of application we are interested in.

Shoop said that he had been approached by Francois Flory of ENSPM, who had expressed an interest in hosting 2005 in Marseille, France. There is a cluster in Marseille.

Shoop said that he was concerned about having two ETOP meetings back to back in North America.

Friberg said that hopefully the next meeting will be in Europe. But he also said that no ETOP meeting had ever taken place in Canada.

Friberg stated that Denardo (acting director of ICTP) had sent a message to him about cooperation with ICO and the ETOP meeting would fall within the scope of that. Friberg encouraged him to submit a formal application. He feels that what we have received so far is confirmation they are still interested. Friberg also thought that maybe Scotland, either Glasgow or Edinburgh.

Friberg stated that France is an obvious choice to seriously consider for 2005, but he feels that the Canadian application is the most complete one we have ever gotten.

Arthurs recommended that we defer the decision because of incomplete information. There is a concern that we don't know about co-located meetings and also the major question of who will assume the financial risk, the Organizers or the Local Hosts?

Shoop said that we need to find local organizers who are willing to fund raise to offset the costs of the meeting. He stated that organizing 2003 was probably easier in 2003 because OSA was already going to be in Tucson with their annual meeting.

Friberg asked if it would be possible to organize ETOP like most ICO meetings where the organizers will commit to risk and SPIE and OSA will commit to providing a certain amount of funding.

Shoop restated the need to get local organizers who will commit to fund raising is critical.

Guenther stated that it is also critical to have organizers who can manage a meeting.

Wong said that Mark Nantel stated that he is supported by the Canadian government so perhaps they would provide some support for ETOP.

Friberg stated that ICTP could do the logistics organization, but not the program. If the meeting is in Trieste we need to find a strong program chair.

Friberg suggested that we defer the decision, until we get more information on France and Trieste.

Shoop suggested that we set a date and require proposals by that time.

Friberg suggested that we had a sort of chicken/egg problem in that what will suit the societies may not be what is best for ETOP, and what suits ETOP may not suit the societies. He asked if we should decide where it will be before we decide who will manage it.

Shoop asked if who manages the meeting depends on where the meeting will be held.

Arthurs stated that it had been decided that SPIE will manage 2005 and OSA will manage 2007.

Guenther asked if we were to hold a meeting in Trieste would we reach more of the kind of people we want to reach. He also stated that Toronto would be very hard venue for developing nations to get funding to attend.

Arthurs also suggested the possibility of Poland in 2005 because SPIE has a meeting in Warsaw and an active chapter who could organize.

Friberg suggested that if ETOP 2005 was in Trieste we could talk about co-locating with the Winter college.

Wong suggested that the committee could move things up to look at 2007, in addition to 2005 to give ETOP more planning time.

Friberg stated that we were trying to get as many applications as possible to this meeting

Shoop expressed some concern about getting Denardo involved because of his lack of response to requests to submit an application for 2005. He stated ETOP's need for very serious commitment and suggested that in Trieste we may need to find another chair.

Arthurs said that Denardo has been very busy as the Acting Director of ICTP, and that is probably the reason for his lack of response. Arthurs stated that Denardo has done a lot to further optics.

Friberg said that Denardo is running the winter colleges every year, so it would make sense that he could take care of logistics, but we would need someone else to organize the program. This is how the winter college is run. Having ETOP 2005 in Trieste would bring direct contacts to Africa, FSU, and perhaps gain some UNESCO funding. He asked, "How could we attract high tech people from US, Canada, even Europe?"

Friberg said that we could get the speakers but it would be harder to get participants.

Arthurs agreed.

Putnam asked if it was just a financial question.

Friberg asked, "Who is the meeting for?"

Steve Jacobs said that he would prefer Toronto in 2005; Nick Massa would prefer Italy.

Donnelly stated that the "best" location depends on the audience. If it is researchers then an exotic location is okay, but educators have no money for travel.

Arthurs expressed concern that the meeting in Canada is not certain.

Kolonski suggested that SPIE and OSA look to where meetings are happening in 2005 and choose from those.

Wong said that she liked the list of possible sponsors in Nantel's proposal, very impressive.

Friberg stated that it is by far the best application ETOP has ever had.

Arthurs asked if Toronto is a serious contender or if the rotation to Europe is a more important consideration.

Friberg stated that the most important thing was to have the best possible meeting, regardless of the place.

Shoop said he would prefer to see it in Europe in 2005 to make sure it reaches out to the developing nations.

Guenther and Shoop agreed that Marseille should be pursued, but they asked if there will be a meeting there with which ETOP can co-locate.

Putnam suggested that ETOP 2005 in Europe with a co-located meeting would be the optimum situation.

Friberg stated that we need a firm proposal by end of November. He asked if we go to Europe in 2005, then would we be back in Canada in 2007?

ACTION: Friberg will contact Denardo about Trieste application to host 2005.

ACTION: Shoop will contact Flory about the Marseille application to host 2005.

ACTION: Gloria will contact Nantel for definite location and dates to host 2005 in **Toronto**.

Arthurs stated that SPIE has a strong chapter in Poland and a meeting scheduled there for fall of 2005.

Shoop asked if Poland would be a good place to hold the meeting.

Friberg stated that the meeting has been in Russia, and that in Hungary it was a disaster. He stated that he is leery of Poland, that ETOP needs to be in a more high tech location.

Calvo asked if we would like to set up some kind of a deadline.

Friberg stated that we need to have all applications in by the end of November, so that we can have a decision for 2005 in December.

ACTION: Deadline for all ETOP 2005 applications will be November 30 2003.

ACTION: Long Range Planning Committee will decide venue and host for 2005 no later than 31 December 2003.

9. Discussion of 2005 Venue & Host

See discussion in Item 8.

10. Management of 2005 ETOP

Arthurs announced that SPIE and OSA agreed that SPIE would manage ETOP 2005.

11. ETOP 2005 Program Content

Arthurs suggested that e-LEARNING is an important topic and that there is some interesting work being done in Russia connecting CDs with laboratory demonstrations.

Shoop expressed concern because some of the folks who were invited for 2003, said they would not participate because nothing ever changes. He suggested that we really need to shake the community up a bit. We need to get details in metrics, maybe have some kind of a panel.

Guenther said something about a Kilarney & Stanford teleconference, and asked if something like this be possible for 2005.

Massa suggested that instructional strategies for e-learning would be a good topic.

Guenther suggested In-plant and on-demand training.

Friberg felt that the topics were somewhat dependent on where we go for 2005.

12. **ETOP 2005 sponsorships**

Friberg stated that Guenther always has a long list of potential sponsors.

Arthurs suggested that if 2005 is in Europe may get less Army funding.

Shoop suggested an NSF grant.

Friberg thinks that foundations in Europe are more forth coming with funds than the US.

Calvo stated that it is possible to ask for money from the European Union, but we need to do it very early and it has to be done by someone who knows the European bureaucracy. It would have to happen quickly.

13. **When will Long Range Planning Committee meet again?**

Friberg stated that the Committee did not meet in 2002 and it needed to. He suggested that we should plan to meet in 2004 to also talk about 2007 venue. But he said this decision a bit problematic since we don't know who the new representatives are and where they can meet. We will agree on when and where to meet when we know who will be on the committee. For the 2004 meeting Friberg suggested that we have not just the board members but more people for greater input.

Possible venues suggested: San Francisco/CLEO May; ICO board meeting in Japan; SPIE Annual meeting in Denver in August. Committee will decide next meeting when committee make up is known.

ACTION: Secretariat to work with LRPC members when they have been determined to select venue for a committee meeting in 2004.

14. **Adjourn**

6:30 pm meeting was adjourned



EDUCATION AND TRAINING IN OPTICS AND PHOTONICS 2003 MOST SUCCESSFUL ETOP IN HISTORY!

By all immediate measures, the 2003 Education and Training in Optics and Photonics (ETOP) Conference that was held at the Hilton El Conquistador Resort in Tucson, Arizona October 6-8, 2003 was the most successful ETOP in history! This year's conference boasted 109 presentations and attracted over 120 attendees from 23 countries.

This year, the Program Committee membership represented 25 countries from around the world. The 2003 ETOP Conference is the 8th in a series of bi-annual international conferences dating back to 1988. Previous ETOP Conferences have been held in San Diego, CA –

Leningrad, Russia – Pecs, Hungary – Delft, The Netherlands – Cancun, Mexico – and most recently Singapore in 2001.

Carl Wieman, 2001 Nobel Laureate in Physics and the Plenary Speaker on Monday spoke on “The Scientific Approach to Science Education: Applying the Tools of Physics to Teaching Physics” and drew in excess of 150 attendees. The Keynote address on Tuesday afternoon by Sir Michael Berry entitled “Making Light of Mathematics” attracted nearly 200 attendees. On Wednesday, Nicholaas Bloembergen, 1981 Nobel Laureate in Physics and Plenary Speaker delivered a talk entitled “Recollections About My Training in Optics” which drew in excess of 150 attendees. All three of these speakers set the stage for a dynamic conference that stimulated interaction among the attendees and challenged many of the traditional approaches to education and training.

A partial list of Invited Speakers included Eric Mazur from *Harvard University*, Lambertus Hesselink from *Stanford University*, Jeffrey Scott from the *University of Southampton, UK*, Janette Elizabeth Cawood, *South African Spectroscopic Society, South Africa*, Minella Alarcon, *United Nations Education, Scientific and Cultural Organization (UNESCO), France*, Donna Strickland, *University of Waterloo, Canada*, Lawrence S. Goldberg, *National Science Foundation, USA*, Anthony Johnson, *University of Maryland*, Andre H. Sayles, *US Military Academy*, Wayne Knox, *University of Rochester*, Richard Shoemaker, *University of Arizona*, David Hagan, *University of Central Florida*, Charles Falco, *University of Arizona*, Ravindra Athale, *Defense Advanced Research Projects Agency*, and Daniel Hull, *Centre for Occupational Research and Development*.

Session themes focused on educational pedagogy, university education initiatives and projections, distance and distributed learning, attraction and retention of optical scientists and engineers, innovative teaching approaches, optics and photonics education in developing nations, optics in visual learning and understanding, biophotonics education, sponsored initiatives in education and training, primary and secondary education outreach, and optics and photonics technician training.

The co-location of ETOP 2003 with the OSA Frontiers in Optics (FiO) Conference, Laser Science XIX, and Optical Thin Films Conference provided a tremendous advantage to all participants. The total number of attendees at these conferences topped 1150. Attendees could attend any of the technical sessions in any of the co-located conferences providing an important advantage over past ETOP conferences. ETOP presenters spoke to larger numbers of attendees and their papers were distributed to all 1150 attendees on the proceeding CDs that were distributed on-site and as a result, ETOP authors were afforded a far greater distribution of their papers than in past conferences in the series.

Two special sessions of Table Top Demonstrations were included this year and proved to be a tremendous success as a hands-on addition to the presentations. Presenters who had demonstrations were afforded the opportunity to provide a presentation followed in the afternoon by a session that allowed them to reinforce their talk with a hands-on demonstration. This provided the attendees the opportunity to more closely interact with the speakers and actively participate in the demonstrations.

ETOP 2003 is an International Commission for Optics (ICO) conference which was sponsored by the Optical Society of America (OSA) and the International Society for Optical Engineering (SPIE). Organizers for the 2003 ETOP conference included the OSA and the University of Arizona. Other supporters include the Institute of Electrical and Electronic

Engineers (IEEE) Lasers and Electro Optics Society (LEOS), the National Optical Astronomy Observatory (NOAO), the Arizona Optical Industry Association (AOIA), the Army Research Office (ARO), the Air Force Office of Scientific Research (AFOSR), Raytheon Corporation, and Veeco.

While the conference provided a serious venue for discussing important issues related to the future of optics and photonics education world-wide, there was also an opportunity for social interaction including the ETOP Reception on Monday evening and the ETOP Chair's Reception on Tuesday evening. Shown here are the ETOP 2003 Co-Chairs engaging in a bit of Southwestern traditional fun!

If you missed ETOP 2003, you missed one of the best educational conferences in our field!

Barry L. Shoop and Grover A. Swartzlander, Jr. , Co-Chairs of ETOP 2003



EOS TOPICAL MEETING ON “OPTICS IN COMPUTING 2004“

Engelberg, Switzerland, 21-23 April 2004: Report

Program: The scope of the meeting was to deal with the fundamentals of information optics and its applications in processing, storage, and data communications. The goal was to give a comprehensive overview of all relevant areas, i.e. ranging from material research via devices to applications. The purpose of the conference was to provide a platform for relatively mature areas (multi-dimensional imaging and sensing, interconnection and switching, for example) as well as to feature new trends in relevant areas such as micro- and nano-optics, biophotonics, Tera-Hertz optics, novel schemes for logic and architectures, etc.



The meeting was organized in 12 sessions (including one poster session). The sessions and invited/plenary speakers were: Optics in Electronic Computers: D. A. B. Miller, Stanford Univ., USA; Materials and Devices: H. Heidrich, FhG-HHI, Germany; Photonic Crystals: M. Salt, Univ. of Neuchâtel, Switzerland; Correlation and Encryption: B. Javidi et al., Univ. of Connecticut, USA; Temporal Processing: Y. Fainman, UCSD, USA; Interconnection Systems: F. Kiamilev, Univ. of Delaware, USA and J. Yamaguchi, NTT, Japan; Computer Architectures: T. Pinkston, USC, USA; Packaging: U. Teubner, IMM, Germany; Optical Storage: B. Bechevet, LETI, France; Waveguide Interconnection: L. Dellmann, IBM Zürich, Switzerland; Future of Computing: P. Lukowicz, ETH-Zürich, Switzerland.

The total number of papers was: 12 invited/plenary (see above); 54 contributed papers: 37 oral and 17 posters; 5 papers were withdrawn; Attendees: Total: 94 attendees (no-shows and cancellations excluded): full-time lecturer: 39, full-time member: 8, full-time non member: 7, students & emeriti: 14, invited speakers: 11, one-day reg.: 4, one-day reg. for lecturers: 11. Attendees in terms of country of origin: Belgium: 1, Denmark: 1, Germany: 18, France: 3, UK:

10, Ireland: 1, Israel: 1, Italy: 3, Japan: 16, Canada: 1, Austria: 1, Switzerland: 19, Spain: 4, Taiwan: 5, USA: 9, (one attendee did not give his country of origin).

ICO Grant: Three participants from Belarus and Russia were offered travel support based on an ICO grant, however, two of them decided not to attend anyways. So, only a small part of that support money could be spent. Exact numbers will be made available by the EOS office (Klaus Nowitzki).

Program Committee and Steering Committee: Two meetings were held apart from the regular sessions: the OiC Steering Committee (René Dändliker, Maria Yzuel and myself) and the Program Committee (about 15 participants). Several issues were brought up: the name change to "Information Photonics" for the conference series was supported by both groups. However, it was suggested to keep explicitly the name "Optics in Computing" as one of the main topics for the sake of recognizability. Furthermore, it was suggested to include IEEE/LEOS in the regular organization of the meeting. As to the next ICO sponsored meeting, there have been several suggestions to hold OiC 2006 meeting and in forthcoming dates this information will be announced on due time.

Finally, I would like to thank for the ICO support, the excellent EOS organization (thanks to K. Nowitzki and his staff) as well as the support of the other organizations.

Jürgen Jahns, Chair of the meeting. Hagen, 12 May 2004.



A SCHOOL OF LASERS IN MOROCCO

(15-19 December, 2003, held at the National School of Applied Sciences, Faculty of Sciences and Technologies, University of Abdelmalek Essaadi, Tangier, Morocco)

Symbol of the modern world, the laser takes a room of choice in today's technological progress and that of tomorrow.



The Moroccan Society of Optics (SMOP) has organized, from the 15th to the 19th of December 2003, a School on Lasers and their applications in National School of Applied Sciences of Tangier. It comprises a series of interventions by experts in the field.

Prof. René Dändliker, President of ICO, treated principles of laser basis, whereas Prof. Maria Calvo, General Secretary of ICO, landed the problem of coherence of the laser beam.

Prof. Jean Paul Pocholle (Thales, Paris) made dawn on the state of art of realization and utilization of lasers. Prof. Remy Fabbro recalled possibilities, while presenting samples, of the utilization of the laser for the treatment, the carving or welding of materials.

The environment field has been treated by Prof. Taieb Gasmi (Faculty of Science and Engineering, University Saint-Louis of Madrid, Spain) and Jérôme Kasparian (LASIM, Lyon,

France). They provided the aid for the utilization of the ultra fast lasers to detect the atmospheric pollution and to trigger and guide discharges.

One session day has been dedicated to the application of lasers in the medical diagnosis. The intervention of Prof. Sigrid Avrillier (LPL, University Paris-XIII), pioneer of the laser medical diagnosis in France, concerned the cellular oxymetry while studying the oxygenation of cloths by measuring the evolution of the absorption of red or infrared light by hemoglobin, (only constituent to absorb the infrared laser light). She also described the utilization of the laser in the precocious detection of tooth caries. The group of Prof. Ahmadou Wagué (University Cheik Anta Diop, Dakar, Senegal) in collaboration with a Swedish laboratory at the Lund University Hospital, uses the laser in the detection and the destruction of the cancerous cells of skin.

In addition to seminars, participants could get some benefit from the laser presentations: Nitrogen laser for the pumping of Dye lasers by Jérôme Kasparian, the Optical fibre laser by Prof. Aziz Boukentar (LTSI, Saint – Etienne, France), a kit of optics with Helium-Neon laser by Prof. Yehia A. Badr (NILES, Cairo, Egypt). The workshop included communications made by specialists from the Maghreb, Egypt and Senegal. In the same way some conferences have been presented to the benefit of students of the University Abdelmalek Essaadi of Tangier. The workshop was sponsored by ICTP, ICO, ISESCO, CNRST-Rabat, University Abdelmalek Essaadi and Embassy of France in Rabat.

Prof. Mohamed Semlali, Chair of the School.



TSOSA ADVISORY GROUP: TERMS OF REFERENCE

Terms of reference for the establishment of a body to advise on the coordination of activities in Optics and Photonics related to the Trieste System. Working name: TSOSA Advisory Group (Trieste System Optical Sciences and Applications Advisory Group).

The TSOSA Advisory Group is established with the purpose to offer advice on the development and coordination of activities on Optics and Photonics carried out or planned by the Trieste System.

It is initially established by the following Organizations:

ICO, OSA, SPIE, OWLS, IAEA, UNESCO and Institutions of the Trieste System i.e. ICTP, ICS, TWAS, ICGEB, Elettra Synchrotron Light Facility and the Laser laboratory at Elettra.

Participation of other Organizations and Institutions is open and welcome.

The TSOSA Advisory group is assumed to be aware of the activities and programmes of its members that promote the advancement of Optics and Photonics for the benefit of Developing Countries and that are related to the Trieste System programmes. Developing Countries are defined as per the U.N. rules.

The mandate of the TSOSA Advisory Group is as follows.

1. To stimulate the consistency of the activities of the member Organizations so as to maximize the outcome.

2. Suggest new activities and topics for the Workshops, Courses, Conferences held by the Trieste System.
3. Make sure that Optics and Photonics activities of the Trieste System are adequately publicized by the organizing bodies of the TSOSA Advisory Group including the activities held at ICTP and at the ICTP Affiliated Centres
4. To propose new schemes that can improve the activities on Optics and Photonics of the Trieste System
5. To stimulate nominations from Developing Countries for fellowships, grants and awards of the respective Societies and Organizations keeping their full autonomy of the final decisions or selections.
6. Issue an annual progress report to its member organization governing bodies.

Each member organization, including each member body of the Trieste System, will appoint one representative in the body, with a specified term of office, and may appoint a substitute in addition

The TSOSA Advisory Group has a chairperson, elected annually by the members at its meeting. It meets annually in Trieste during the Winter College on Optics and otherwise operates by email. The ICTP provides the secretariat for the TSOSA Advisory Group. The chairperson may invite individuals to attend meetings in a non-voting capacity as appropriate.



REPORT ON THE TSOSA ADVISORY GROUP MEETING

(ICTP, Trieste, Italy, 10 February 2004)

At the occasion of the Winter College on “Interferometry and Applications in Modern Physics” held at the Abdus Salam International Centre for Theoretical Physics (ICTP, 2-13 February 2004, Trieste, Italy), a half day meeting took place to update various issues concerning the programs on Optics and Photonics for developing countries.

Meeting started at 9:00 AM. The following points of the agenda were taken place:

Point 1.- Prof. K.R. Srinivasan, ICTP Director, welcome the participants. He stressed that the Optics program is a very good initiative and it requires to strain activities in Asia, Latin-America and Middle-East, not enough developed in the last time. Not only donation of equipment’s are necessary but to exchange activities and programs. He would like to see more scientific involved in optics programs as a result of the Optics Colleges and the LAM Network.

Point 2.- Presentation of participants: The attendees present themselves: M. Alarcon (UNESCO), M. Altarelli (ELETTRA, Synchrotron, Trieste), E. Arthurs (SPIE, Executive Director), M. Berttolotti (EOS and Italian Optical Society), M.L. Calvo (ICO Secretary, observer), P. Chavel (ICO representative), A. Consortini (G. Denardo personal guest), M. Danailov (ELETTRA, Synchrotron, Trieste), R. Dändliker (ICO President, co-director of Winter College 2004, observer), G. Denardo (Chair of the meeting and ICTP Executive Deputy), K. Douglas (OSA, Optics & Photonics News), M. H. A. Hassan (TWAS Executive Director), A. Johnson (OSA representative), G. Von Bally (OWLS representative), A. Wagué

(LAM representative), M. Yzuel (SPIE representative) and L. Iannetti (G. Denardo's administrative secretary).

Point 3.- A briefing on the activities: G. Denardo reported on the AIEA/ICTP Sandwich program for training in Lasers, Synchrotron radiation, applications to Medicine, atoms and molecules and high energy physics. This year the program has been more complete. There has been a selection of fellows from the STEP program for three years (six months being the minimum period), including medical insurance and travel cost. This year thirteen fellows have been selected, five from previous years, and eighteen Ph.D. students fellows of the STEP. It is required the supervision of each student by a nominated supervisor or tutor that has to accept the program proposal.

Some discussions took place. This is a very important program for training of students from developing countries (Srinivasan). It is advisable that the student's adviser from the country of origin may come to ICTP, as well, at least for a certain period (Johnson). ICTP has Associate Members that could participate in schools and programs (Denardo). For TWAS the program is very important. The home institutions of the fellows may participate directly and it is convenient to have also participants from Italy (to facilitate the connection), also to invite UNESCO to cover the areas not covered by ICTP (Hassan). To this concern there are various laboratories in Italy that could be able to accept students for training. Currently, there are professors and researchers in Italy who would be interested in accepting these scholars. The Italian Optical Society fully agree with the proposals that could be enlarge through Europe (EOS) (Bertolotti). For a convenient way of procedure it is necessary to know first what are the offers and infrastructure (Srinivasan).

G. Denardo continued with the report on activities in relation to ELETTRA users from developing countries. There is a list of activities already made (Iannetti) with the order of thirty projects. This year more than twenty-five projects were approved. The applied rate is three persons/project to come to synchrotron and a total of 1001 hours of beams light to be used.

M. Altarelli commented that the program in 2003 has been very successful with high quality proposals. The geographical distribution of applicants is not yet quite satisfactory. They are mainly focused in India and Latin America, and very few from Middle-East. Also, efforts to involve more people from Africa are required.

G. Denardo solicited proposals for the organization of the ICTP Winter College 2005.

R. Dändliker as co-director of the Winter College 2004 mentioned that this year the program is running very good with high quality presentations. Even if the main subject was on interferometry there are lecturers on many new applications with particles, gravitational waves, atoms and molecules, astronomy, that were also covered, so that the program was not solely focused in optics but in wide areas of physics. G. Denardo added that the week following the school there is a laboratory training for participants. Unfortunately, and due to restrictions for local facilities the participants are restricted to twelve persons. There is a clear decreasing in the number of participants to laboratories since ten years ago the number of applications could reach the order of 500.

A. Wagué remarked that thanks to this training program there are now new laboratories in Senegal, Ghana and other African countries building up after the training of participants in ICTP Winter Colleges. Regarding the synchrotron facilities, it is difficult to attract African participants since a previous training is required.

M. Bertolotti indicated that a possibility is to have a school with virtual laboratories through which the students could choose later the subject of interest in a real laboratory and to be done

later in a shorter time. A. Consortini added the idea of organizing a new small laboratory for training purposes. So, that lecturers could carry small experiments to help the organizers for running practical training. G. Denardo informed as well that the collaboration with ICS continues.

Moreover, he has received a proposal from several laser centres in Europe (including Russia) to organize a school of lasers at ICTP for one week in July 2004. This activity will be advertised at the ICTP web site.

ETOP'05 possible organization G. Denardo informed that he was aware on the interest of a possible organization of ETOP in Trieste at ICTP. He has been considering this proposal along with other ICTP responsible and the idea is very well received but he consider that it should be foreseen on a middle term basis for the years coming. E. Arthurs informed that several proposals have been already presented for ETOP'05 to be held in Toronto, Prague, Marseille. The main concern is that, in view of the great success of the last ETOP'04 in Tucson (Arizona) at the occasion of OSA Annual Meeting, it is quite advisable that the forthcoming ETOP'05 will coincide with some major meeting. The decision is not yet taken and it is expected that A. Friberg, Chair of the Steering Committee, will report soon on the current situation with respect to applications and priorities (Calvo).

Point 4.- Proposal for a “Mentoring Program” of visiting senior scientists to supervise the fellows in Trieste: G. Denardo informed that currently there is not a permanent group working in optics at ICTP. As a consequence, the leadership on these subjects is not fully organized. As an initiative the “Mentoring Program” will benefit from the participation of a limited number as senior scientists working as supervisors and to be carried out at the Trieste’s institutions. As an starting point, there is a need to quantify the commitments. The supervisors will need to meet the students at least once during the training program. To facilitate the task, there would be not a special requirement for the tutor to travel to Trieste but the work could be done from their own places of origin.

Some discussions and exchange of opinions took place.

P. Chavel indicated that there is a primary task for identifying the person or persons selecting the topics. Nowadays, they are very broad. A possible way of procedure could be that the selection be implemented as soon as the corresponding supervisor be identified. There was suggestions and agreements for the selection of supervisors and subjects to be in first place and making a clear offer.

M. Yzuel pointed out that it is important to check the geographical location of the elected supervisors.

G. Denardo explained that there is a main concern for transferring the knowledge on specific subjects to the countries of origin of the selected students. To this point M. Alarcon commented that the local supervisors have to be active and developing some research on their country of origin. A. Wagué indicated that in fact the “Mentoring Program” is a sort of sandwich program, in which the Trieste System is already experienced. Hassan added that in some countries there is a lack of specialists in many areas restricting the running of the sandwich program. To help with those local situations G. Denardo clarified that the supervisors have to be associated to Trieste’s institutions, as a main choice.

M. Yzuel manifested her position in favour of the program. It is efficient to choose topics but one of the supervisor has to be also at the mother country. We need to consider as well that there can be problems when the students are coming back to the country of origin. If the training

cannot be reflected at their own place then the program will be lacking of effectiveness. And G. Denardo insisted that this is a sandwich program.

Continuing with the discussion M. Alarcon mentioned that we have to be very careful with the selections of topics. It is important to assure that the topics could be developed in a future at their own place, may be helping the set up of new labs. G. V. Bally precise that the Trieste system offers a restricted number of topics (for the order of 30 people). G. Denardo proposed that as a priority a list of relevant topics should be offered to applicants and then to look for potential supervisors.

In relation to the professional societies, A. Johnson was asking for the specific contributions of the same. And A. Consortini informed that EOS will designate a permanent representative at TSOSA.

G. Denardo answered that societies have to contact their own members and to performing a list of potential relevant subjects and participants. Moreover, there is a requirement of financial assistance coming from the member's organizations present in TSOSA and at the end this has to be considered as a Joint Venture. A. Johnson informed on OSA Foundation and the travelling fellowship program¹.

E. Arthurs asked all participants on the meeting to start looking for individual members interested in the program.

G. Denardo was proposing the following calendar: **To send suggestions by June 2004** and to circulate a draft that will be primarily sent by him.

Point 5.- A project for a Science and Technology Exhibition for Developing Countries: G. Denardo informed that this project is addressed to industries in developing countries.

In particular in 2008 there will be the hosting of an international Expo at Trieste.

The so called Group 77 of the UN is asking for the organization of: a) a university of developing countries. b) To make the institution more visible through out some exhibitions addressed to the big public. Also, ICS will be involved and providing financial help for developing the program. Still, the project is under a very preliminary level. A meeting at ICTP will take place for further decisions (16-18 February 2004). Optics can have one of the main roles of the subject and there is a need to identified what type of contribution we want.

R. Dändliker precise that some activities in Science and Technology should be done in connection with 2005 the World Year of Physics. And enhancing collaboration with engineering. Academies of Engineering and Science of various countries could be involved on the organization.

V. Bally pointed out that it is may be too early to decide the actions and it is required to have first the kind and number of topics. To this point G. Denardo indicated that the general topics will be optics and lasers and he would like to start collecting information.

M. Alarcon manifested her reluctance in relation to the addressing to developing countries, since nowadays industries are mainly interested in achievements of High Tech in developing countries.

G. Denardo indicated that High Tech can be advertised in developing countries. Also, professional societies as SPIE could also help (Arthurs).

A. Johnson demanded information on current activities toward the World Year of Physics.

¹ To this concern ICO Secretariat would like to propose at the forthcoming ICO Bureau 2004 that ICO Travelling Lecturer program could be also addressed to the supervisors of the "Mentoring Program" from developing countries, as an extension of this program.

M. Alarcon informed on the Organization of a World Congress in Physics, October 2005, Durban, South Africa².

Point 6.- Suggestions of topics for future colleges and training courses:

Winter College 2005: A. Johnson proposed the following: *Optics and Photonics in Nanoscience and Technology*.

V. Bally was supporting the proposal. He informed the held of a conference last week, conference on Site of Excellence from the EU, with 200 groups working on this subjects and being one of the largest European networks. There is a need for studying the social impact on these subjects on developing countries. Agriculture, Food Supplies, Water resources, medicine, material science, and so on are connected with this topic. We need to care on the possible related ethical issues.

As a remark, the term Nanoscience concerns research on physical systems with dimensions <100nm and it is also connected to microtechnology. Besides, Life science cannot be excluded.

R. Dändliker mentioned that he term nanoscience is not fully consistent but has to be kept on the title.

G. Denardo recommended the topic as a general one and we need to avoid very theoretical subjects.

P. Chavel pointed out that there is also Optics in Nanoscience for Life Science and it is not obvious that it has to be considered in the other main title.

Point 7.- Finalization of the document as terms of reference for TSOSA: G. Denardo presented the final document for the consideration of the representatives and possible approval of the same. E. Arthurs mentioned that IEEE was not present and not designating a representative. But, since it has been informed to all representatives it is adequate to proceed.

Motion (First M.J. Yzuel, second P. Chavel). Approved unanimously.

G. Denardo indicated that a Chair for the TSOSA Advisory Group is required. V. Bally proposed P. Chavel, ICO representative for this task. P. Chavel indicated that he was accepting for the corresponding one year period. Unanimously approved. G. Denardo added that we have to recognize the important contribution of P. Chavel on the initiative for the formation of the TSOSA Advisory Group and that he is the most appropriate person for filling this task.

Point 8.-Additional point (not in the agenda): Presentation of UNESCO activities by M.

Alarcon: “Active Learning in Optics and Photonics”: She started explaining the “Active Learning in Physics” program at the universities. The students have to organize their work in groups. There is a minimum number of lecturers by the teachers, reducing black board work. The program has been developed by UNESCO for several years. To be widely forested by the international physics community. The project is proposed for the benefit of physics teachers from developing countries. It is focused on Optics and Photonics since these subjects are presenting a high adaptability in developing countries. Besides, there is currently an international working group with expertise in optics and teaching techniques. The first meeting is dated for November 2004 (Tunisia) with the aim to enhance development of optics in curricula: Optics of the eye, optics in communication, atmospheric optics, diffraction,

² ICO Secretariat would like to add that ICO participated as an associated external commission to the organization of the World Year of Physics, but up to the present date no information has reached this Secretariat.

interferences, spectroscopy and lasers. There will be additional work for seeking also for appropriate instrumentation.

Point 9.- Any other business (2004, ICTP 40th Anniversary, etc.): G. Gallieno informed that 2004 is the 40th Anniversary of ICTP and there is now a program being proposed for the forthcoming activities: A meeting in October 2004 dedicated to Science in developing countries, in which Optics could be also involved as a subject on Modern Optics. It is a priority to suggest a sounded speaker. Some names were mentioned: Peter Knight, current OSA president (A. Johnson), also, William Philips (Nobel Prize in Physics). Proposals now open for lecturers.

No more points of discussion raised. Meeting ended at 1:00 PM.

Maria L. Calvo, ICO Secretary, Trieste, 14 February 2004

PART II: MEETINGS PROCEDURES

ICO CONGRESSES AND OTHER MAJOR ICO EVENTS

(Topical Meetings, Regional Meetings, Schools)

Information and Guidelines

A - General conditions:

1 - "Event" here refers to a scientific meeting or school. As opposed to other events with ICO participation, ICO Congresses and other major ICO events are generated from the very beginning by ICO or in close relation with ICO. A companion document to this one gives the information and guidelines for ICO Cosponsorship and Endorsement of Conferences and Schools, where ICO is not the primary organiser.

2 - The following rules apply in all cases to ICO General Meetings and other major ICO events

- the event should be international - typically, at least 30 % of the expected attendance and at least 50 % of the Programme Committee should be from outside the host territory;
- the ICO Bureau should perceive clearly that the meeting will be of a good scientific quality and that the timing and venue are appropriate;
- the ICO Territorial Committee of the territory where the event is to be held should approve the project;
- in agreement with the organisers, the ICO Secretariat applies for the formal sponsorship of the ICO General and Topical Meetings by IUPAP;
- the event organisers should confirm adherence to the general principle of "free movement of scientists" as defined by the International Council of Scientific Unions (ICSU) in the booklet "Advice to Organisers of International Scientific Conferences". In essence, the host territory must guarantee that a bona fide scientist or engineer of any nationality or citizenship may attend. It is not sufficient to make a guarantee only for persons from territories recognised by the host territory. Any failure to honour a guarantee is reported by ICO to ICSU through the International Union of Pure and Applied Physics (IUPAP) ; following a decision by IUPAP, the organisers are requested to publish the following sentence in any circular, announcement and in the proceedings of the conference : "To secure IUPAP sponsorship, the organisers have provided assurance that ... (Conference name) will be conducted in accordance with IUPAP principles as stated in the ICSU Document "Universality of Science" (sixth edition, 1989) regarding the free circulation of scientists for international purposes. In particular, no bona fide scientist will be excluded from participation on the grounds of national origin, nationality, or political considerations unrelated to science."
- the registration fees for meetings should follow IUPAP's policy on conference fees. For conferences held in 2002, the upper limit is US\$ 350 where proceedings are included and "substantially lower" otherwise (the figure is increased periodically in line with inflation) ; in addition, the ICO Bureau recommends to have substantially discounted fees for full time students;
- ICO should approve the composition of the Programme Committee and be in a position to appoint part of it ; the ICO Associate Secretary in charge of meetings should be ex officio a member of the Organising Committee ;

- the ICO logo should be used in all documents related to the meeting that are made public;
- the event should be publicised in the ICO Newsletter; the texts are usually prepared in cooperation by the local Organisers and the ICO Secretary;
- the announcements, calls for communications and registration forms should be distributed, among others, through the channel of the ICO Territorial Committees;
- the organisers should accept to send free proceedings of the conference to countries where optics development requires special support ; a list of some addresses appropriate for that purpose selected by ICO will be provided by ICO. At present, the number of copies required is of the order of 20.

3 - ICO encourages meetings in all new areas of optics and meetings designed to fill specific needs, including regional development of optics. At the same time, ICO would like to avoid the unnecessary proliferation of conferences; section 6 of the Questionnaire should therefore be answered carefully, explaining why this particular conference should be held.

4 - Industrial participation in the Programme Committee and in the Organising Committee is usually required.

5 - There may be ICO financial participation in ICO Events, in the form of a grant, a loan, or a participation in the risks. ICO participation is an ICO Bureau decision. There is usually no ICO financial participation in ICO Endorsed Events.

Notes:

- participation in the financial risks means an immediate loan that can be converted in part or in totality into a grant if the event runs a deficit ; ICO accepts to take the first risk ; in case of a surplus, however, ICO receives a share of the surplus.
- in the 33 events held between ICO-19 and ICO-20 (both inclusive) with ICO participation, ICO was financially involved in 23 cases and assumed a risk twice (in both ICO Congresses). A typical amount of an ICO grant for a major ICO event is US\$ 1500-5000, and for an ICO Co-sponsored event US\$ 1000-2500. In most of the recent cases, the ICO grant was specifically awarded for the purpose of helping identified registrants from less favoured countries.

B - Special conditions for ICO Congresses:

6 - ICO Congresses are held every three years; they include the General Business Meeting as requested by the statutes and a Scientific Meeting that should cover most of optics.

7 - For Congresses, calls for bids are issued by the ICO Associate Secretary with a deadline typically 4 years before the Meeting; the ICO Bureau in that year examines the bids and issues a proposition that is then submitted to the ICO Congress the following year. The ICO Congress makes the final decision. For ICO-20, to be held in 2005, the final deadline was March 31st, 2001 and the decision was taken at ICO-19. For ICO-21, it is likely that the same dates, shifted by three years, will apply. Advance notice is always appreciated. Bids should be sent to the ICO Associate Secretary in charge of meetings and schools.

8 - The vast majority of the recent Congresses were held in August or early in September.

9 - The budget should provide for some financial help for invited speakers, the usual minimum being free registration. Special support is requested for invited speakers from countries where the development of optics is comparatively difficult. In recent ICO Congresses, the number of invited speakers ranged between 30 and 40. The winners of the recent ICO Prizes and of the recent Galileo Galilei Awards are invited speakers at the next possible ICO Congress. Because there is usually one ICO Prize and one Galileo Galilei Award every year and one General Meeting every three years, this typically means that 6 invited speakers will be the winners of the recent ICO awards.

10 - The 2005 Congress, ICO-20, will be held in Changchun, China in August 2005, under the title "Challenging Optics in Science & Technology". Previous ICO Congresses were held in the following countries:

ICO-19, 2002, Italy
 ICO-18, 1999, the United States of America
 ICO-17, 1996, Korea
 ICO-16, 1993, Hungary
 ICO-15, 1990, F.R. Germany
 ICO-14, 1987, Canada
 ICO-13, 1984, Japan
 ICO-12, 1981, Austria
 ICO-11, 1978, Spain
 ICO-10, 1975, Czechoslovakia
 ICO-9, 1972, the United States of America
 ICO-8, 1969, the United Kingdom
 ICO-7, 1966, France
 ICO-6, 1962, F.R. Germany
 ICO-5, 1959, Sweden
 ICO-4, 1956, the United States of America
 ICO-3, 1953, Spain
 ICO-2, 1950, the United Kingdom
 ICO-1, 1948, the Netherlands
 (preliminary meetings had been held in Czechoslovakia and France).

C - Other major ICO events:

11 - ICO usually organises Schools, Topical Meetings or Regional Meetings between the Congresses. During the period 1997-2005, the list is as follows:

August 1997, ICO 50th Anniversary, Education and Training in Optics, Delft (Netherlands)
 February 1998, ICTP/ICO Winter College on Optics, Trieste (Italy)
 August 1998, ICO Topical Meeting on Optics for Information Infrastructure, Tianjin (China)
 February 2000 ICTP/ICO/OSA Winter College on Optics and Photonics, Trieste (Italy)
 April 2000, ICO Topical Meeting on Optical Science and Applications for Sustainable Development, Dakar (Senegal)

(August 2001, ICO Topical Meeting on Information Optics, Caesarea (Israel), postponed)
 February 2002, ICTP/ICO/OSA Winter College on Ultrafast Nonlinear Optics, Trieste (Italy)
 February 2003, ICTP/ICO/OSA/OWLS/SPIE, Winter College on Biophotonics, Trieste (Italy)
 July 2003, ICO Topical Meeting on Polarization Optics, Joensuu (Finland)
 February 2004, ICTP/ICO/OSA/OWLS/SPIE, Winter College on Interferometry and Applications in Modern Physics, Trieste (Italy)
 July 2004, ICO Topical Meeting on Optics and Photonics in Technology Frontiers, Chiba (Japan)
 February 2005, ICTP/ICO/OSA/OWLS/SPIE, Winter College on Optics and Photonics in Nanoscience and Nanotechnology, Trieste (Italy)

12 - ICO Meetings should correspond to a clear need in a given subfield of optics or in a given geographical area.

13 - Although it never happened up to now, it is in principle possible to have more than one ICO major meeting in a given year or to have one in the same year as a Congress.

14 - Bids for all major ICO events to be held prior to December 31, 2007 are now welcome and should be sent to the ICO Secretariat. A strict deadline of March 31, 2003 applies to major ICO events to be held before December 31, 2004.

15 - Opportunities to organise schools are welcome; ICO Schools should normally be specialised to some area of optics and should last between one and three weeks; geographical areas with special needs for the development of optics are particularly welcome.



ICO COSPONSORSHIP AND ENDORSEMENT OF CONFERENCES AND SCHOOLS

Information and Guidelines

A - General conditions

1 - ICO provides sponsorship and endorsement to international conferences and schools - typically, those with at least 30 % of the attendees and at least 50 % of the Programme Committee from outside the host territory. "Event" in the forthcoming refers to conference or school. A companion document to this one gives the information and guidelines for events directly generated by ICO or in particularly close cooperation with ICO (i.e., ICO Congresses, ICO Topical Meetings, ICO Regional Meetings, ICO Schools).

2 - ICO participation implies in all cases

- that the ICO Bureau perceives that the meeting will be of a good scientific quality and that the timing and venue are appropriate;

- that the ICO Territorial Committee of the territory where the event is to be held approves the project;
- that the event organisers confirm adherence to the general principle of "free movement of scientists" as defined by the International Council of Scientific Unions (ICSU) in the booklet "Advice to Organisers of International Scientific Conferences". In essence, the host territory must guarantee that a bona fide scientist or engineer of any nationality or citizenship may attend. It is not sufficient to make a guarantee only for persons from territories recognised by the host territory. Any failure to honour a guarantee is reported by ICO to ICSU through the International Union of Pure and Applied Physics (IUPAP).

3 - ICO encourages meetings in all new areas of optics and meetings designed to fill specific needs, including regional development of optics. At the same time, ICO would like to avoid the unnecessary proliferation of conferences; section 6 of the Questionnaire should therefore be answered carefully, explaining why this particular conference should be held.

4 - Industrial participation in the Programme Committee and in the Organizing Committee is usually required.

B - Special conditions for ICO Cosponsored Events and for ICO Endorsed Events:

5 - The distinction between the two categories "ICO Cosponsored Event" and "ICO Endorsed Event" is outlined in the following points. The ICO Bureau makes the decision but organizers are welcome to propose a category.

6 - ICO Cosponsored Conferences must follow IUPAP's policy on conference fees. For conferences held in 2002, the upper limit is US\$ 350 where proceedings are included and "substantially lower" otherwise (the figure is increased periodically in line with inflation). For ICO Endorsed Events, exceptions to that rule may be made.

7 - In ICO Cosponsored Events, ICO must be associated from the beginning, and usually no later than 18 months in advance.

8 - In ICO Cosponsored events, the ICO Associate Secretary (in charge of meetings) is ex officio a member of the Organizing Committee and should be kept regularly informed of the progress of the organization.

9 - In ICO Cosponsored events, the ICO Bureau designates one member to represent it in the Programme Committee. For ICO Endorsed Events, exception to that rule may be made.

10 - For ICO Cosponsored Events, the organizers are always welcome to use the channel of the ICO Territorial Committee mailing list to distribute information.

11 - For ICO Cosponsored Events, the organizers are requested to send free proceedings of the conference to countries where optics development requires special support; a list of some addresses appropriate for that purpose selected by ICO will be provided by ICO; for ICO

Endorsed Events, the same action is recommended. The number of copies requested is of the order of 20.

12 - All ICO Cosponsored and ICO Endorsed Events are listed in the column "Forthcoming events with ICO participation" in the ICO Newsletter. In addition, organizers of ICO Cosponsored Events are welcome to provide the ICO Secretariat with a 1000 to 2000 words article, if possible with an illustration, for further publicity in the ICO Newsletter. Because the responsibility for the publication rests on it, ICO has the liberty to slightly edit the text to adapt it to the general style and to the space available.

13 - The use of the ICO logo in documents concerning ICO Cosponsored Events is desired; it is permitted in ICO Endorsed Events.

14 - There may be ICO financial participation in ICO Cosponsored Events, in the form of a grant, a loan, or a participation in the risks. ICO participation is an ICO Bureau decision. There is usually no ICO financial participation in ICO Endorsed Events.

Notes:

- participation in the financial risks means an immediate loan that can be converted in part or in totality into a grant if the event runs a deficit ; ICO accepts to take the first risk ; in case of a surplus, however, ICO receives a share of the surplus.
- in the 33 events held between ICO-19 and ICO-20 (both inclusive) with ICO participation, ICO was financially involved in 23 cases and assumed a risk twice (in both ICO Congresses). A typical amount of an ICO grant for a major ICO event is US\$ 1500-5000, and for an ICO Cosponsored event US\$ 1000-2500. In most of the recent cases, the ICO grant was specifically awarded for the purpose of helping identified registrants from less favoured countries.



Steering Committees

ICO is involved with OSA, SPIE, other organizations such as its International Organization Members, and EOS in two international meeting series: Education and Training in Optics and Photonics (ETOP), and Optics and Computing (OIC'XX)

Information about the ETOP series, including the Long-Range Guidance, Sponsorship, and Management of ETOP series and instructions for hosting ETOP meetings, can be found from the ICO home pages <http://www.ico-optics.org/> under Activities (meeting series)

Information about the Optics in Computing series, including the Bylaws of the Steering Committee, are available on the ICO home pages <http://www.ico-optics.org/> under Activities (meeting series)

PART III: THE ORGANISATION OF ICO

ICO STATUTES

New statutes have been adopted in 1999, the motivation was to obtain a good representation of the whole optical community within ICO through the addition of the new membership category "International Organisation Member". The European Optical Society, the Institute of Electrical and Electronic Engineer's Laser and Electro-Optic Society, the Optical Society of America, and SPIE – the International Society for Optical Engineering have been accepted for membership in the new category as early as 1999.

Original statutes adopted at Delft, 1948. Amended at Cambridge - 1956, Santa Monica - 1972, Sapporo - 1984, Garmisch Partenkirchen - 1990, Taejon- 1996.

New version adopted by ICO General Meeting, San Francisco, August 2, 1999. Approved by IUPAP, October 1999.

Article 1 Objective

The objective of the International Commission for Optics (ICO) is to contribute, on an international basis, to the progress of the science of Optics and its applications. It emphasises the unity of the crossdisciplinary field of Optics.

Optics is defined as the field of science and engineering encompassing the physical phenomena and technologies associated with the generation, transmission, manipulation, detection, and utilisation of light. It extends on both sides of the visible part of the electromagnetic spectrum as far as the same concepts apply.

In particular, the ICO promotes international co-operation and facilitates the rapid exchange of information, by encouraging and furthering the organisation, on an international basis, of scientific meetings and summer schools. It emphasises actions for the education and training in Optics internationally. It undertakes special actions for the development of optics in regions where particular support is needed. It strives to improve the recognition of Optics as a field of science with a significant impact on economy. It works also for the promotion of international agreements on nomenclature, units, symbols and standards.

Article 2 Affiliation

The International Commission for Optics is affiliated to the International Union of Pure and Applied Physics (IUPAP) and through IUPAP to the International Council of Scientific Unions (ICSU).

Article 3 Membership

The Commission has three categories of Members.

3a) Territorial Committee Members, that represent identified optics communities in a set of non overlapping geographical areas. A Territorial Committee Member should be listed under a name that avoids any misunderstanding about the area represented. The word "territory" does not

imply any political position on the part of the Commission, which seeks to assist scientists in optics everywhere in the world to co-operate on an international level. Each Territorial Committee should receive endorsement of the appropriate authority representing science in its territory, such as an Academy of Science. In addition, it should either (a) be a subcommittee of the body representing the Member in IUPAP, (b) be recognised by the body representing the Member in IUPAP, or (c) if no such body exists be recognised by the council of IUPAP.

3b) International Organisation members. Such members are membership organisations active in the field of Optics on an international level.

3c) The Commission may also accept organisations active in optics as Associate Members. Associate Members pay no dues and have no voting privileges.

Application for all categories of membership shall be made to the Secretary of the Commission and submitted to the next General Meeting for approval. Applications in the Territorial Committee Member and Associate Member categories may be approved by the Bureau, subject to ratification at the next General Meeting of the Commission.

Article 4 Shares and votes

Each member of ICO has a specified number of shares, which determines its financial contribution as well as its number of votes at the General Meeting.

4a) Each Territorial Committee member whose territory is also a member of IUPAP has the same number of shares, N_{s1} , in ICO as it has in IUPAP. The number of votes N_{v1} , which is also the maximum number of voting delegates of the Territorial Committee Member, is determined according to the IUPAP scale, which presently reads as follows:

Category	number of shares	number of official delegates and votes
I	1	1
II	2 or 3	2
III	4 to 6	3
IV	7 to 9	4
V	10 to 15	5
VI	Over 15	6

4b) The number of shares N_{s2} of an International Organisation Member is determined in agreement with ICO during the Membership admission procedure; it may be changed following the same procedures as for membership admission. The International Organisation Members are represented by one voting representative carrying a number of votes N_{v2} proportional to the number of shares N_{s2} of the member determined in such a way that the total number of votes of all International Organisation Members cannot exceed that of all Territorial Committee Members. The exact method for determining N_{v2} is included in the Rules and Codes of Practice.

Article 5 The Bureau

The Bureau of ICO consists of the following.

- the Executive Committee, consisting of the President, the immediate Past-President, the Secretary, the Associate Secretary and the Treasurer. All members of the Executive Committee, except for the Immediate Past-President, are elected by ICO at the General Meeting.
- The IUPAP representative appointed by the Executive Council of IUPAP under Article 7b of the statutes of the Union, and any Associate Members from IUPAP Commissions.
- The other Bureau members, who are traditionally known as Vice-Presidents. Eight Vice-Presidents (at least two of whom are from industry) are elected at the General Meeting by the Territorial Committee Members; in addition, also at the General Meeting, every International Organisation Member appoints one Vice-President up to the limit of eight; if there are more than eight International Organisation Members, eight Vice-Presidents are elected at the General Meeting by the International Organisation Members.

The Bureau is responsible for the conduct of the Commission's business between General Meetings. The term of office of the Bureau is three years from October 1st in the year of the election.

The President will be elected for a term of 3 years, normally after having served 3 years as a Bureau Member. In the event the President is unable to continue his/her duties for the elected term, the Past-President (or in case he/she is unable, the Secretary) will act as interim President, or, with the concurrence of the majority of the Bureau, will appoint one of the Bureau Members as interim President.

The Secretary, Associate Secretary and Treasurer will be elected for a term of three years and will be eligible for a second and usually final term of three more years. If either is unable to continue his/her duties for the elected term, the President will, with the concurrence of the majority of the Bureau, appoint a substitute from among the current Bureau Members.

Other Bureau Members will be elected for 3 years and will be eligible for not more than one further term of three years, except as described in the above two paragraphs.

The Bureau may fill vacancies occurring in its membership during the interval period between General Meetings, except for the position of Immediate Past President.

Article 6 Finance

In addition to money that may be granted by IUPAP, the International Commission for Optics may possess funds of its own consisting of subscriptions from the Members and special donations or grants. Each member pays a number of shares. Dues are payable on the first day of each year. Certain specific projects may be financed independently of the general resources of the Commission. The unit subscription per share is decided by the General Meeting.

Article 7 Withdrawal and Resignation

A member whose subscription is more than six years in arrears is to be regarded as having withdrawn. Any Member which has resigned is liable for the unpaid subscriptions up to the end of the year of resignation. Any Member ceasing to belong to the Commission forfeits its rights to ICO assets.

Article 8 General Meeting

The ICO is governed by its General Meeting, which consists of the Bureau (non voting) and the official delegates appointed by the Members.

The General Meeting of ICO is held every third year. The following business will be carried out at each of these General Meetings:

- (a) election of the Bureau;
- (b) examination of a Financial Statement presented by the Bureau;
- (c) agreement on a provisional budget for future years;
- (d) discussion of questions submitted by the ICO Members, the Bureau or the Executive Council of IUPAP.

Any Member, including Associate Members, as well as the ICO President can invite delegates at the General Meeting with no restriction of number. The number of voting delegates is restricted as per article 4.

The President may, with the approval of the Bureau, convene an Extraordinary General Meeting, and shall call such Meetings upon the request of one-third of all ICO Members.

The Draft Agenda for the General Meeting is circulated by the Secretary at least three months before the opening of the General Meeting. Subjects not on the Draft Agenda may be added at the Meeting with the consent of a single majority of the votes of Members represented at the Meeting.

A Member who is unable to send a delegate at a given General Meeting but wishes to vote on appropriate matters appearing on the Agenda may send its vote in writing to the President.

Alternately, it may give a proxy to another member of the same category. To be valid, votes made in writing and proxies must be received prior to the General Meeting.

Article 9 Other Meetings

The International Commission for Optics may sponsor or co-sponsor international conferences and give financial support (grants or guarantees), as a grant to organising committees or as a travelling grant directly to participants.

Article 10 Relation with the International Union of Pure and Applied Physics

(See also Articles 2 and 3)

The Commission will report concerning its work and its financial position to each General Assembly of the International Union for Pure and Applied Physics and will receive directives from that Assembly. Affiliation of the Commission to the Union can be terminated only by the Union at its General Assembly. In the event of disaffiliation, the special funds of the Commission are to remain its own property, but any unexpected balance of money received from IUPAP shall be returned to that body.

Article 11 Duration of the Commission

The life of the International Commission for Optics is not limited. The dissolution of the Commission may be decided by a majority of two-thirds of the votes of the Members voting at a General Meeting. In this event, the assets of ICO will be allocated by the General Meeting to one or more not-profit organisations of closely similar purposes serving the optical sciences.

Article 12 Alterations to the Statutes

Alterations in the Statutes may be proposed by the Bureau of the Commission, by one of the members, or by IUPAP. Such proposals must be received by the Secretary of the Commission at least three months before the date of the General Meeting.

Amendments or modifications may be adopted only at a General Meeting by a two-thirds majority of the Members taking part in the vote. Alterations of Statutes must be approved by IUPAP, which shall also constitute the final authority in regard to interpretation of Statutes.

Article 13 Rules and Codes of Practice

Rules for the conduct of business determine procedures for dealing with matters not specifically laid down in these Statutes. They are meant to give guidance in general terms to the Bureau and to the Members in matters such as, for example, the provision of grants from the funds of the International Commission for Optics for Symposia and Schools.

The rules and codes of practice may not contravene the Statutes of the ICO. They are proposed by the Bureau. The adoption, modification, or abolition of any rule or code of practice shall require either a majority of two-thirds of the members voting at a General Meeting of the Commission, or alternatively a majority of two-thirds of the total number of votes of all Members in a postal vote on a proposal unanimously approved by the Bureau.



RULES AND CODE OF PRACTICE OF THE INTERNATIONAL COMMISSION FOR OPTICS

Adopted by the ICO-16 General Meeting, Budapest, August 1993.

Modified by the ICO-17 General Meeting, Tajeon, August 1996.

Modified by the ICO-18 General Meeting, San Francisco, August 1999.

Modified by the ICO General Meeting, Florence, August 2002.

Modifications to be submitted to the ICO-20 General Meeting, Changchun, August 2005, are italicized.

Article 13 of the statutes of the International Commission for Optics mentions the possibility of establishing rules and codes of practice for ICO. In its meeting in Garmisch Partenkirchen on August 5, 1990, the ICO Bureau decided to setup such rules. These rules replace those adopted earlier and published in previous ICO Green Books such as "Towards ICO-XII", May 1982, pp 69-70.

Article 13 of the ICO statutes: "Rules and Codes of Practice.

Rules for the conduct of business determine procedures for dealing with matters not specifically laid down in these Statutes. They are meant to give guidance in general terms to the Bureau and to the Members in matters such as, for example, the provision of grants from the funds of the International Commission for Optics for Symposia and Schools.

The rules and codes of practice may not contravene the Statutes of the ICO. They are proposed by the Bureau. The adoption, modification, or abolition of any rule or code of practice shall require either a majority of two-thirds of the members voting at a General Meeting of the Commission, or alternatively a majority of two-thirds of the total number of votes of all Members in a postal vote on a proposal unanimously approved by the Bureau."

Table of contents

- 1 - Free circulation of scientists
- 2 - Membership
- 3 - General Meeting, votes and elections
- 4 - Participation of ICO in meetings and summer schools

- 5 - Relations with IUPAP
- 6 - ICO Committees
- 7 - ICO Travelling Lecturer Programme
- 8 - ICO Book
- 9 - ICO Prize
- 10 - Galileo Galilei Medal of ICO.
- 11 - ICO Fellowship Programme (discontinued).
- 12 - ICO Proceedings Donation Programme.
- 13 - Bureau meetings.
- 14 - ICO/ICTP Award for Young Scientists from Developing Countries.

Changes and additions decided by the Bureau, but not yet submitted to the General Assembly for approval, are italicised; the previous version, if there is one, is indicated in parentheses and barred. At the end of section 3, because of significant changes, a two column presentation has been used.

1 - Free Circulation of Scientists:

ICO adheres to the principles established by the International Council of Science (ICSU) concerning the free circulation of scientists. In particular, organisers of ICO meetings and of meetings cosponsored by ICO are requested to follow the "advice to organisers of international scientific meetings" issued by the ICSU Standing Committee on the free circulation of scientists. Note: the address of ICSU is 51, boulevard de Montmorency, 75016 Paris, France - Telephone: +33 1 45 25 03 29 - fax: +33 1 42 88 94 31, icsu@lmcp.jussieu.fr, <http://www.icsu.org>

2 - Membership:

Application

This section complements article 3 of the statutes.

The following are normally provided by a Territorial Committee applying for full membership:

- a) if the Territory is represented in IUPAP, a statement from the president of the body representing the Territory in IUPAP, that the Territorial Committee is authorised by that body to represent optical scientists and engineers of that Territory within ICO; if it is not, a motion to the same effect from a local scientific authority (Ministry, Academy, Council of Research,...);
- b) a letter of application signed by the chair person or representative of the applicant Territorial Committee, including a statement of adherence of the Territorial Committee to the ICO Statutes;
- c) a description of the organisation of the Territorial Committee, including the number of members, their designation procedure, their term of office, and the procedures that are set up to ensure a good representation of the optics community within the territory. If the Territory is not a member of IUPAP, the Territorial Committee and the ICO Secretary or Associate Secretary shall jointly take the necessary steps to request approval of the Territorial Committee by the council of IUPAP.

The application of a Territory for Associate Membership in ICO shall be made to the Secretary. It may be considered and approved by the Bureau. At the next General Meeting, the decision shall be made

- * either, subject to the desire of the applicant, to transform the associate membership into regular membership,
- * or to extend the associate membership until the next General Meeting,
- * or to terminate the associate membership.

In the case of a Territorial Committee applying for Associate Membership, item a) is required if the Territory is represented in IUPAP; item b) is always required.

The following are normally provided by an International Organisation Member applying for membership (whether as full member or as associate member, except for the number of shares, that applies only to full members):

- a) a letter of application signed by the President or its duly appointed representative, mentioning approval by the appropriate bodies in the Organisation, expressing adherence to the ICO Statutes, and including a proposition for the number of shares;
- b) a description of the operation of the Organisation, as provided for example by its bylaws, statutes, rules and codes of practice, and showing indication of its international character. This includes the requirement that at least 20% of the members are from outside the most represented country. The advice of the Territorial Committee (if any) in the most represented country will be considered.

Organisation and duties of Territorial Committees

The Territorial Committees normally have members elected or designated by some agreed procedure, with a well defined term of office; it is usually convenient for them to have a bureau or at least a chairperson; their organisation secures in all cases:

- a fair representation of the optics community in the Territory;
- approval and support of the scientific authorities of the Territory (Ministry, Academy, council of Research,...).

The ICO Bureau may at any time request information from the Territorial Committees about their organisation as described above.

Territorial committees maintain mailing lists of at least an extensive representative subset of the optics community in the territory. They will include in the mailing list any bona fide scientist with an address in their Territory and requesting to be included. They distribute at no charge to ICO any document sent to them in an appropriate quantity either by the ICO bureau or on its behalf. This applies in particular to the ICO Newsletter and to the Meetings and Schools with ICO participation.

Number of votes of International Organisation Members:

The number of votes N_{v2} of an International Organisation Member is determined according to its number of shares N_{s2} according to the following formula, rounded to the nearest integer but with a minimum of 1:

$$N_{v2} = N_{s2} \frac{\sum N_{v1}}{\max(\sum N_{s1}, \sum N_{s2})}$$

[Explanation note: e.g., assume the Territorial Committee members together have 200 shares and 100 votes (as is approximately the case in 1999). If the International Organisation Members (IOMs) together have 100 shares, they will have 50 votes (apart from round off errors). If the IOM have 200 shares, they will have 100 votes. If the IOM have 250 shares, they will still have 100 votes and no more. In fact, this is unlikely to happen in the near future, but this rule has been established in response to the concern about the Territorial Committee Members being dominated by the International Organisation Members and loosing control of the ICO.]

3 - General Meetings, votes and elections:

This section complements articles 4 and 8 of the statutes, that provide for a General Meeting of ICO every three years. ICO holds a Congress every three years. The ICO Congress consists of a business part, known as the ICO General Meeting, and an International Scientific Conference part.

Sessions:

Tradition holds that General Meetings are held in two sessions with more than 24 hours between the end of the first session and the beginning of the second session.

Attendance in the General Meeting

During any session of the General Meeting, the Secretary circulates a list of attendance. Each attendant signs the attendance list, indicating

- * their capacity of ICO Bureau member, official delegate an ICO Territorial Committee, representative of an associate member, member of an ICO Committee, or observer (more than one category may apply);
- * their country or ICO territory.

According to article 4 of the statutes, the number of official delegates of ICO Territorial Committees is equal to their respective numbers of votes. The number of official delegates may in no case exceed the number of votes, but if the actual number of official delegates at a General Meeting is smaller than the number of votes, the Territorial Committee still keeps the same number of votes.

Voting procedure:

Except as indicated in articles 8 (agenda of the General Meeting), 11 (duration of the commission), 12 (alterations to statutes) and 13 (alterations of the Rules and Codes of Practice) of the statutes, decisions of the General Meeting, including elections, are by a majority of the votes of the members present and taking part.

Except for the ICO Bureau election, where secret ballot is the rule, the ICO President decides whether votes need to be made by secret ballot. A member having N votes is provided with N ballot forms; this applies to both the Territorial Committee members and the International Organisation members. The member may decide to cast identical ballots or not.

Nomination procedure:

Candidates for the ICO Bureau may be nominated by the ICO nominating Committee (see section 6 below) and/or by the Territorial Committees. No other nomination may be received. The nominating Committee writes to the Territorial Committees at least one year before the election to request nominations for all positions in the ICO Bureau.

Endorsement of all candidates by their respective Territorial Committees is requested in all cases. In addition, Territorial Committees may endorse candidates from any Territory. At the time of the General Meeting, the delegation of the Territorial Committee to the General Assembly makes endorsements in its name.

Endorsement means that the person is considered by the endorsing Territorial Committee as a good person to stand for an ICO election and is to be understood as an intention, not an obligation, to support this candidate at the election, given the list of candidates at the time the endorsement is made.

The nominating Committee establishes a first list of candidates that is sent to the territorial Committees along with the agenda of the General Meeting.

Nominations may be received until 24 hours before the election. After the closure of nominations, the Nominating Committee establishes a final list of candidates. In addition, each candidate provides the Nominating Committee with a short curriculum vitae and a statement on his/her policy if elected for distribution to the General Meeting.

Except as provided in this and in the next subsection, there is no official campaign for the ICO Bureau.

Elections for the ICO Bureau:

Bureau Elections are by secret ballot in all cases.

Tradition holds that:

- * during the first session of the General Meeting, the Nominating Committee presents its report and indicates the current list of candidates for the ICO Bureau offices;
- * elections are held during the second session of the General Meeting;
- * for the offices of President, Treasurer, Secretary and Associate Secretary, each candidate is given, immediately before the vote, a short prescribed time (typically between 5 and 10 minutes) to present himself and his/her policy to the General Meeting. If there is only one candidate, that procedure is optional.

The elections are conducted by the chairperson of the Nominating Committee. After each vote, the Nominating Committee counts the votes and during that time, the General Meeting may treat agenda items other than the elections.

In the case of a tie for any vote, the elder candidate is declared elected.

For any vote, if the number of candidates is equal to the number of seats, the Nominating Committee Chairperson may decide that there is no vote and declare the candidate(s) elected.

Concerning the Vice-Presidents, the idea is that eight Vice-Presidents represent the Territorial Committee Members and are elected only by the Territorial Committee Members, while a number of Vice-Presidents represent the International Organisation Members and are elected only by the International Organisation Members. Since it is not advisable to have too many members on the Bureau, the number of Vice-Presidents representing Territorial Committee Members has been set to eight, and the maximum number of Vice-Presidents representing International Organisation Members has also been set to eight.¹

The votes are held in the following order:

Executive Committee (elected by all members):

- * one vote for the President;
- * one vote for the Treasurer;
- * one vote for the Secretary;
- * one vote for the Associate Secretary.
- * Vice-Presidents elected by Territorial Committee Members (only the Territorial Committee Members vote):

- in a first vote, members vote on four (4) names; all candidates are eligible, whether they come from industry or not; if, among the first four (4) candidates ranked by

¹ The whole point of having an International Organisation Member category is to give them close contact with the ICO and therefore they are well represented in the Bureau. Nevertheless, their representation in the Bureau cannot exceed that of the Territorial Committee Members. Just like it is impossible for all Territorial Committee Members to have someone on the Bureau, it will also be impossible for all International Organization Members to have someone on the Bureau if their number exceeds eight. While this is a fair rule, it may generate difficulties and frustration if the number of International Organization Members happens to be just slightly larger than eight. If that happens, one option open to the ICO President will be to invite those International Organization Members that have no Vice-President to attend part or all of the Bureau meetings as observers.

number of votes, no one is from industry, the first three (3) are declared elected; if at least one is from industry, the first four (4) are declared elected;

- if the first vote did not lead to the election of two (2) candidates from industry, a second vote is made, where only candidates from industry are eligible; as a result of this vote, the number of candidates from industry elected is brought to two (2); in that vote, members vote on one (1) or two (2) names, depending on how many candidates should be elected;
- in a last vote, all candidates are eligible, whether they come from industry or not, and the total number of Vice-Presidents is brought to eight; in that vote, members vote on three (3) to four (4) names, depending on how many candidates should be elected.

In every vote, the ballots forms given to the voting members should indicate the number of seats to be assigned by this vote; nevertheless, ballots with a smaller number of votes are valid. On one given ballot form, no name should be written more than once and the ballot form must be explicit about that rule. If nevertheless one name is duplicated, it is counted only once. Ballots containing a number of different names larger than the number of seats to be assigned are not valid.

Tradition holds that for ICO elections, the detail of votes are not made public but are kept by the Nominating Committee Chairperson. Consequently, it is not sensible to repeat votes in order to reach an absolute majority and the applicable majority rule is always the relative majority, i.e. the candidates that have more votes are elected, whether they have reached the absolute majority or not.

* Vice-Presidents representing International Organisation Members:

For the Vice-Presidents appointed by the International Organisation Members, prior to the General Meeting, every International Organisation Member appoints one representative. If the representative is elected on the Executive Committee or as one of the eight elected Vice-Presidents, the International Organisation Member appoints another representative at its earliest convenience.

- If there are less than eight International Organisation members, their representatives automatically become Vice-Presidents.
- If there are more than eight International Organisation Members, unless a consensus agreement is found among the International Organisation Members, the election of their eight Vice-Presidents takes place last and the candidates are automatically the appointed representatives of the International Organisation Members.

4 - Classification for the participation of ICO in Meetings and Schools:

There are four categories for ICO participation in meetings and in summer (or fall, or winter, or spring) schools:

1 - ICO General Meetings

2 - Other major ICO events "; whenever appropriate, these events may receive the designation "ICO Special Meeting", "ICO Topical Meeting", "ICO School", "ICO Regional Meeting"

3 - ICO Cosponsored Meetings and Schools

4 - ICO Endorsed Meetings and Schools.

The applicable rules are given in the table on the next page.

Caption: SR: strictly required
UR: usually required
NR: not required
PO: possible
NO: usually not

Any meeting with ICO participation, classified in category 2,3 or 4 may be given by the Bureau the name of ICO Satellite Meetings if it is scheduled to take place within 15 days of an ICO General Meeting or other major ICO event..

Note on registration fees:

As a rule, ICO adheres to the IUPAP upper limit on registration fees. Even though the participation of scientists from disadvantaged areas usually requires special measures independently of the cost of registration, high registration fees tends to limit participation, in particular from students and to be a form of discrimination between scientists.

Specifically, ICO conferences submitted to IUPAP sponsorship must necessarily to follow the IUPAP limit in all cases. These are the General Meetings, Topical Meetings and other major ICO events — usually one per year. For the other events with ICO participation, registration fees higher than the limit can occasionally be accepted provided that an option exists for any scientist to request, at least six weeks in advance, application of the IUPAP limit and still be fully registered, perhaps with the exception of some social events. That option must be known to registrants.

Decision procedure:

The ICO Bureau approves all forms of ICO participation in international conferences, and authorizes the related grants:

- * *the meeting and school applications are processed twice annually, with the deadlines of applications on April 15 and October 15 of each year*
- * *the applications must be received by ICO Secretariat by a deadline that is at least 12 months prior to the event and before the first announcement*
- * *when the applications are received, the ICO President, Treasurer, and Secretary or Associate Secretary get in touch by some fast procedure and issue a memo including the background information relevant to the meeting. The memo may include a proposition concerning the category of ICO meeting applicable, the opportunity to grant the sponsorship requested, and the opportunity to grant financial support*
- * *reply form is sent to the Bureau members; it includes the proposition*
- * *in any event, if the approval by the relevant Territorial Committee is not clear from the application form, the Territorial Committee is contacted at the same time as the Bureau members and it has a right of veto for 45 days after the letter has been sent; the default is that there is no veto*
- * *no later than one month after application deadline, the decisions are made on the basis of the replies obtained so far from the Bureau members. Only the votes received are*

counted, the votes not received are not considered as approvals of the proposition of the subcommittee.

<u>ICO CATEGORY</u>	<u>1-ICO General 2- Other major ICO events</u>	<u>3-ICO Cosponsored</u>	<u>4-ICO Endorsed</u>
<u>REQUIREMENTS</u>			
a) ICSU rules on free movement of scientists	SR	SR	SR
b) good scientific quality as perceived by the ICO Bureau	SR	SR	SR
c) international character (typically > 30% participants and > 50% program Committee members from outside territory)	SR	SR	SR
d) industrial participation in Committees	UR	UR	UR
e) registration fee to follow IUPAP rules	SR	UR (see text)	UR (see text)
f) timeliness very clear, novelty	SR	UR	UR
g) participation in the ICO Proceedings Donation Programme	UR	UR	NR
h) approval by Territorial Committee (if there is one)	SR	SR	SR
<u>ICO PARTICIPATION</u>			
h) ICO Secretary or Associate Secretary in Organising Committee	SR	UR	NR
i) ICO designates one member of Programme Committee	SR	SR	UR
j) ICO associated from the beginning (usually at least 18 months in advance)	SR	SR	NR
k) use of ICO logo	SR	UR	PO
l) grant	PO	PO	NO
m) loan (reimbursable whether deficit or benefit)	PO	PO	NO
n) participation in budget, risk and benefits	PO	PO	NO
o) support for participation of scientists from regions of the world requiring special support	PO	PO	PO
p) announcements in Newsletter	SR	SR	PO
q) distribution of documents through ICO channels	SR	PO	NO

Financial participation of ICO:

According to the table above, ICO may give a grant or a loan to meetings and schools of categories 1, 2 and 3. A special form of a grant, that can apply to all categories, is the financial support for the participation of scientists from regions of the world requiring special support. In that case, the amount is usually sent to the organisers with the instruction that they should spend it on financial support to identified scientists from such regions, inform the recipients of the support from ICO and send the list of recipients to ICO; whenever possible, the organisers should be requested to complement the ICO grant, for example by waiving the registration fees for the recipients.

Alternatively, ICO may also wish to take part where practicable in the risks or benefits of meetings and schools of categories 1, 2 and 3. That is possible, if the local law permits, in the following conditions:

- * ICO accepts a financial responsibility up to an amount of X;
- * the amount X is paid by ICO to the meeting organisers in the form of a treasury advance; it is made available to the organisers by the ICO Treasurer as soon as they request it;
- * at the closing of the account and in no case later than one year after the meeting is finished, if there is a deficit:
 - if the deficit is smaller than X, ICO will cover it in its entirety, i.e. the organisers will only have to reimburse ICO the difference;
 - if the deficit is larger than X, then ICO will cover it for an amount X, i.e. no money will be reimbursed to ICO;
- if there is a surplus:
 - if the surplus is smaller than 4X, ICO will receive 25 % of the surplus, i.e. the organisers will reimburse ICO the amount X plus a quarter of the surplus;
 - if the surplus is larger than 4X, the organisers will reimburse ICO two times X.

Depending on circumstances, slight modifications to this scheme may be made by the Bureau.

Any given Bureau may approve meeting support up to the triennial Meeting Support budget for the triennium of its term, augmented with any return from previously granted participation in risk. Loans are not counted and are limited only by the approval of the Treasurer based on the account balance. There is continuity in the ICO Bureau, therefore the Bureau may approve meetings to be held after the next Bureau elections.

5 - Relations with IUPAP:

IUPAP, at each of its General Meetings designates one Representative to ICO. The IUPAP Representative takes part in the ICO General Meeting.

ICO will normally request sponsorship by IUPAP of its General and Topical Meetings.

ICO will normally request to have associate members in some IUPAP Commissions, as appropriate to maintain close relations.

6 - ICO Committees:

List of ICO Committees:

In order to assist the General Meeting and the Bureau in their activities, ICO has established the following committees:

- * Nominating Committee
- * Long Range Planning Committee
- * Committee for the Regional Development of Optics
- * Education Committee
- * Travelling Lecturer Committee
- * Standards Committee
- * ICO Prize Committee
- * ICO Galileo Galilei Award Committee

Duties of the committees:

The specific purpose of each committee is indicated below. Committees report on their activity at each General Meeting and, as appropriate, at each meeting of the Bureau.

- * The purpose of the Nominating Committee is indicated in section 2 above.
- * The purpose of the Long Range Planning Committee is to propose suitable new actions for ICO, with suitable attention for the inclusion of industrial optics in ICO's activities.
- * The purpose of the Committee for the Regional Development of Optics is to find and implement actions whereby ICO can promote the transfer of optical knowledge and provide practical help to optical scientists and engineers in Developing Nations and in general, geographical areas where optics is not well developed.
- * The purpose of the Education Committee is to promote education in Optics worldwide.
- * The purpose of the Travelling Lecturer Programme Committee is indicated in section 7 below.
- * The purpose of the Standards Committee is to serve as a channel of communication for work on standards in optics, in relation with ISO.
- * The purpose of the ICO Prize Committee is indicated in section 9 below.
- * The purpose of the ICO Galileo Galilei Award Committee is indicated in section 10 below.

Membership of the Committees:

Each committee has a chairperson and members. The following rules apply:

- a) The chairperson of all ICO committees is always a member of the ICO Bureau.
- b) The ICO past-President is ex officio the chairperson of the Nominating Committee and the members are appointed by the chairperson.
- c) The ICO President is ex officio the chairperson of the long range planning Committee and the members are appointed by the chairperson.
- d) The ICO Treasurer is ex officio the chairperson of the Travelling Lecturer Committee.

- e) The ICO Secretary or Associate Secretary is ex officio member of all Committees except the Nominating Committee, the Long Range Planning Committee and the ICO Prize Committee.
- f) Except for the cases of rules b, c, and e above, the members are proposed by the chairperson and appointed by the Bureau. To avoid delays in the operation of Committees, the appointment of members by the Bureau can be made by mail.

7 - ICO Travelling Lecturer Programme:

ICO has established in 1988 a Travelling Lecturer Programme to promote lectures on modern aspects of optics in interested territories by scientists of international reputation with good lecturing skills. The program is aimed specially at developing nations, but is not necessarily restricted to them. As a rule, it is expected that the lecturer's local expenses will be met by the host institution and that ICO's contribution will be towards the travel costs. Scientists or host groups interested in participating in this program should write to the Treasurer of ICO with details of the proposed lecture program and ICO support requested.

Within the financial limits of the budget, an ICO Committee, with the ICO Treasurer as chairperson, decides for the ICO Travelling Lecturer grants. This Committee in principle does not meet, but works by mail and telecommunication facilities so as to secure the fastest response compatible with good operation.

8 - ICO Book:

ICO has established in 1990 a series of books: the title "International Trends in Optics" has been chosen for the series. There is one volume every three years. The ICO President, the ICO past-President or one of the ICO former Presidents acts as the editor.

The books are intended to provide an authoritative overview of research that is underway in the field of optics throughout the world. The articles should be suitable for the specialist and non-specialist alike and should provide general, readable overviews of many different aspects of optical science and engineering. They should tend to be less formal than the standard technical reviews found in journals. In addition to examining their designated topics, the authors should also discuss unsolved research problems and speculate on future directions in their fields.

The royalties typically paid to the editor and the authors are instead paid to ICO.

9 - ICO Prize:

ICO has established in 1982 the ICO Prize, to be given each year to an individual who has made a noteworthy contribution to optics, published or submitted for publication before he or she has reached the age of 40. (Specifically, the Prize winner must not have reached the age of 40 before December 31 of the year for which the Prize is awarded). The character of the work of successive Prize recipients should preferably alternate between predominantly experimental or technological and predominantly theoretical. The "noteworthy" contribution in optics is measured chiefly by its impact (past or possibly future) on the field of optics generally, opening a new subfield or significantly expanding an established subfield in research or technology.

The ICO Prize involves:

- a citation,
- a cash award of an amount established in the triennial budget of the ICO and indicated every year in the call for nominations
- travel support to attend said meeting to an amount to be determined by the Bureau²,
- waiver of registration fees at said meeting
- and the invitation to present an invited paper and receive the award at the next ICO Congress or another ICO meeting mutually agreed to by the Bureau and the award winner.³

Every year, the ICO Prize Committee issues a call for nominations that is published in the ICO Newsletter, receives the nominations and selects the recipients for approval by the Bureau at its next meeting. The award needs not be made each year if the Prize Committee so chooses. The Prize is preferably given to an individual, but it can be shared by two persons. Eligibility for the Prize is not excluded by previous prizes awarded to the individual. The selected Prize winner is then announced in the ICO Newsletter and, if possible, in one or more optics journals. The prizes are presented at each ICO General Meeting.

10 - ICO Galileo Galilei Medal:

- 10.1 - The Galileo Galilei medal of ICO is awarded for outstanding contributions to the field of optics which are achieved under comparatively unfavourable circumstances.
- 10.2.1 - The outstanding contributions in the field of optics should refer to:
- fundamental scientific questions or problems, or
 - research or development of optical methods or devices, or
 - scientific or technical leadership in the establishment of regional optical centres.
- 10.2.2 - "Comparatively unfavourable circumstances" refers to difficult economic or social conditions or lack of access to scientific or technical facilities or sources of information.
- 10.2.3 - The outstanding contributions must be documented, if applicable, by internationally acknowledged publications. Exceptionally, reports can be considered, provided that they are made available to the Award Committee.
- 10.3 - The award is normally given to one person. Exceptionally, however, if a collective contribution is judged to be worthy of the award a team of several persons may be selected.
- 10.4 - Every year, the ICO Galileo Galilei Award Committee issues a call for nominations that is published in the ICO Newsletter, receives the nominations and selects the

² For 2003-2005, these amounts are a cash award of US\$2000 and up to US\$1000 towards travel expenses.

³ In addition, the Carl Zeiss foundation has generously agreed to donate an Ernst Abbe medal.

winner for approval by the Bureau at its next meeting. The award need not be given every year if the Bureau so chooses.

- 10.5 - The award consists of:
- a) the Galileo Galilei Medal offered by the Italian Society for Optics and Photonics
 - b) a cash award of an amount determined by the Bureau
 - c) assistance in travel as determine by the Bureau⁴ to present an invited paper and receive the award at the next ICO Congress or another ICO meeting mutually agreed to by the Bureau and the award winner⁵,
 - d) waiver of registration fees at said meeting
 - e) special attention and appropriate measures of ICO to support the future activities of the award winner.

11 - ICO Fellowship Programme:

This section was cancelled in 2002.

12 - ICO Proceedings Donation Programme:

Territorial Committees and scientists from countries that are preparing for ICO membership may request to receive copies of the Proceedings volumes issued on the occasion of meetings participating in the ICO Proceedings Donation Programme. At least all ICO General, Topical, Regional and Cosponsored Meetings participate in the Programme. These proceedings will be kept in a scientific library open to all researchers and engineers working in optics. The cost of printing and shipping will be born by the organisers of the meetings. The ICO Secretariat will keep the mailing list and send the appropriate mailing labels in due time to the meeting organisers. In view of the expenses involved, there will be a limit of one address per ICO Member Territory and one address per country preparing for ICO membership. In addition, it is expected that Member Territories and countries where the access to scientific literature is relatively satisfactory will refrain from requesting to benefit from the Programme.

13 - ICO Bureau Meetings:

The ICO Bureau meets typically one time per year in the years without a General Meeting, and in addition once immediately before and once immediately after every General Meeting.

14 – ICO/ICTP Award for Young Researchers from Developing Countries:

⁴ For 2003-2005, these amounts are a cash award of US\$1000 and up to US\$1000 towards travel expenses.

⁵ The Società Italiana di Ottica and Fotonica has generously agreed to donate the Medal for a number of years.

Approved by ICTP, August 1999.

ICO, the International Commission for Optics, and ICTP, the Abdus Salam International Centre for Theoretical Physics, Trieste, have agreed to establish a joint prize, called the ICO/ICTP Award. It is reserved for young researchers from developing countries⁶, who conduct their research in a developing country.

The award will be given to scientists less than 40 years old⁷ who are active in research in Optics and have contributed to the promotion of research activities in Optics in their own or another developing country.

The award consists of the following:

1) the ICO gives a cash amount⁸ and a diploma.

2) The ICTP invites the winner to attend a three weeks College⁹ at Trieste at the next appropriate opportunity, and to give a seminar on his/her work when appropriate. ICTP will pay for travel and living expenses.

The award will be delivered to the winner at Trieste in the presence of representatives of ICO and ICTP.

The award is given to one person every year. The winner is selected on the basis of nominations received by the Award Committee in response to a call published by both ICO and ICTP. The Award Committee consists of four members, of which two are appointed by ICO and two by ICTP for a period of three years. Among the four members, ICO appoints the Committee Chair.

The nominations must be documented by a complete curriculum vitae including a list of publications and selected reprints (no more than three) as well as a complete employment history and a description of the nominee's achievements for the promotion of research activity in developing countries.

⁶ Developing Countries are defined by the list of Developing Countries of the United Nations Organisation.

⁷ Specifically, the winner must not have reached the age of 40 on December 31st of the year for which the award is given.

⁸ For 2003-2005, the amount is US\$1000.

⁹ The ICTP in Trieste organises a Winter College on Optics, or Laser Physics, or Photonics, or Quantum Optics once a year, normally three weeks in February. In the past already, several of these Winter Colleges were organised in cooperation with the ICO, while the ones in February 2004 and 2005 are being organised in cooperation with the ICO, OSA (Optical Society of America), SPIE and OWLS.

THE ICO TERRITORIAL COMMITTEES ICO MEMBERSHIP LIST, MAY 2005

The ICO Territorial Committees

Argentina

Units: 2, votes: 2, member since 1981

Jorge O. Tocho
Centro de Investigaciones Ópticas
(CONICET-CIC)
13 y 506, 1897 La Plata, Argentina
TEL (221) 484 2957 / 471 5249
FAX (221) 471 2771,
jorget@ciop.unlp.edu.ar

Australia

Units: 6, votes: 3, member since 1959

Dr Duncan Butler
The Australian Optical Society, Secretary
ARPANSA, 619 Lower Plenty Road
Yallambie VIC 3085, Australia
tel: +61 3 9433 2274, fax: +61 3 9432
1835, e-mail:
duncan.butler@arpansa.gov.au

Belgium

Units: 4, votes: 3, member since 1948

Dr. Yvon Renotte
CBO/BCO, President
c/o Hololab Université de Liège, Institut de
Physique, B5 Sart Tilman, B-4000 LIEGE,
Belgium, tel: 41.66.37.72, fax:
41.66.23.55, e-mail: y.renotte@ulg.ac.be

Bielorussia

Units: 2, votes: 2, member since 1993

Prof. Andrey M. Goncharenko
Territorial Committee for Optics
Optical Territorial Committee
Republic of Belarus, Prospekt Francis
Sokorina 66, 220072 MINSK, Bielorussia
tel 39 58 16, fax 39 31 63, email:
dopit@adonis.msk.su

Brazil

Units: 4, votes: 3, member since 1984

Luiz Goncalves Neto
BCO, President
Depto of Electrical engineering-EESC
Av. Dr Carlos Botelho 1465
Depto: EESC, 13560970, Sao Carlos, SP,
Brazil,
tel: 16-273.9333, fax: 16-273.9333, e-mail:
lgneto@sel.eesc.sc.usp.br

Canada

Units: 8, votes: 4, member since 1956

Prof. Roger A. Lessard
ICO Territorial Committee, President
Centre d'optique, photonique et lasers
Université Laval, Pavillon Vachon
QUEBEC CITY G1K 7P4, Canada
tel: +1 418 656 3436, fax: +1 418 656
2040, e-mail: rlessard@phy.ulaval.ca

Chinese Optical Society

Units: 8, votes: 4, member since 1987

Prof. Guoguang Mu
ICO Territorial Committee, President
Institute of Modern Optics, Nankai
University, 94 Weijin Rd
Tianjin 300071, P.R. China
tel: +86 22 2350 3690, fax: +86 22 2350
3118, e-mail: mugg@nankai.edu.cn
express mail address: Bldg 57 Room 401,
Xi nan cun, Nankai University, Tianjin
300071. P.R.China
express mail address: Bldg 21-301, Bei Cu,
Nankai University, Tianjin 300071

Colombia*Units: 1, votes: 1, member since 1990*

Prof Angela M. Guzman
 Territ. Committee for Optics
 Departamento de Fisica
 Universidad Nacional de Colombia,
 Bogota, Columbia
 tel: +57 1 3165000xt13037, fax: +57 1
 3165669, e-mail:
 angela@ciencias.unal.edu.co
 other phone extension is 13039

Cuba*Units: 1, votes: 1, member since 1993*

Dr Angel Augier
 Optics Section Cuban Phys Soc, president
 Inst Sup Politecnico J. A. Echeverria
 Departamento de Fisica
 Calle 127 s/n, Cujae, Marianao
 HABANA 19390, Cuba
 tel: +537 20 7419, fax: +537 27 1574, e-
 mail: augier@electronica.ispjae.edu.cu

Czech Republic*Units: 2, votes: 2, member since 1948*

Dr. Miroslav Hrabovsky
 Territorial Committee of ICO, secretary
 SLO UP and FZU AV CR
 17. Listopadu 50
 772 07 Olomouc, Czech Republic
 tel: 420 68 522 3936, fax: 420 68 522
 4047, e-mail: hrabovsky@sloup.upol.cz,
 alternate phone: 42 2 84 3741 fax0609

Denmark*Units: 3, votes: 2, member since 1987*

Mrs Susanne Bergstroem
 Territorial Committee for Optics
 Danish Optical Society, c/o CAT Science
 Park, PO BOX 30,
 4000 ROSKILDE, Denmark
 tel: +45 46 77 59 21, fax: +45 46 32 19 19,
 e-mail: susanne.bergstroem@catscience.dk
 The Danish Optical Society
 Contact: Mrs. Pia Adelheid Jørgensen
 email: PJ@adm.iha.dk

Ecuador*Associate since 2005*

Ph. D. Dr. Nikolai Espinosa
 Optical Committee of Ecuador, President
 C.E.I.N.C.I. - E.S.P.E.
 Centro de Investigaciones Científicas
 (Scientific Researches Center)
 Escuela Politécnica del Ejercito (Army
 Polytechnic School)
 P.O.BOX 17-07-9661, QUITO-
 ECUADOR
 fax:593-2-2534395
 phone: 593-9-7072532
 e-mail: n_espinosa@McShen.zzn.com
 Web: <http://www.espe.edu.ec/index.htm>

Estonia*Units:1, votes:1, member since 2002*

Prof Peeter Saari
 Estonian Committee for Optics
 Institute of Experimental Physics,
 University of Tartu, Tähe 4, Tartu 51010,
 Estonia, Tel: +372 7 383 016, fax: +372
 5109018, e-mail: psaari@fi.tartu.ee
 Web: <http://www.physic.ut.ee/efs/>

Finland*Units: 3, votes: 2, member since 1978*

Dr. Ari Friberg
 Territ. Committee for Optics
 Royal Institute of Technology (KTH),
 Dept of Microelectronics & Inform. Tech.
 Electrum 229, SE-164 40 KISTA, Sweden
 tel: +46 8 790 4191, fax: +46 8 789 6672,
 e-mail: ari.friberg@optics.kth.se

France*Units: 15, votes: 5, mb. since 1948*

Mr. Philippe Refrégier
 Comité Français d'Optique, Président
 Société Française d'Optique
 Centre Scientifique - Bât. 503
 91403 ORSAY cedex, France
 tel: +33 1 69.35.88.16, fax: +33 1
 69.85.35.65, e-mail: sfo@france-

optique.org, express mail address: Institut d'Optique, porte 127, batiment 503, centre scientifique, 91400 Orsay

Germany (Federal Republic)

Units: 15, votes: 5, mb. since 1953

Prof. Gert Von Bally
Laboratory of Biophysics
Medical Centre University of Münster
Robert-Koch-Str. 45, 48129 Münster
Germany, Tel. (+49)-251-8356888
Fax. (+49)-251-8358536
Email: LBiophys@uni-muenster.de

Ghana / West Africa

Units: 1, votes: 1, member since 1993

Dr Paul Buah-Bassuah
Ghana/West Africa Territorial Committee,
Secretary General
Ghana Committee for Optics
Laser and Fibre Optics Centre
Dept of Physics, Univ. of Cape Coast,
Cape Coast, Ghana
tel: +233 42 33773, fax: +233 42 32446
telex P&T 3039 BTH 12 GH or UCC 2552
GH

Professeur Ahmadou Wagué
Ghana/West Africa Territorial Committee,
Senegal contact, Département de Physique
Université Cheikh Anta Diop, Fac des
Sciences et Techniques, DAKAR, Sénégal
tel: +221-8.25.69.80, fax: +221-8.25.69.80,
e-mail: wague@ucad.refer.sn

Prof. Kedro Sidiki Diomandé
Ghana/West Africa Territorial Committee,
Ivory Coast contact
Université Nationale de Côte d'Ivoire
Département de Physique, Faculté
Sciences
B.P. 582, 22 ABIDJAN, Côte d'Ivoire
e-mail: cnra@aviso.ci or
diomkap@yahoo.fr

Greece

Associate since 2002

Prof Nikos Vainos
Engineered Photonic Media Lab.
NHRF-The National Hellenic Research
Foundation , TPCI
48, Vas. Constantinou Ave., Athens 11635,
Greece
tel: +30 10 7273887, 10 7273792, 10
7273795 (secr), fax +30 10 7273794, e-
mail vainos@eie.gr

Hungary

Units: 3, votes: 2, member since 1963

Dr G Lupkovics
Territorial Committee for Optics
Sci. Soc. Optics, Acoustics & Filmtech.
OPAKFI, Fo u. 68, 1027 BUDAPEST
Hungary
tel: +36 1 202 0452, fax: +36 1 202 0452,
e-mail: akos1@mail.mata.v.hu

India

Units: 4, votes: 3, member since 1990

Prof. L.N. HAZRA
Optical Society of India, Secretary General
Department of Applied Physics
University of Calcutta, 92 Acharya
Prafulla Chandra Road, Calcutta 700 009,
India
tel: 33 350 8386 ext 303, fax: 33 351 9755,
e-mail: ln hazra@sify.com

Indonesia

Units: 1, votes: 1, member since 1987

Dr A Handojo
Territorial Committee for Optics
Teknik Fisika ITB, Jl. Ganesha 10,
Bandung 40132, Indonesia

Ireland

Units: 1, votes: 1, member since 1984

Prof J.G. Mc Inerwey
Territorial Committee for Optics
National Committee for Physics
Royal Irish Academy, 19 Dawson Street,

Dublin 2, Ireland
 tel: 00 353 1 6762 570, fax: 00 353 1 6762
 346, e-mail: info@ria.ie, or
 s.breathnach@ria.ie

Islamic Republic of Iran

Units: 1, votes: 1, member since 1993
 Prof. M.T. Tavassoli
 Territorial Committee for Optics
 Iranian Committee for Optics
 c/o the Physical Society of Iran
 P.O.Box 15875-1311, TEHRAN, Iran
 fax: +98 21 88 66481, e-mail:
 physoc@rose.ipm.ac.ir,
 alternate fax: 21 827234

Israel

Units: 2, votes: 2, member since 1972
 Prof J Shamir
 Territorial Committee for Optics
 Electro Optics Laboratory
 Department of Electrical Engineering
 Technion, Haifa 32000, Israel
 tel: +972 4 829 4738, fax: +972 4 832
 3041, e-mail: jsh@ee.technion.ac.il

Italy

Units: 12, votes: 5, mb. since 1948
 Dr. Giancarlo Righini
 Commissione Italiana de Ottica, President
 "Nello Carrara" Inst. of Appl. Physics, CNR
 Via Panciatici 64, 50127 FIRENZE, Italy
 tel: +39 055 423 5239, fax: +39 055
 412878, e-mail: g.c.righini@ifac.cnr.it
 web: <http://siof.iroe.fi.cnr.it/>

Japan

Units: 15, votes: 5, member since 1953
 Prof. Koichi Iwata
 Japanese Territorial Committee of ICO,
 President
 Osaka Science and Technology Center
 Ayumino 2-7-1, Izumi, Osaka 594-1157,
 Japan, phone: +81-725-51-2532,
 fax: +81-725-51-2598
 e-mail: k-iwata@tri.pref.osaka.jp

Korea (Republic of)

Units: 3, votes: 2, member since 1975
 Dr. Byoung Yoon Kim
 ICO Territorial Committee, Korea
 President
 Novera Optics
 KT Second Research Center
 463-1 Jeonmin-dong, Yuseong-gu
 Daejeon 305-811 Korea
 Tel: 82-42-602-3777
 Fax: 82-42-602-3799
 E-mail: yoon.kim@noveraoptics.co.kr

Latvia

Units: 1, votes: 1, member since 2002
 Prof Janis Spigulis
 Latvian Committee for Optics
 University of Latvia, Physics Department
 and IAPS, Raina Blvd. 19, Riga, LV-1586,
 Latvia, Tel/fax: +371 7228249,
 e-mail: janispi@latnet.lv

Lithuania

Unit: 1, votes: 1, member since 2003
 Prof. Dr. Habil. Alexandr Dementjev
 Chair of Lithuanian ICO Territorial
 Committee
 Head of Nonlinear Optics and Spectroscopy
 Laboratory, Institute of Physics, Savanoriu
 av. 231, LT-2053 Vilnius, Lithuania
 Tel: +370 5 2661645 (office), +370 5
 2414317 (home), Cellular: +370 680
 21412
 Fax: +370 5 2602317
 e-mail: aldement@ktl.mii.lt

Mexico

Units: 2, votes: 2, member since 1972
 Dr. Oracio Barbosa García
 President
 Academia Mexicana de Óptica
 Centro de Investigaciones en Óptica, A.C.
 Loma del Bosque #15
 C.P. 37150, Apdo. Postal 1-948
 Phone: 52-477-773 1017

Fax: 52-477-717 5000
e-mail: barbosag@cio.mx

Moldova

Associate since 2004

Prof. Andrei Andries
Director of Center of Optoelectronics
Institute of Applied Physics
Academy of Sciences of Moldova.
Academiei Street, 1, 20028 Chisinau
Moldova, Tel/Fax: +373 22 739805
e-mail: andries@asm.md
<http://www.asm.md>

Morocco

Associate since 2002

Professeur Mustapha Haddad
Président de la Société Marocaine
d'Optique (SMO)
Université Moulay Ismaïl
Faculté de Sciences Meknès
BP 4010 Beni M'hamed
Meknès, Morocco
Tel.: +212 555 388 70
Fax: +212 555 368 08
e-mail: mhaddad22@yahoo.fr

Professeur Mohammed Semlali
Société Marocaine d'Optique (SMOP)
Faculté des Sciences
Université Mohammed V – Agdal
B.P.: 8811 Rabat-Agdal, Morocco
Tel: 212 66 30 06 51
Fax: 212 37 77 74 70
E-mail: medsemlali@hotmail.com
www.smop.apinc.org

Netherlands

Units: 4, votes: 3, member since 1948

Dr. J. J. H. B. SCHLEIPEN
Dutch Society for Optics and Photonics
Philips Research, WA 12, Prof. Holstlaan
4, 5656 AA Eindhoven, Netherlands
tel: 40 2745117, fax: 40 2744927, e-mail:
jean.schleipen@philips.com

New Zealand

Units: 1, votes: 1, member since 1974

Mr. Eddie R Davis
Territorial Committee for Optics
Royal Society of New Zealand
PO Box 598, Wellington, New Zealand
tel: 64 4 470 5769, fax: 64 4 473 1841, e-
mail: eddie.davis@rnsz.org

Norway

Units: 3, votes: 2, member since 1981

Dr Jakob J. Stamnes
cs, ICO contact
Physics Department, University of Bergen,
Allegaten 55, N 5007 Bergen, Norway
tel: +47 55 58 28 18, fax: +47 55 58 94 40,
e-mail: jacobj.stamnes@fi.uib.no

Optical Engineering Society Taipei China

Units: 3, votes: 2, member since 1981

Dr. Yung S. Liu
Industrial Technology Institute
Bldg. 78, 195 Sec.4, Chung-Hsing Rd.,
Chutung 310, Hsinchu, Taiwan, R.O.C.
tel: +886-3-13525, fax: +886-3-5913525,
e-Mail: rocoes@itri.org.tw

Poland

Units: 4, votes: 3, member since 1948

Prof. K. Chalasinska-Macukow
Polish Territorial Committee of ICO
Div of Inf. Optics, Instit of Geophysics,
Faculty of Physics, Warsaw University,
Pasteura 7, 02-093 Warsaw, Poland
tel: 4822 8243958, fax: 4822 8222387, e-
mail: kmacukow@mimuw.edu.pl

Romania

Units: 1, votes: 1, member since 1993

Prof. V.I. Vlad
Territorial Committee for Optics
Institute of Atomic Physics, NILPRP Laser
Department, P.O.B. MG-36, 76900
Bucharest, Romania,
tel: +401 423 14 70 or +401 780 4290, fax

+401 423 1791 or +401 423 1470
e-mail: vlad@ifin.nipne.ro

Russia

Units: 18, votes: 6, mb. since 1981
Prof. Sergei N. Bagayev
Territorial Committee of ICO, President
Director, Institute of Laser Physics
Siberian Branch of the RAS, 13/3 Prospekt
Lavrentyev, Novosibirsk, 630090, Russia
tel: +7 3832 332489, fax: +7 3832 332067,
e-mail: bagayev@laser.nsc.ru

Prof. Evgueni M. Zolotov
Territ. Committee for Optics, Vice
Chairman
General Physics institute of the RAS, 38
Vavilov str, GSP-1, Moscow, 117942,
Russia
tel: +7 095 1350210, fax: +7 095 135
0270, e-mail: zolotov@kapella.gpi.ru

Singapore

Units: 1, votes: 1, member since 1984
Dr S C (Siu Chung) Tam
Territorial Committee for Optics
School of Electrical and Electronic Eng.,
Division of Microelectronics, office S2-
B2a-04, Nanyang Technological
University, Nanyang Avenue, Republic of
Singapore 639798
tel: +65 7905501 or +65 9796 9049, fax:
+65 7920415, e-mail:
esctam@ntuvax.ntu.ac.sg

Slovak Republic

Units: 1, votes: 1, member since 1948
Dr. Dagmar Senderakova
Territorial Committee of ICO, Chairman
Komenski University, Faculty of
Mathematics, Physics and Inf., Mlynska
dolina F2, 84215 BRATISLAVA, Slovak
Republic, tel: +421 2 60295391, e-mail:
dagmar.senderakova@fmph.uniba.sk

Spain

Units: 4, votes: 3, member since 1948
Prof Santiago Vallmitjana
Universitat de Barcelona
Laboratori d'Òptica, Dept. Física Aplicada
i Òptica, Diagonal 647, 08028 Barcelona,
SPAIN, Tel 34 93 402 1202
Fax 34 93 402 1142
e-mail: santi.vallmitjana@ub.edu

Sweden

Units: 8, votes: 4, member since 1948
Professor Fredrik Laurell
The Royal Institute of Technology (KTH)
Dept. of Laser Physics and Quantum
Optics
AlbaNova University Center
SE-106 91 Stockholm, Sweden
Phone +46-8-5537 8153
Fax +46-8-5537 8216
fl@laserphysics.kth.se;
www.laserphysics.kth.se
<http://www.laserphysics.kth.se/>

Switzerland

Units: 4, votes: 3, member since 1948
Prof Dr Hans Peter Herzig
SSOM, ICO Contact
Universite de Neuchâtel, Institut de
Microtechnique, Rue A.L. Bréguet, 2000
NEUCHATEL, Switzerland
tel: (41)32 718 3270, fax: (41)32 718
3201, e-mail: HansPeter.Herzig@unine.ch

Prof. Dr. habil. Thomas Graf
SSOM, ICO Contact
Director
Institut fuer Strahlwerkzeuge
University of Stuttgart
Pfaffenwaldring 43
D-70569 Stuttgart, Germany
Tel.: +49 (0) 711 685 6840
Fax: +49 (0) 711 685 6842
e-mail: graf@ifsw.uni-stuttgart.de
www.ifsw.uni-stuttgart.de
www.fgs.de

Tunisia*Associate since 2001*

Prof. Zohra Ben Lakhdar
 Optical Committee of Tunisia, President
 Department of Physics, Faculty of
 Sciences of Tunis, Tunis, Tunisia
 tel: 00216 1 872600, fax: 00216 1 885073,
 e-mail: Zohra.Lakhdar@fst.rnu.tn

Turkey*Units: 1, votes: 1, member since 1996*

Mr. Ali Serpengüzel
 Optical Committee of Turkey, President
 Koç University, Department of Physics,
 Rumeli Feneri Yolu - Sariyer, ISTANBUL
 80910, Turkey
 tel: +90 212 338 1312, fax: +90 212 338
 1547, e-mail: aserpenguzel@ku.edu.tr

Ukraine*Units: 1, votes: 1, member since 1993*

Prof. Oleg Angelski
 ICO Territorial Committee, Ukraine,
 President
 Chernovtsy University, Correlation Optics,
 2, Kotsyubinsky Street, 58012 Chernovtsy,
 Ukraina
 tel: (7) 03722 44730, fax: (7) 03722
 41314, e-mail: oleg@optical.chernovtsy.ua

United Kingdom*Units: 12, votes: 5, mb. since 1948*

Dr. A.D.W. Jones
 UK Territorial Com. for Optics
 The Institute of Physics, 76, Portland
 Place, London W1B 1NT, United
 Kingdom
 tel: +44 20 7470 4800, fax: +44 20 7470
 4848, e-mail: physics@iop.org
 web: <http://www.iop.org>

United States of America*Units: 18, votes: 6, mb. since 1948*

Dr Tamae Maeda Wong
 USNC/ICO, Senior Progr Officer
 Board on Chemical Sc. & Technology,
 National Academy of Sciences, National,
 Research Council, 2101 Constitution
 AvNW, Washington DC 20418, United
 States of America
 tel: 1-202 334 2807, fax: 1-202 334 2154,
 e-mail: twong@nas.edu

Kari Apter
 USAC/ICO
 c/o Optical Society of America
 2010 Massachusetts ave NW, Washington
 DC 20036, United States of America
 fax: 1-202 416 6134, e-mail:
 kapter@osa.org

Venezuela*Units: 1, votes: 1, member since 1997*

Dr Aristides Marcano O.
 Instituto Venezolano de Investigaciones
 Cientificas, Centro de Fisica
 Apartado Postal 21827
 Caracas, 1020 A, Venezuela
 tel: 2 504 1474, fax: 2 504 1148, e-mail:
 marcano@pion.ivic.ve

International Society Members

For the definition of the units and votes, refer to article 4 of the ICO Statutes in this document. The total International Society membership is 6. These 6 members together represent 15 units and 11 votes.

African Laser, Atomic and Molecular Physics Network

Units: 1, votes: 1, member since 2002

Prof A. Wagué
University Cheikh Anta Diop, Dakar,
Sénégal, tel: +221-8.25.69.80, fax: +221-
8.25.69.80, e-mail: wague@ucad.refer.sn

European Optical Society (EOS)

Units: 1, votes: 1, member since 1999

Prof. Theo Tschudi
President Elect, EOS, Vice-President, ICO
Darmstadt University of Technology
Inst. of Appl. Phys., Hochschulstrasse 6
D 64289 Darmstadt, Germany
tel: +49 6151 162022, fax: +49 6151
164123, e-mail: theo.tschudi@physik.tu-
darmstadt.de
Headquarters: LZH e.V. Laser Zentrum
Hanover, Hollerithallee 8, D30419
Hanover, Germany, phone +49 511 2788
115 fax +49 511 2788 100, Dr Klaus
Nowitzki (2001), Executive Director,
no@lzh.de, Andrea Erdman, Secretary,
er@lzh.de
Web: www.europeanopticalsociety.org

Engineers Lasers and Electro-Optics Society (IEEE/LEOS)

Units: 2, votes: 2, member since 2000

Prof. Andrew Wiener
IEEE LEOS appointed ICO Vice-President
Office: Purdue University, School of
Electrical & Computer Engineering, West
Lafayette, IN 47907-1285, USA, phone +1
765 494 5574, fax +1 765 494 6951, e-mail
amw@ecn.purdue.edu
Web: http://www.ieee.org/

International Society on Optics Within Life Sciences

Units: 1, votes: 1, member since 2002

Gert Von Bally
Laboratory of Biophysics
Medical Centre University of Münster
Robert-Koch-Str. 45, 48129 Münster
Germany. Tel. (+49)-251-8356888
Fax. (+49)-251-8358536
Email: LBiophys@uni-muenster.de

Optical Society of America

Units: 5, votes: 3, member since 1999

OSA, attn Kari Apter
(OSA as ICO Member)
2010 Massachusetts ave NW, Washington
DC 20036, United States of America
fax: +1 202 416 6134, e-mail:
kapter@osa.org
Headquarters: 2010 Massachusetts Avenue
NW, Washington DC 20036-0123, USA,
phone +1 202 416 1475, fax +1 202 223
1096, kamundsen@osa.org
Web: www.osa.org

SPIE - the International Society for Optical Engineering

Units: 5, votes: 3, member since 2000

SPIE attn Prof. H.H. Arsenault
SPIE appointed ICO Vice-President
Université Laval, COPL, Cité
Universitaire, Québec G1K 7P4, Canada
tel: +1 418 656 2650, fax: +1 418 656
2623, e-mail: arseno@phy.ulaval.ca
Headquarters: P.O. Box 10, Bellingham,
Washington 98227-0010, USA,
phone +360 676 3290, fax +360 647 1445,
attn Dr Eugene G. Arthurs (2000),
Executive Director, eugene@mom.spie.org
Web: www.spie.org

ICO Bureau, term Oct 1, 2002 – Sep 30, 2005

President:

Prof. René DÄNDLIKER

Office: Institute of Microtechnology,
University of Neuchâtel, rue A.L.
Bréguet 2, CH 2000 Neuchatel,
Switzerland, phone +41 32 718
3265, fax +41 32 718 3201, e-
mail: rene.dandliker@unine.ch

Home: Route des Pins 14, 2035
CORCELLES, Switzerland,
phone +41 32 731 4946, fax +41
32 724 4414

phone +34 91 357 1677, e-mail
calvomaria_luisa@hotmail.com
Cellular: 34 64 946 8006

Associate Secretary:

Prof. Ari T. FRIBERG

Office: Royal Institute of Technology,
Department of Microelectronics
and Information Technology,
Optics Section, Electrum 229
(Isafjordsgatan 22), SE-164 40
Kista, Sweden, phone +46 8 790
4191, fax +46 8 789 6672, e-mail
ari.friberg@imit.kth.se

Home: Luntmakargatan 71, SE-113 51
Stockholm, Sweden, +46 8 612
8675

Past President:

Prof. Arthur H. GUENTHER

Office: Center for High Technology
Mat., 1313 Goddard SE,
Albuquerque, New Mexico
87106, USA, phone +1
505.272.7003,
fax +1 505.272.7801, e-mail
agun@chtm.unm.edu

Home: 989 Lynx Loop NE
Albuquerque, New Mexico
87122-1313, USA, phone +1
505.856.1522,
fax +1 505 856 0938

Treasurer:

Prof. Glenn T. SINCERBOX

ICO Business: Intl Commission for Optics,
P.O. Box 32576, Tucson AZ
85751-2576, USA

Office: Optical Sciences Center,
University of Arizona, Tucson
AZ 85721, phone +1 520
621 4260, fax +1 520 621 4358,
e-mail: sinbox@cox.net

Home: 3104 N Madera Mesa Place,
Tucson AZ 85749-8181, USA,
phone +1 520 760 4113

Secretary:

Prof. Maria L. CALVO

Office: Universidad Complutense de
Madrid, Departamento de Optica,
Facultad de Ciencias Físicas,
Ciudad Universitaria, E 28040
Madrid, Spain, phone +34 91 394
4684, fax +34 91 394 4683,
e-mail mlcalvo@fis.ucm.es

Home: Calle Valdivieso, 13, 2I, E 28023
Madrid, Spain,

IUPAP Council Representative:

Prof. Y. PETROFF

Office: ESRF, European Synchrotron
Radiation Faculty, BP 220, F-

38043, Grenoble-Cedex, France,
phone +33 476 882503,
fax +33 476 882416, e-mail:
petroff@esrf.fr

Vice-Presidents, appointed:

Prof. Henri H. ARSENAULT

(appointed by SPIE)

Office: Université Laval, COPL, Dept.
de physique, Québec G1K 7P4,
Canada, phone +1 418 656 2650,
fax +1 418 656 2623, e-mail
arseno@phy.ulaval.ca

Home: 2625 de Port-Royal, Givias,
Quebec, Canada, phone +418
650-1231, fax +418 650-7667

Prof. Gert von BALLY

(appointed by OWLS)

Office: Laboratory of Biophysics,
Medical Centre University of
Münster, Robert-Koch-Strasse
45, D-48129 Münster, Germany,
phone +49 251 8356888,
fax +49 251 8358536, e-mail
lbiophys@uni-muenster.de or
bally@uni-muenster.de

Home: Potstiege 30, D-48161 Muenster,
Germany, phone +49 251 521343

Alexander A. SAWCHUCK

(appointed by OSA)

Office: Signal and Image Processing
Institute, University of Southern
California, EEB 404B MC 2564,
3740 McClintock Avenue, Los
Angeles, CA 90089-2564, USA,
phone +1 213 7404622,
fax: +1 213 740 4651, e-mail:
sawchuk@sipi.usc.edu

Prof. Theo TSCHUDI

(appointed by EOS)

Office: T.U. Darmstadt, Institut für
angewandte Physik, Hochschulstrasse
6, D 64289
Darmstadt, Germany,
phone +49 6151 162022,
fax +49 6151 164123,
e-mail: theo.tschudi@physik.tu-
darmstadt.de

Prof. Ahmadou WAGUÉ

(appointed by LAM Network)

Office: Department of Physics, Faculty
of Science and Techniques,
University Cheikh Anta Diop,
Dakar, Senegal, phone +221 825
6980, fax +221 824 6318, e-mail
wague@ucad.refer.sn
or wague@sentoosn

Home: Yoff Paleine 39, Dakar, Senegal,
phone +221 820 6660 Cellular
+221 634 1961

Prof. Andrew M. WEINER

(appointed by IEEE/LEOS)

Office: Purdue University, School of
Electrical & Computer
Engineering, West Lafayette, IN
47907-1285, USA, phone +1 765
494 5574, fax +1 765 494 6951,
e-mail amw@ecn.purdue.edu

Vice-Presidents, elected:

Prof. Asher A. FRIESEM

Office: Department of Physics of Com-
plex Systems, the Weizmann
Institute of Science, P.O. Box 26,
Rehovot 76100 Israel, phone
+972 8 934 3963,
fax +972 8 934 4109, e-mail
friesem@wicc.weizmann.ac.il

Home: 15, Neve Metz, Rehovot 76100,
Israel, phone +972 8 934 2288,
+972 8 946 4884 Cellular +972
54 666139

Dr Néstor G. GAGGIOLI

Office: Optics and Laser Laboratory,
Research NDT Group, Comisión
Nacional de Energía Atómica,
1429 Buenos Aires, Argentina,
phone 54 11 6772 7401,
fax 54 11 6772 7355, e-mail:
gaggioli@cnea.gov.ar

Home: Cafayate 4369, 1439 Buenos
Aires, Argentina, phone 54 11
4601 33 29

Prof. Guofan JIN

Office: Department of Precision
Instruments, Tsinghua
University, 100084, Beijing,
China, phone +86 10 627 823 34,
fax +86 10 627 845 03 or +86 10
627 846 91, e-mail:
jgf-dpi@mail.tsinghua.edu.cn

Home: 12-1-802 Langi Apartments,
Haidian District, 100084,
Beijing, China, phone and fax
+86 10 627 8566 Cellular +86
1370 1312 042

Dr Byoung Yoon KIM

Office: Dr. Byoung Yoon Kim
Novera Optics
KT Second Research Center
463-1, Jeonmi n-dong, Yuseong-
gu, Daejeon 305-811 Korea
Tel: 82-42-602-3777
Fax: 82-42-602-3799
yoon.kim@noveraoptics.co.kr

Prof. M. KUJAWINSKA

Office: Institute of Micromechanics and
Photonics, Mechatronics Depart-
ment, Warsaw University of
Technology, 8 A. Boboli St., 05-
525 Warsaw, Poland, phone:
+482206608489, fax: +48 220
6608601, e-mail:
m.kujawinska@mchtr.pw.edu.pl

Prof. Giancarlo RIGHINI

Office: IROE CNR, Nello Carrara
Institute of Applied Physics, Via
Panciatichi 64, I 50127 Firenze,
phone +39 055 4235239,
fax +39 055 4235 350, e-mail:
g.c.righini@ifac.cnr.it

Home: Via di Vigna Vecchia 64c, I
50036 Pratolino, phone +39 055
409730 Cellular:+39 333 799
2268

Dr Lingli WANG

Office: Philips Lighting, Central
Development Lamps, P.O. Box
80020, Building, EEC-210, NL-
5600 JM Eindhoven, The
Netherlands, phone: +31 40 27
55180, fax: +31 40 27 56564, e-
mail: Lingli.Wang@philips.com

Prof. Ichirou YAMAGUCHI

Office: Faculty of Engineering,
Gunma University
Tenjincho 1-5-1, Kiryu-City,
376-8515 Gunma
Japan, tel. +81-277-30-1747
fax. +81-277-30-1707
ichiyama@el.gunma-u.ac.jp

Home: Higashi-Hisakata 3-4-32, Kiryu,
Gunma 376-0053, Japan,
phone:+81-277-43-9281, e-mail:
tmbyama@ybb.ne.jp

Senior Adviser (ad personam):**Dr. Pierre CHAVEL**

Office: Laboratoire Charles Fabry de
l'Institut d'Optique, CNRS,
Université Paris-Sud, Bâtiment
503, Centre Scientifique d'Orsay,
F 91403, Orsay cedex, phone
+33 1 69 35 87 41, fax +33 1 69
35 87 00, Pierre.Chavel@iota.u-
psud.fr

ICO COMMITTEES, 2002 – 2005

ICO Nominating Committee:

Chair: A.H. Guenther
 Members: T. Asakura
 C. Velzel
 M.J. Yzuel

ICO Long Range Planning Committee:

Chair: R. Dändliker
 Members: H.H. Arsenault
 M.L. Calvo
 A.H. Guenther
 B.Y. Kim

ICO Committee for the Regional Development of Optics:

Chair: G. Righini
 Members: P. Chavel
 G. Denardo
 N.G. Gaggioli
 H.M. Ozaktas
 A. Wagué
 I. Yamaguchi
 M.L. Calvo

Committee for the ICO Galileo Galilei Award

Chair: G. von Bally
 Members: A. Consortini
 H. Kasprzak
 S. Odoulov
 M.J. Yzuel

Subcommittee for de ICO/ICTP Award:

ICO appointed members:
 A.A. Friesem, chair
 A. Consortini
 ICTP appointed members:
 G. Denardo
 M. Danailov

ICO Travelling Lecturer Committee:

Chair: G.T. Sincerbox
 Members: M.L. Calvo
 A.T. Friberg

ICO Prize Committee:

Chair: A.A. Friesem
 Members: H.H. Arsenault
 G. Jin
 G. Righini
 B.E.A. Saleh
 A.M. Weiner

ICO Education Committee:

Chair: A.A. Sawchuck
 Members: A.H. Guenther
 G. Jin
 M. Kujawinska
 A. Wagué
 A.T. Friberg

ICO Committee on Standards:

Chair: L. Wang
 Members: M.L. Calvo
 R. Dändliker
 B.Y. Kim
 I. Yamaguchi

Miscellaneous:

ICO Observer in coalition for Optics and Photonics: Prof. Arthur H. Guenther (term October 2002-September 2005)

ICO Associate Member in IUPAP Commissions (term 2003-2006):

C13, Physics on Development: Prof. Ahmadou Wagué

C15, Atomic and Molecular Physics and Optical Physics: Prof. Ari T. Friberg

C17, Quantum Electronics: Prof. Giancarlo Righini, Richard Slusher

ICO representative in the OC Steering Committee: Prof. María J. Yzuel

ICO representative in the ETOP Long Range Planning Committee: Prof. Ari T. Friberg

Special mission for ICSU membership: Dr. Pierre Chavel

Special mission for African Laser Centre (ALC): Prof. Arthur H. Guenther

Addresses of ICO Committees members who are not presently ICO Bureau members:

Prof. Toshimitsu Asakura, Ainosato 4-5-19-3, Kita-ku, Sapporo, Hokkaido 002-8074, Japan, phone/fax +81 11 778 9882, e-mail: tasakura@agate.plala.or.jp

Prof. Anna Consortini, Università degli Studi di Firenze, Department of Physics, Polo Scientifico, Via G. Sansone 1, 50019 Sesto Fiorentino, Firenze, Italy, phone +39 055 4572037 (office) + 39 055 4572004 (lab), fax: +39 055 4572356, e-mail: consortini@unifi.it

Prof. Milcho Danailov, The Abdus Salam International Centre for Theoretical Physics, ICTP, Strada Costiera 11, I 34014, Trieste, Italy, phone +39 040 22401, fax +39 040 2240443, e-mail: danailov@ictp.trieste.it

Prof. Galieno Denardo, Abdus Salam International Centre for Theoretical Physics, ICTP, Strada Costiera 11, I 34014 Trieste, Italy, phone +39 040 2240313, fax +39 040 2240443, e-mail: denardo@ictp.trieste.it

Dr. Henryk Kasprzak, Wrocław University of Technology, Institute of Physics, Physiological Optics Group, Wybrzeże Wyspiańskiego 27, PL 50-370 Wrocław, Poland, phone +48 71 3203395, fax +48 71 3283696, e-mail: henkas@rainbow.if.pwr.wroc.pl

Prof. Dr. Serguey Odoulov, National Academy of Sciences, 46 Science Av., 03650 Kiev, Ukraine, phone +380 44 265 2359, e-mail odoulov@iop.kiev.ua

Prof. Haldun M. Ozaktas, Bilkent University, Department of Electrical Engineering, TR-06800 Bilkent, Ankara, Turkey, phone +90 312 290 16 19, fax +90 312 266 41 92, e-mail: haldun@ee.bilkent.edu.tr

Prof. Christian Velzel, Philips Centre for Industrial Technology, P.O. Box 218/SAQ-p, 5600 MD Eindhoven, The Netherlands, e-mail: vecobv@iae.nl

Prof. María J. Yzuel, Universidad Autónoma de Barcelona, Departamento de Física, Edif. C, ES 08193 Bellaterra (Barcelona), Spain, phone: +34 93 581 19 33, fax: +34 93 581 21 55, e-mail: Maria.Yzuel@uab.es



FORMER MEMBERS OF THE ICO BUREAU

1947-1950

T. Smith	Great Britain	President
A. Arnulf	France	Treasurer
P. Fleury	France	Secretary
J. Hrdlicka	Czechoslovakia	Vice-President
S. S. Ballard	U.S.A.	Vice-President
A. C. S. van Heel	The Netherlands	Vice-President

1950-1953

A. C. S. van Heel	The Netherlands	President
A. Arnulf	France	Treasurer
P. Fleury	France	Secretary
S. S. Ballard	U.S.A.	Vice-President
L. C. Martin	Great Britain	Vice-President
J. M. Otero	Spain	Vice President

1953-1956

A. C. S. van Heel	The Netherlands	President
A. Arnulf	France	Treasurer
W. D. Wright	Great Britain	Secretary
S. S. Ballard	U.S.A.	Vice-President
E. Ingelstam	Sweden	Vice-President
J. M. Otero	Spain	Vice-President

1956-1959

S. S. Ballard	U.S.A.	President
W. D. Wright	Great Britain	Secretary-Treasurer
E. Ingelstam	Sweden	Vice-President
G. Hansen	Germany	Vice-President
A. Maréchal	France	Vice-President
G. Toraldo di Francia	Italy	Vice-President

1959-1962

E. Ingelstam	Sweden	President
W. D. Wright	Great Britain	Secretary-Treasurer
J. G. Baker	U.S.A.	Vice-President
A. Maréchal	France	Vice-President
P. Mollet	Belgium	Vice-President
G. Toraldo di Francia	Italy	Vice-President

1962-1965 (Postponed to 1966)

A. Maréchal	France	President
W. D. Wright	Great Britain	Secretary-Treasurer
G. Cario	Germany	Vice-President
W. L. Hyde	U.S.A.	Vice-President
H. Kubota	Japan	Vice-President
P. Mollet	Belgium	Vice-President

1966-1969

G. Toraldo di Francia	Italy	President
W. L. Hyde	USA	Secretary-Treasurer
L. E. Howlett	Canada	Vice-President
H. H. Hopkins	Great Britain	Vice-President
H. Kubota	Japan	Vice-President
T. Skalinski	Poland	Vice President

1969-1972

H. H. Hopkins	Great Britain	President
J.-Ch. Viénot	France	Secretary Gen & Treasurer
B. Havelka	Czechoslovakia	Vice-President
R. M. Scott	U.S.A.	Vice-President
K. Kinoshita	Japan	Vice-President
W. H. Steel	Australia	Vice-President

1972-1975

W. H. Steel	Australia	President
J.-Ch. Viénot	France	Secretary Gen. & Treasurer
K. M. Baird	Canada	Vice President
B. Billings	U.S.A.	Vice President
A. Fiorentini	Italy	Vice President
B. Havelka	Czechoslovakia	Vice-President
K. Kinoshita	Japan	Vice-President
H. Koehler	Germany	Vice-President

1975-1978

K. M. Baird	Canada	President
W. H. Steel	Australia	Past President
J.-Ch. Viénot	France	Secretary General
F. D. Smith	U.S.A.	Vice President & Treasurer
B. Karczewski	Poland	Vice President
A. W. Lohmann	Germany	Vice President
L. Plaza	Spain	Vice President
J. Tsujiuchi	Japan	Vice President
W. T. Welford	Great Britain	Vice President

1978-1981

A. W. Lohmann	FRG	President
K. M. Baird	Canada	Past-President
H. J. Frankena	The Netherlands	Secretary-General
F. D. Smith	USA	Treasurer & Vice-President
E. Marom	Israel	Vice-President
K. Schindl	Austria	Vice-President
T. Skalinski	Poland	Vice-President
J. Tsujiuchi	Japan	Vice-President
W. T. Welford	Great Britain	Vice-President

1981-1984

J. Tsujiuchi	Japan	President
A. W. Lohmann	FRG	Past-President
H. J. Frankena	The Netherlands	Secretary-General
J. N. Howard	USA	Vice President & Treasurer
F. T. Arecchi	Italy	Vice President
K. Biedermann	Sweden	Vice President
S. Lowenthal	France	Vice President
T. Skalinski	Poland	Vice President
P. Varga	Hungary	Vice President

1984-1987

S. Lowenthal	France	President
J. Tsujiuchi	Japan	Past-President
H. J. Frankena	The Netherlands	Secretary-General
J. N. Howard	USA	Treasurer
H. H. Arsenault	Canada	Vice-President
K. Biedermann	Sweden	Vice-President
E. Byckling	Finland	Vice-President
J. W. Goodman	USA	Vice-President

P. Hariharan	Australia	Vice-President
M. P. Petrov	USSR	Vice-President

1987-1990

J. W. Goodman	USA	President
S. Lowenthal	France	Past-President
J. C. Dainty	Great Britain	Secretary-General
P. Hariharan	Australia	Treasurer
H. H. Arsenault	Canada	Vice-President
M-W Chang	O.E. Soc. Taipei	Vice President
A. Consortini	Italy	Vice-President
F. Lanzl	FRG	Vice-President
D. Malacara	Mexico	Vice-President
J. Perina	Czechoslovakia	Vice-President

1990-1993

J. C. Dainty	Great Britain	President
J. W. Goodman	USA	Past-President
P. Chavel	France	Secretary-General
P. Hariharan	Australia	Treasurer
T. Asakura	Japan	Vice-President
A. Consortini	Italy	Vice-President
F. Lanzl	FRG	Vice-President
G. Lupkovics	Hungary	Vice-President
K. Rebane	former USSR	Vice-President
G. Sincerbox	USA	Vice-President
C.H.F. Velzel	The Netherlands	Vice-President
M.J. Yzuel	Spain	Vice-President

1993-1996

A. Consortini	Italy	President
J.C. Dainty	Great Britain	Past-President
P. Chavel	France	Secretary-General
R.R. Shannon	USA	Treasurer
T. Asakura	Japan	Vice-President
K. Chalasinska-Macukov	Poland	Vice-President
S.S. Lee	Korea (Republic of)	Vice-President
F. Merkle	FRG	Vice-President
G.G. Mu	Chinese Opt. Soc.	Vice-President
G. Sincerbox	USA	Vice-President
C.H.F. Velzel	The Netherlands	Vice-President
M.J. Yzuel	Spain	Vice-President

1996-1999

T. Asakura	Japan	President
A. Consortini	Italy	Past-President
P. Chavel	France	Secretary-General
A.T. Friberg	Finland	Associate Secretary
R.R. Shannon	U.S.A	Treasurer
K. Chalasinska-Macukov	Poland	Vice-President
R. Dândikler	Switzerland	Vice-President
A.H. Guenther	U.S.A	Vice-President
M.C. Hutley	U.K.	Vice-President
S.S. Lee	Korea (Republic of)	Vice-President
F. Merkle	Germany	Vice-President
G.G. Mu	Chinese Opt. Soc.	Vice-President
J. Ojeda-Castañeda	Mexico	Vice-President

1999-2002

A.H. Guenther	USA	President
T. Asakura	Japan	Past-President
P. Chavel	France	Secretary-General
A.T. Friberg	Sweden	Associate Secretary
G.T. Sincerbox	USA	Treasurer
H.H. Arsenault	Canada	Vice-President
R. Dändliker	Switzerland	Vice-President
U. Kim	Korea (Republic of)	Vice-President
J. Ojeda-Castañeda	México	Vice-President
G. Righini	Italy	Vice-President
C- Sheppard	Australia	Vice-President
L.L. Wang	Netherlands	Vice-President
M.L. Calvo	Spain	Vice-President
A.A. Friesem	Israel	Vice-President
D.A.B. Miller	USA	Vice-President
Y. Petroff	France	Vice-President
B.E.A. Saleh	USA	Vice-President
T. Tschudi	Germany	Vice-President

This list was compiled from ICO records but may contain inaccuracies and omissions: please send any corrections to the Secretary-General.

PART IV: THE 2005 GENERAL MEETING

MINUTES OF THE 19TH GENERAL MEETING OF THE INTERNATIONAL COMMISSION FOR OPTICS

held on August 26th and 29th, 2002 in Florence, Italy



The President of the Commission, Prof. A.H. Guenther, was in the chair and the following were present:

ICO Bureau:

Past President	T. Asakura
Secretary	P. Chavel
Associate Secretary	A.T. Friberg
Treasurer	G.T. Sincerbox
Vice-Presidents	H.H. Arsenault, M.L. Calvo, R. Dändliker, A.A. Friesem, G. Righini, B.E.A. Saleh, C. Sheppard, T. Tschudi, L.L. Wang

Delegates and Observers

Argentina	H.F. Ranea Sandoval, N. Gaggioli
Australia	M. Sharma, C.J. Sheppard
Belgium	H. Thienpont, I. Veretennicoff, A. Fotiadi (2)
Belorussia	<i>No delegate attended</i>
Brazil	M. Muramatsu (2)
Canada	R.A. Lessard, D.J. Gingras
Chinese Optical Society	Mu Guoguang, Cao Jianlin, Jin Guofan, Weng Zhi Cheng
Optical Engineering Society in Taipei, China	Yih-Shyang Cheng (2), Der-Chin Su (2)
Columbia	A. Guzman, E. Solarte (o-1)
Cuba	<i>No delegate attended</i>
Czech Republic	M. Miler, M. Hrabovsky

Denmark	<i>No delegate attended</i>
Estonia*	<i>No delegate attended</i>
Finland	A.T. Friberg, K.E. Peiponen
France	P. Chavel, G. Le Saux, Ph. Réfrégier
Germany	H. Tiziani, Kowarschik, L.L. Wang, K. Hinsch (1)
Ghana / West Africa	P.K. Buah-Bassuah, A. Wagué (o)
Greece* (a)	<i>No delegate attended</i>
Hungary	<i>No delegate attended</i>
India	K. Singh, C.S. Narayanamurthy (1), C.J. Panchal (1), D. Gianotra (o-1)
Indonesia	<i>No delegate attended</i>
Ireland	R.M. Redfern
Islamic Republic of Iran	S. Saghiafi
Israel	A.A. Friesem, E. Marom
Italy	G. Righini, P.A. Benedetti, A. Consortini, G. Sartori (o-1)
Japan	I. Yamaguchi, Y. Ishii, J. Ohitsubo, T. Asakura, K. Iwata (2)
Korea	B. Rhee (1), B.Y. Kim
Latvia*	M. Ozolinsh
Lithuania*	<i>No delegate attended</i>
Mexico	A. Lastras Martinez
Morocco*(a)	<i>No delegate attended</i>
Netherlands	B.J. Hoenders, C.H.F. Velzel, L.L. Wang, J. Braat (o), M.J. Bastiaans (o-2)
New Zealand	<i>No delegate attended</i>
Norway	<i>No delegate attended</i>
Poland	K. Macukow, P. Szczepanski, M. Suchanska
Romania	V.I. Vlad, D. Cristea (o-1)
Russia	E.M. Zolotov, N. Kundikova, S.P. Kotova (1), N.S. Makarov, V. Lukin (1), V. Shandarov
Singapore	<i>No delegate attended</i>
Slovak Republic	Represented by Czech Committee
Spain	C. Ferreira (1), M.J. Yzuel, M.L. Calvo, C. Gomez-Reino (o)
Sweden	S. Walles, K. Bidermann
Switzerland	L. Vaccaro, J. Jütz, R. Dändliker
Tunisia*(a)	<i>No delegate attended</i>
Turkey	M. Özcan(o-1), I. Ozen, T. Tekin (o-1)
Ukraine	O.V. Angelsky (o-1), S. Oudolov, I.I. Mokhun (o), M.V. Shovgenyuk (o)
United Kingdom	I. Mc Pherson

United States of America	B.E.A. Saleh, G.T. Sincerbox, A.H. Guenther, P. Shumate
Venezuela	A. Marcano, T. Cusati (o-1)
EOS	T. Tschudi
IEEE LEOS	P. Shumate
LAM Network*	A. Wagué
OSA	B.E.A. Saleh, D.T. Moore (o-1)
OWLS*	G. Von Bally
SPIE	J.A. Harrington (1), E.G. Arthurs, H.H. Arsenault

(1) First session only

(2) Second session only

(o) Observer

* observer until election of new members

(a) Associate Member

The items were distributed between the first and second sessions as follows:

First Session, Monday, August 26th, 17:00 - 18:30.

- 1 Minutes of the 18th General Meeting
- 2 Matters arising from the 18th General Meeting
- 3 Report of the President for 1999-2002 and report of the Long Range Planning Committee
- 4 Report of the Secretary-General for 1999-2002
- 5 Finance
 - (a) Treasurer's Report
 - (b) Proposed budget 2002-2005
 - (c) Unit subscription in 2002-2005
- 6 Changes in the ICO Rules and Code of Practice
- 7 Admittance of new members
- 8 Reports of ICO Committees
 - (a) Nominating Committee

Second Session, Thursday, August 29th, 16:30 - 18:30

- 11 Date and venue of the General Meeting ICO XX
- 8 Reports of ICO Committees, continued
 - (b) Committee for the Regional Development of Optics and Subcommittees
 - (c) Travelling Lecturers Committee
 - (d) ICO Prize Committee
 - (e) ICO Education Committee
 - (f) ICO Standards Committee
- 10 Conferences with ICO participation
- 12 Late nominations for the ICO Bureau Elections
- 13 ICO Bureau Elections for the term 2002-2005
- 14 Other business

Opening Session

A.H. Guenther, President, welcomes the participants and expresses thanks to the organisers of the ICO XIX Congress. Speaking on behalf on the entire ICO Bureau, Prof. Guenther thanks to Dr P. Chavel for his participation as the ICO Secretary during the last 12 years. Moreover, as he will leave the Bureau, P. Chavel has accepted a new created position as senior advisor of the Bureau. To recognize this occasion, he is presented an object of Optics Arts.

First Session

1 Minutes of the ICO-18 General Assembly

The minutes were approved unanimously.

2 Matters arising from the ICO-18 General Assembly

None

3 Report of the President for 1999-2002 and report of the Long Range Planning Committee

A.H. Guenther, President, reviews the main ICO activities during the triennium:

- ICO has set a firm basis for its role in impacting the explosive growth of optics and photonics as a major technical field positively influencing both our quality of life as well as being an economic stimulus for the 21st Century.
- The ICO obtained and supplied copies of the US “Harnessing Light” report to each of its member countries, territories and member societies.
- ICO continues to focus many of its activities on developing nations. It has participated in initiatives in Africa, having a Bureau meeting in Senegal and being involved in the establishment of a Laser Center in Africa.
- ICO is looking towards Latin America to participate in future actions for the promotion of Optics in addition to the existing series of ICO cosponsored conferences.
- ICO has continued its close cooperation with the ICTP (The International Center for Theoretical Physics) optics programs in Trieste.
- ICO has established a new membership category, that of International Society Member, and this has proved a fruitful initiative.
- The ICO has also continued its policy of recognizing optics related achievements on an international basis through several awards including the ICO Prize, the Galileo Galilei Award and the ICO/ICTP Award.
- ICO has launched a series of books entitled "Trends in Optics". The title of this year's book is International Trends in Applied Optics.
- ICO supports, in collaboration with the SPIE and OSA, the Conference on Education and Training in Optics and Photonics, most recently convened during 2001 in Singapore.

4 Report of the Secretary-General for 1999-2002

The secretariat is the home for ICO information and procedures. It should communicate about ICO and maintain contacts with its members.

Concerning information, the secretary's office acts as the editor of the ICO quarterly newsletter, that could certainly be handled in a more professional way but conveys information about ICO and its activity to its member, to the mailing lists of the ICO Territorial Committee Members, and to the readers of the ICO International Organization Members magazine that include part or all of it. Special thanks are due to OSA for continuing to publish the full paper version of the Newsletter as a quarterly addendum of Optics and Photonics News, to SPIE for publishing the web version and including an announcement of every new issue in OE Magazine, and to IEEE/LEOS for abstracting from the Newsletter in its own magazine. The secretary also maintains the ICO web, most generously hosted by SPIE. The ICO web content has been updated very recently. Also, the secretary acts as the editor of the ICO Triennial report, known as the "Green Book", containing information for the ICO members in their relation to ICO, in particular in preparation of the General Meeting and as a reference about the ICO procedures. The secretary at all times welcomes comments and suggestions about the Newsletter, the web site and the Green Book. Contributions from Territorial Committees about their organization, activities, history, and about optics in their territory are always welcome for publication in the Newsletter.

The secretary maintains the information database on members. The initiative of creating the new membership category "International Organization Member" in 1999 has proved quite useful and good and close contacts exist with the four first members in that category, while two new applications have been received and approved by the Bureau (see section 6.7 below). There are currently 43 Member Territories and five more applications have been received and approved by the Bureau (see section 6).⁷ It is mentioned that some of the Territorial Committee members sometimes overlook to update the composition of their Committee or board when elections for a new term are held. Also, the ICO would like to have a copy of the operating rules (statutes, bylaws, etc.) used by its members. This is now a requirement for all new membership applications, but some of the more faithful members of ICO apparently never provided the information. The basic rules of Territorial Committees are that they must be representative of and maintain contacts with the Optics and Photonics community in their geographical Territory, they must be acknowledged by science authorities in their country. Because of the close contacts between ICO and IUPAP (the International Union of Pure and Applied Physics), they should also have well defined working relations with the Physics community in their territory. The duties of Territorial Committees include the distribution of the Newsletter to their mailing list inside their territory, the distribution of ICO meeting announcements, and the communication about Optics, its growth, its importance.

During this term, a special mission was given to the Secretary, namely to prepare the membership application of ICO in ICSU, the International Council of Science (International Council of Scientific Unions). ICO was established in 1947 as a "affiliated commission" of IUPAP. This fact evidences the strong and stable roots of Optics in Physics, of which it is a branch. Already in 1947, the fact that ICO was made an "affiliated commission" rather than a "commission" was indicative of the additional dimension of optics as a professional activity with significant economic impact. Since then, with the advent of the laser, optical telecommunications, and much more, Optics has become a discipline whose activity

significantly extends beyond physics. This is shown by the fact that very few optical engineers, very few optical telecommunication specialists identify themselves as Physicists. This is why ICO has decided, at its General Meeting in 1999, to apply for the status of an ICSU International Scientific Associate while still remaining an IUPAP Affiliated Commission. The 1999-2002 ICO Secretary, P. Chavel, was asked to act on this issue but his agenda did not allow him to proceed. A new Secretary will be elected during this General Meeting and P. Chavel will remain in charge of pursuing contacts towards ICSU membership.

The Secretary concludes his report by reminding attendees, and in particular candidates for the election of the future ICO Bureau, that ICO does not operate like its larger International Organization Members: clerical help to the secretary, while appreciated, is very small, and all Bureau members are not only expected to provide guidance and advice, but also to act themselves on specific issues assigned to them.

5 Finance

(a) Treasurer's Report

G.T. Sincerbox, Treasurer, reports on the financial situation with a balance sheet as of August 14, 2002 and an income and expenditure report for the period August 15, 1999 through August 14, 2002. He also gives the status of cumulative dues arrears as August 14, 2002. The total arrears amount to some US\$7.000, just one half of the amount at the end of the previous triennium. The President calls for a vote on the approbation of the income, expenditure and balance. Motion Veretennicoff, Marom. The General Meeting approves unanimously.

(b) Proposed budget 2002-2005

The Treasurer proposes a budget for the triennium 2002-2005 (see appendix 1).

(c) Unit subscription in 2002-2005

The Treasurer proposes to leave the unit subscription at the present level of US\$150 per unit during the coming triennium. The President calls for a vote on the approbation of the proposed budget in this realistic form and on the unit subscription in 2003, 2004 and 2005. Motion: Arthurs, Lessard. The General Meeting approves unanimously.

6 Changes in the ICO Rules and Code of Practice

Amendments to the new Rules and Codes of Practice are presented to reflect recent changes in the operation of ICO, such as the discontinuation of the Fellowship program and the introduction of a standing Committee on Education and a new award, the ICO-ICTP award. The voting procedures are amended for improved clarity. Motion to approve changes as recommended by the Bureau: Veretennicoff, Lessard. Approved unanimously.

7 Admittance of new members

For the last three years, three Territorial Committees, Estonia, Lithuania and Latvia, have applied as ICO Members and the Bureau has examined their applications and recommends the General Meeting to accept them. The membership of Lithuania will be effective upon reception of the Territorial Committee board members names. The new members are proposed to the General Assembly for election. Motion Righini, Sincerbox. This is approved unanimously.

Moreover, applications were received from Greece, Tunisia and Morocco, the latter under "Associate Member" category. While the application from Greece has been found particularly well prepared, unfortunately no national authority representing science in Greece has been identified yet. In the application from Tunisia, the Bureau has approved Associate Membership already in 2001 (article 3c of the ICO Statutes) but it is recommended that explicit links with the Physical Society of Tunisia, currently under reorganization, be established, and that the procedures to be implemented a good representation of the Optics and Photonics community in Tunisia be explicated. In these three cases, the Bureau recommends the General Assembly to approve or continue associate membership, the Bureau being authorise to transform associate membership into full membership during the triennium if conditions are fulfilled. The three associate memberships are proposed to the General Assembly for election.

In the "International Organisation Member" category, the LAM Network (African Laser, Atomic, Molecular and Optical Physics Network, supported by the Abdus Salam International Centre for Theoretical Physics) and the OWLS (International Society on Optics Within Life Sciences) have applied. The Bureau has discussed these applications and recommends the General Meeting to approve them. Motion (Arsenault, Veretennicoff) to approve associate and International Organization Members as recommended by the Bureau. The Assembly approves unanimously.

8 Reports of ICO Committees

(a) Nominating Committee

T. Asakura, Chair of the Committee, presents the current list of candidates received by the Nominating Committee. Nominations and endorsements will be closed at 4:30 pm on Wednesday, August 28th. H.H. Arsenault announces his decision not to run for President. The first session of the General Meeting closed at 18:30.

Second Session

11 Date and venue of the General Meeting ICO XX

A bid for ICO-XX has been received from China. The application is presented to the General Meeting by Jianlin Cao on behalf of the Chinese Optical Society. The Congress, entitled "Challenging Optics in Sciences & Technology", would be held in Changchun, August 21-26, 2005. The Bureau has recommended to approve the application. The president proposes to vote on the decision. Motion Righini, Arsenault. Vote: accepted unanimously.

8 Reports of ICO Committees, continued

(b) Committee for the Regional Development of Optics Subcommittees

Prof. M.L. Calvo reports. In addition to the previous report of the Committee, appearing in page 50 of the "ICO Green Book", she mentions the following progress.

- In 2000, the ICO Topical Meeting "Optical Sciences and Applications for sustainable development" was held at the University Cheik Anta Diop in Dakar, Senegal.
- In 2001, IV RIAO/VII Optilas was held in Tandil, Argentina.
- ICO is involved in the ICO/ICTP Winter Colleges which are held in Trieste, Italy every year. The topics of the last years were "Optics and Photonics" (2000), "Ultrafast non linear Optics" (2002) and the next Winter College, to be held in February 2203, will deal with Biophotonics.
- The committee has made new contacts in Central America.
- In response to a suggestion of the Turkish Territorial Committee, the Bureau is initiating a procedure to compile a catalogue of Optics educational material available electronically free of charge.

M.L. Calvo, Chair of the Galileo Galilei award Subcommittee, reports on this programme (see pp 65-72 of the Green Book "Towards ICO-19"). She mentions the Galileo Galilei Medal winners for 2000, 2001 and 2002: V. Lukin (Russia), K. Singh (India) and R. Ganeev respectively.

She also mentions the ICO/ICTP Award Winners (see pp 73-78 of the Greenbook "Towards ICO-19") A.A. Khan for 2000, A. Nahal and F. Perez Quintian (give national affiliation) for 2001 and A. Sennaroglu for 2002.

G.T. Sincerbox, chair of the Fellowship Subcommittee, reports. The program is discontinued by lack of interest.

P. Chavel reports on the ALC (African Laser Centre) initiative: as South Africa is implementing its new general policy of interaction with all African countries and Laser activity in South Africa was recently changed from an isotope separation programme to a much more general scientific and industrial programme, the ambition of the ALC is to develop Laser activity on the whole continent. Political opportunities appear to exist to fund a well defined initiative, and the current status of the project is to build a "business plan" to describe it to potential funding agencies. ALC envisions two principal objectives:

(1) To promote research and training programs at selected African Multinational Laser Research Centres in South Africa, Senegal, Ghana, and Egypt. Outstanding laser research centres already exist in those locations, and it is the aim of the ALC to promote a more continental dimension to those centres' activities.

(2) To provide resources and promote collaborations among, laser researchers throughout Africa. The ALC will use its resources to enhance the efforts of LAM and any other laser-driven initiatives in Africa.

A set of concrete goals have been proposed and are being discussed in more detail, including setting up femtosecond laser facilities at each of the aforementioned African Multinational Laser Research Centers.

ICO might help in the following ways: Provide expertise and advice, participate in meetings, reviews, defining programs, help improve links with « membership societies »: fellowships, local « chapters », easier access to up to date information, meeting organization, use of the ICO existing programmes for (modest) support (travelling lecturers).

(c) Travelling Lecturers Committee

See report in ICO Green Book "Towards ICO 19", page 55.

(d) ICO Prize Committee

R. Dändliker, Chair of the Committee, reports (see report in ICO Green Book "Towards ICO 19", pages 56-64). He mentions the ICO Prize winners for 2000 and 2001, N.W. Hell and N.A. Riza respectively. For 2002, due to insufficient number of applications, the Committee has decided not to give the Prize.

Affiliation

(e) ICO Education Committee

C.J. Sheppard, Chair of the Committee, reports. The main ICO activity related to education has been its participation in the ETOP (Education and Training in Optics and Photonics) meetings series. Territorial Committees are encouraged to make sure that existing programs in their territories are well covered in the SPIE optics degrees directory.

(f) Standards Committee

L.L. Wang, chair of the Committee, reports. The web links about standards in Optics have been published in the July 2002 issue of the ICO newsletter and will be updated. The newsletter can be found on the ICO website.

10 Conferences with ICO participation

As can be seen on pp 85-86 of the ICO Green Book "Towards ICO-19", between the end of ICO-18 and ICO-19, ICO participated in 23 meetings and schools in addition to ICO-19 itself: 1 Topical Meeting, 6 Cosponsored Meetings, 14 Endorsed Meetings and 2 ICO Schools. For this triennium, there were US\$ 27.000 in grant, US\$ 10.000 in risk and US\$ 7.000 in loan.

Forms of applications can be found on the ICO website: www.ico-optics.org. Existing difficulties with downloading of the forms or electronic submissions will be taken care of.

11 Late nominations for the ICO Bureau Elections

No late nomination was received. Prof. Asakura reviews late endorsements that have been received.

12 **ICO Bureau Elections for the term 2002-2005:**

The elections were held following the Rules and Codes of Practice. For all positions in the Executive Committee, no vote was necessary as there was only one candidate for each position. Three votes were necessary for the Vice-Presidents. In the first vote, four Vice-Presidents, including one from industry, were elected. In the second vote, the second Vice-President from industry was elected. In the third vote, the other three Territorial Committee elected Vice Presidents were elected. In addition, appointment of the International Organisation Members Vice-Presidents were announced. The results were:

President: R. Dändliker (Switzerland)

Past President: A.H. Guenther (USA)

Secretary: M.L. Calvo (Spain)

Associate Secretary: A. Friberg (Finland)

Treasurer: G.T. Sincerbox (USA)

Vice Presidents:

- H.H. Arsenault (Canada, appointed by SPIE)
- A.A. Friesem (Israel)
- N.G. Gaggioli (Argentina)
- G. Jin (China)
- M. Kujawinska (Poland)
- B.Y. Kim (Korea, from industry)
- G.C. Righini (Italy)
- A.A. Sawchuck (appointed by OSA)
- T. Tschudi (appointed by EOS)
- G. Von Bally (appointed by OWLS)
- A. Wagué (Sénégal, appointed by the LAM Network)
- L.L. Wang (Netherlands, from industry)
- A.M. Weiner (appointed by IEEE/LEOS)
- I. Yamaguchi (Japan)

IUPAP will be asked to appoint, as usual, a delegate to ICO from its Executive Committee. The new Bureau formally assumes responsibility on October 1st, 2002.

13 **Other business**

None

APPENDIX 1: PROPOSED BUDGET FOR THE 2003-2005 TRIENNium

Income		notes
Dues	\$98.550	1
Less not collectable	\$4.000	2
Net Dues	\$94.550	
Royalties	\$2.000	3
Interest	\$4.800	4
Total Income	\$101.350	
Expenses		
Secretariat Expenses	\$10.000	5
Secretarial Support	\$15.000	5
Treasurer Expense	\$1.000	6
Newsletter Distribution	\$17.400	7
Bureau Expenses	\$8.000	8
Meeting Support	\$31.000	9
Payment to SPIE for ETOP'99	\$0	
School Support	\$4.500	
Prizes	\$12.000	10
Prize recipient travel	\$6.000	10
Traveling Lecturer Support	\$5.000	3
Reserves or New Projects	\$10.000	11
Total Expense	\$119.900	

NOTES:

1. 5 new territories + Romania, includes some arrears
2. Estimated that we will not collect from 5 territories for the 3-year period
3. royalties are applied to traveling lecturer fund
4. Interest rates are down
5. Euros converted as 1.306\$
6. includes bank service charges to send and receive money
7. we are switching to IoP to print newsletter with mailing by ICO Secretariat
8. includes Art Guenther, African Initiative \$1.245
9. Exposure: \$12,000 risk, \$5,000 loans
10. Prizes increased at ICO-19 General Assembly
11. Web site support of \$5000, approved but not spent

2005 ICO GENERAL ASSEMBLY



Provisional agenda of the XX General Assembly

Two sessions are planned for the 20th General Assembly of ICO in conjunction with the ICO General Scientific Conference, "Challenging Optics in Science and Technology":

session 1: Monday, August 22, 4:00 PM – 6:00 PM

session 2: Thursday, August 25, 4:30 PM – 6:30 PM

The exact rooms will be posted in the ICO 20 registration area.

The provisional agenda is as follows. Proposed changes should be preferable by requested in writing to the Secretary (mlcalvo@fis.ucm.es, fax +34 91 3944683) by August 15, 2005. Proposed changes should preferably be requested by writing to the President before the first session begins.

- 1) Minutes of the ICO XIX General Assembly.
- 2) Matters arising.
- 3) Report of the President for 2002-2005 and report of the Long Range Planning Committee.
- 4) Report of the Secretary for 2002-2005
- 5) Finance:
 - a) Treasurer's report
 - b) Proposed budget for 2005-2008
 - c) Unit subscription in 2005-2008
- 6) Changes are indicated in the ICO Rules and Codes of Practice (in this booklet)
- 7) Admittance of new members.
- 8) Reports of the ICO Committees:
 - a) Nominating Committee
 - b) Committee for Regional Development of Optics
 - c) ICO Prize Committee
 - d) ICO Galileo Galilei Award Committee
 - e) ICO/ICTP Award Committee
 - f) ICO Traveling Lecturer Committee
 - g) ICO Education Committee
 - h) ICO Standards Committee
- 9) Conferences with ICO participation
- 10) Date and venue of the General Meeting ICO-XXI
- 11) Late nominations for the ICO Bureau Elections.
- 12) ICO Bureau Elections for the term 2005-2008
- 13) Other business.

PROPOSED BUDGET 2005-2008 FOR THE 2005-2008 TRIENNIUM

ITEM	PROPOSED BUDGET FOR Period 10/1/2005 - 9/30/2008	notes
Income		
Dues	\$104.700	1
Less not collectable	\$6.300	2
Net Dues	\$98.400	
Royalties	\$600	3
Interest	\$3.400	4
Total Income	\$102.400	
Expenses		
Secretariat Expenses	\$10.000	5
Secretarial Support	\$15.000	6
Treasurer Expense	\$3.000	7
Newsletter Distribution	\$22.215	8
Bureau Expenses	\$6.000	9
Meeting Support	\$35.000	10
School Support	\$6.000	11
Prizes	\$12.000	12
Prize recipient travel	\$6.000	13
Traveling Lecturer Support	\$5.000	14
Reserves or New Projects	\$2.000	15
Total Expense	\$122.215	

NOTES

1. 228 units at \$150/unit + some arrears
2. There are 5 territories 3-4 years in arrears that I do not expect to pay their dues
3. ICO Books: the ICO-VI Book (2005) will not be published
4. Based on current interest rates
5. Same as current budget
6. Same as current budget
7. Increase due to cost of sending and receiving wires.
8. Contract with IoP for printing, mailing from secretariat
9. Expected to be somewhat less
10. We will support more meetings
11. Increase of US\$ 1,500 over current
12. Increased by General Assembly at ICO-19
13. Increased by General Assembly at ICO-19
14. Same as current budget
15. Reserves only