

# NEWSLETTER

COMMISSION INTERNATIONALE D'OPTIQUE · INTERNATIONAL COMMISSION FOR OPTICS

## SPECIAL ISSUE: ICO 75<sup>th</sup> ANNIVERSARY

**Important personalities from ICO's recent history tell us some of their memories in this special issue.**



Some participants in the ICO-23 meeting celebrated in Santiago de Compostela (Spain) in August 2014.

**Anniversaries** are a time for introspection. As we celebrate 75 years as an organization, we can look back on the profound impact that optics and photonics has had on the world. We see their use in medicine, communication, agriculture, fabrication, design, quality control, engineering, and many branches of science and technology. As we look forward, we at ICO, see many significant challenges on the horizon. We believe optics and photonics can play crucial roles in solving some of these challenges. With an internal community of seven major optical societies and 54 member territories, ICO contains the talent and capability to make important impacts on the world. Our efforts can be amplified by partnering with other like-minded organizations. In this vein, the ICO was just accepted as a Category 1 member of the Interna-

tional Science Council. We believe this newly established connection will aid in our efforts to work collaboratively on challenging topics, benefit science programs of developing countries and establish potent connections.

We are partnering with researchers in Africa to develop active learning programs for high school and undergraduate institutions. We recently partnered with Thorlabs to help in providing experimental demonstration kits for a dedicated teacher of many aspiring young people within her country.

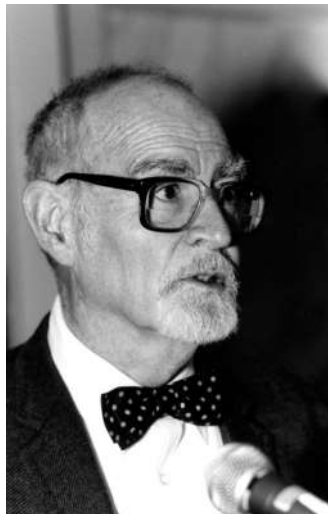
We look forward to many exciting breakthroughs, opportunities and partnerships in the future and hope you will join with us in helping make the world a better place.

**John Howell**  
ICO President



# The birth of the ICO

This text is part of an article by Prof. John N. Howard, originally prepared for the 50<sup>th</sup> anniversary of the ICO.



Prof. John N Howard served from 1981 to 1987 as vice president and treasurer of the ICO. He passed away in 2015 at the age of 94.

in 1946 Europe was at last beginning to recover from the ordeal of World War II. The oldest and largest optics group in Europe was the Institut d'Optique in Paris, which had been founded in 1921 by the distinguished optical physicist Charles Fabry (1867-1945), and the director of the Institut d'Optique, Prof. Pierre Fleury, who had succeeded Fabry in 1945, was eager to resume an active role in European optics. He wrote to his optics colleagues and former students throughout Europe and invited them to participate in a "Reunions d'Opticiens" in Paris 14-19 October 1946. Scientists from 16 different countries participated in this first post-war European optics conference. The invited papers were by Frank Twyman (of Hilger and Watts) on the production of aspherical surfaces; Louis de Broglie on image formation, Jean Cabannes on the development of optics in France, and Pierre Fleury reviewed the history of the Institut d'Optique and research pursued since 1940. Then followed several days of contributed papers from most of the European optics groups. Many of the participants urged Fleury to seek some mechanism for continued cooperation in the optics community.

Prof. Fleury was already a French representative to IUPAP (the International Union of Pure and Applied Physics), with headquarters in Paris, and he was aware that the statutes of IUPAP provided for the creation of commissions in

specific areas of physics; why not a commission for optics? He also determined that UNESCO (the United Nations Educational, Scientific, and Cultural Organization, with headquarters in Paris) would also be able to provide - through IUPAP - some funds for travel to a Preparatory Meeting in Prague to discuss the formation of an International Commission for Optics.

In January 1947 the General Assembly of IUPAP approved the appointment of a Preparatory Committee, with Prof P. Fleury as Secretary, to consider forming an International Commission for Optics. The preparatory committee met in Prague, Czechoslovakia, 2-7 June 1947, with Prof Josef Hrdlicka as host. Fifteen delegates attended, representing eight countries, (Belgium, Czechoslovakia, France, Great Britain, Italy, the Netherlands, Poland, and Sweden). Replies were received from five other countries (Denmark, Finland, Norway, Switzerland, and the USA) that their representatives would be unable to attend, and Argentina and the USSR did not respond.

The attendees agreed that an International Commission for Optics should be formed as a self-governing affiliated commission of IUPAP. Each member country would form a national committee for ICO, which would select that country's representative to the ICO Bureau meetings. A set of provisional Statutes was adopted (patterned after the Statutes of IUPAP), and a provisional bureau was elected, (subject to approval by IUPAP and re-confirmation by the national committees at the first official meeting.) Thomas Smith of London was elected president; Pierre Fleury of Paris, secretary; Albert Arnulf of Paris, treasurer; and Josef Hrdlicka of Prague a vice-president. The delegates decided to hold their first plenary session of ICO in conjunction with the next General Assembly of IUPAP in July 1948 in Amsterdam.

Some attendants to the first ICO meeting celebrated in Delft, The Netherlands in July, 1948.





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# ICO Recollections

**“I have only a few memories from my period as President of the ICO, so I have decided to add some recollections of my initial experience with ICO”**



Since retiring from Stanford in 2000, Dr. Goodman has devoted time to philanthropic activities. He served as ICO Vice-President from 1984 to 1987 before becoming ICO President

**My first experience** with ICO was at the general assembly held in Redding, UK, in July of 1969. Being a newcomer to optics at that time, my strongest recollection is that I had a chance to meet some of the giants of optics for the first time. For a young man (I was 33 years old at the time, which seems young from my current perspective), new to optics, this was an amazing experience.

Turning to my years in the Vice-Presidential and Presidential chain, I remember most the challenges that ICO faced. First were the aspirations and efforts on the part of the US optical societies to become international, leading to questions as to the ICO’s unique role. Second were the constant financial challenges facing the ICO, ranging from delinquent payment of territorial dues to the lack of other sources of funding. One idea we pursued was to publish a book every three years,

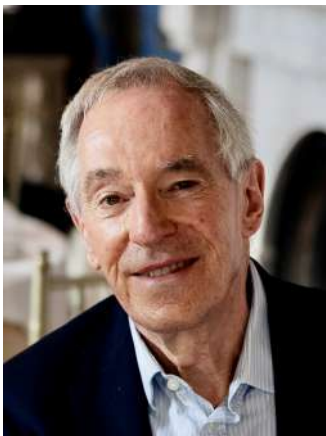
at that time under the title “International Trends in Optics,” with the royalties from these books providing additional income for the ICO. I edited the first such book, which had contributions from many of the leading international research figures in optics, but the sales were disappointing, and the publisher didn’t like the title. Other books of this kind were later published under the editorship of other officers of the ICO with different titles, but my impression is that the revenue stream from such books never amounted to much.

In closing, the ICO played an important role in my career, connecting me with the optics community beyond my country’s border. May it continue to play that role for others in the future.

**Joseph W. Goodman**  
**ICO President (1987-1990)**

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**Chris Dainty served from 1987 to 1990 as ICO Secretary General before becoming ICO President**



Prof Chris Dainty is Emeritus Professor at the Institute of Ophthalmology, Faculty of Brain Sciences of the University College London.

**I was fortunate** to succeed Joe Goodman as ICO President. He started so many good initiatives; my task was to ensure they were implemented. I had been Secretary-General during his tenure, so I knew what needed to be done.

One new development that emerged in the period 1990-1993 was the relationship between ICO and the large professional societies, OSA (now Optica), SPIE and IEEE. At the time, they were largely US-focused societies, but all had a growing worldwide membership and their publications were internationally leading.

In particular, SPIE’s international presence was growing very rapidly, and, rather amusingly, they regarded all of ICO’s own meetings, including the Triennial General Assembly, as

competition! I made a presentation to their Board explaining the facts, and their immediate concerns were addressed.

There was an overall positive outcome from this issue that lasts to this day: representatives from all the major professional societies are invited to send observers to all ICO Bureau meetings. Then, as now, good communication is key.

**Chris Dainty**  
**ICO President (1990-1993)**

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# Empowering Women in Optics

**Prof. Anna Consortini was the first woman to become ICO President in 1993.**



Prof. Anna Consortini also served as ICO Vice-President (1987-1993).

**My main concern** was to devote attention to developing countries and international collaboration. With the help of the Bureau members, in particular of Vice President Maria Yzuel and of Secretary Pierre Chavel, we obtained the merging of the two separate RIAO and OPTILAS conferences, in competition, in one joint event that is still going on. In 1993 Ukraine entered ICO and in 1996 Cuba and Ghana become territories after some years in associate positions. Change of Statute was made to introduce the new position of Associate Secretary. The ICO collaboration with ICTP in promoting Optics gave rise to the ICTP/ICO "Winter College on Optics" in 1995, and subsequently to establish an award, now

the ICO/ICTP Gallieno Denardo Award, devoted to young researchers from developing countries. I personally met Prof Tsujiuchi, IUPAP President, to improve the relationship with IUPAP, whose representative has become a fixed presence in the ICO events.

During my term I edited the third ICO-book, where, among 31 papers of eminent scientists, worth note is the paper by Emmett N. Leith, describing, for the first time after disclosure, the development of the "secret research" in his Willow Run Laboratory, Michigan University, during the so called "Cold War".

**Anna Consortini  
ICO President (1993-1996)**

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# The ICO at the Turn of the Century

**Pierre Chavel was ICO Secretary General from 1990 till 2002.**



During the three triennia 1996-2005, Professor Toshimitsu Asakura of Hokkaido University, Japan, Professor Arthur H. Guenther of University of New Mexico, USA, and Professor René Dändliker of Université de Neuchâtel, Switzerland, successively served as ICO Presidents.

**After an initial period** where ICO had grown from a mostly European and North American organization, the membership had already grown to a number of Territorial Committee members comparable to what it is today and covering all continents. The time was therefore ripe to further expand activities to the whole world and tighten the networking with existing organizations in the field of international events in Optics.

The first major ICO events and ICO congresses in various parts of the world were held during that period: ICO General Meeting ICO 17, Taejon, Korea, 1996. ICO Topical Meeting, Tianjin, China, 1998. ICO Topical Meeting, Dakar, Senegal, 2000. ICO General Meeting ICO 20, Changchun, China, 2005 (an ICO school had been held in Ghana as early as 1994). The participation of ICO in the UNESCO Abdus-Salam International Center for Theoretical Physics Winter College of Optics, Trieste, Italy, initiated in 1992, became systematic and gave rise to the creation of an advisory committee for

the "Trieste Optics System", TSOSA, where ICO was represented. That greatly contributed to the presence of ICO in parts of the world where science and its application deserve special attention. The ICO/ICTP Gallieno Denardo Award was established in 2000 to recognize contributions by young researchers from developing countries.

At the ICO 18 General Meeting in San Francisco, California, USA, new statutes were adopted to introduce a new membership category: International Society Member of ICO, for organizations active in Optics at the international level – a category that currently comprises seven members who maintain tight links and coordination with ICO: the International Society for Light within the Life Sciences (OWLS), the IEEE Photonics Society, Optica, SPIE, the European Optical Society (EOS), Red Iberoamericana de Optica (RIA), and the African Laser, Atomic and Molecular Physics Network (LAM).

**Pierre Chavel  
ICO Secretary General (1990-2002)**

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# The Power of the ICO

**Prof. Ari Friberg served as ICO Associate Secretary from 1996 till 2005, when he became ICO President**



Ari T. Friberg is professor at the University of Eastern Finland in Joensuu, Finland.

**The power of the ICO** is in its diversity and inclusivity – all world regions are participating in the advancement of optics, with particular emphasis on those areas with special needs. I served as ICO President the 3-year term from 2005 and the General Meeting we organized in 2008 in Sydney was the first ICO Congress held in the southern hemisphere.

As President, and earlier as Associate Secretary in charge of conferences and schools, I had the privilege also to be strongly involved in ICO Topical and Regional Meetings in South America and Africa. Those conferences were the high points of ICO's calendar, and they were particularly well received by the optics communities.

Another singularly powerful aspect of the ICO was its commitment to

education and training of optics and photonics throughout the world. In collaboration with its society members the ICO ran a worldwide series of highly appreciated meetings focusing exclusively on optical science and technology training, at a time when such events were a rarity.

Regarding education, I also had the pleasure to participate several times in the classic, truly memorable ICO Winter Colleges at ICTP.

On its 75th Anniversary, I wish the ICO continued strength and success in its representation of optics and photonics in the global arenas.

**Ari T. Friberg**  
**ICO President (2005-2008)**

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# The ICO Legacy

**"I remember here all my precedent, past and present colleagues, who did and are doing an incredible work with remarkable dedication"**



Prof. María Luisa Calvo from the University Complutense de Madrid (Spain) served as ICO Secretary General from 2005 to 2008 before becoming ICO President.

**The International** Commission for Optics (ICO) celebrates its 75th anniversary this year. Indeed, this is a very special opportunity to congratulate all colleagues, institutions and societies which are immersed in ICO activities, intensively dedicated to develop Optics and Photonics all over the world and to expand the presence of involved technologies.

The ICO is an international organization whose membership relies mainly on "Territorial Committees (mainly National-based Committees)", which represent Optics and Photonics activities in identified geographical areas. This is the strong link of ICO with the corresponding scientific communities, say, its highly international presence in the five Continents. The key aspects for ICO remarkable work rely precisely in encouraging activities in regions that do not have a definitive development for

local technologies. This allows and enables institutions and, through them, population to benefit from new and necessary possibilities of renewal and social well-being. Such activities in those countries are not in contradiction with but, on the contrary, are reinforced by the parallel presence and activities of ICO in other world regions identified as technologically developed. It was a great honor to be part of ICO Bureau and of a former presidency (2008-2011). I remember here all my precedent, past and present colleagues, who did and are doing an incredible work with remarkable dedication. Their enthusiasm and motivation have been and will always be an irreplaceable example and legacy for all of us who belong to the world of science.

**María L. Calvo**  
**ICO President (2008-2011)**



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# A Journey through the ICO

**“Kathy Bailey was the key person at the US National Academies which provided financial support to the US delegation”.**



Prof Duncan T. Moore is the Rudolf and Hilda Kingslake Professor of Optical Engineering at the University of Rochester.

**My journey** to the presidency of ICO began in 1987 at the meeting in Quebec, Canada. It was my first ICO Congress. I was very impressed by the caliber of the people who attended. In 2011, I was elected to be president at the meeting in Puebla, Mexico. The years of my term were dominated by the relation with International Union of Pure and Applied Physics (IUPAP). Discussions were held for several years prior to that time about ICO becoming a Union. Under several leaders of IUPAP that was not acceptable although ICO did get more representation on the IUPAP commissions with interests that overlapped those of ICO. The Union was not approved as result of the merger of ISSC and ICSU.

The voting structure was entirely new to me where territories -not individuals-cast

the votes. This often led to alliances that would be unexpected. The culmination of my interaction with ICO came 3 years after my term ended. Professor Yasuhiko Arakawa became president 2014 and was also the organizer for the Congress in 2017 in Tokyo, Japan. At a bureau meeting during his term, he told me in private that he thought he might be able to have the Emperor and Empress of Japan join the Congress for opening ceremony. Professor Arakawa asked me to do the toast to the Emperor and Empress. After the toast, I had the opportunity to speak with them about a mutual friend, Senator John D. Rockefeller IV for whom I had worked and with whom the Emperor had played tennis.

**Duncan T. Moore**  
**ICO President (2011-2014)**

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# Paving the Way for Success

**“I would like to extend my heartfelt congratulations to the ICO on its 75<sup>th</sup> anniversary”.**



Prof. Yasuhiko Arakawa is Director of the Quantum Innovation Co-creation Centre, the Institute for Nano Quantum Information Electronics at The University of Tokyo.

**Here,** I briefly mention several events during my term as the ICO President. The most memorable event was the 24th ICO General Assembly that was held in Tokyo in August 2017. The presence of Their Majesties the Emperor and Empress was particularly impressive for all participants.

The International Year of Light 2015 was also one of major events related to the ICO activities, with many activities taking place around the world, including a commemorative symposium held in Paris.

Another important activity was the work toward becoming a Union of ICSU, which was reorganized as the ISC in 2018. Based on the resolution adopted for the start of preparations for the application for becoming a Union at the 23rd ICO General Assembly in Santiago

de Compostela in 2014, we organized a working group called the ICO ICSU Committee to which former Presidents Duncan Moore and Maria L. Calvo also served as members. In April 2017 we finally sent a document entitled "Application for Federation Status within the International Council for Science" to the ICSU Secretary General. Thanks to the subsequent and persistent efforts of Past President Roberta Ramponi and our colleagues, it is our pleasure that the ISC has just recently accepted the ICO as a Category 1 Full Member (i.e., Union). It took indeed eight years to achieve this goal. We look forward to more great progress in the ICO in the future.

**Yasuhiko Arakawa**  
**ICO President (2014-2017)**

# Leadership Under Exceptional Circumstances

**Ramponi's presidency was exceptionally extended for 1 year due to the covid-19 pandemics.**



Prof. Roberta Ramponi from Politecnico di Milano (Italy) is Director of the Institute of Photonics and Nanotechnology of the National Research Council of Italy.

## Contacts

International Commission for Optics (<http://e-ico.org>).

**Bureau members (2021-2024)**

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Escola de Enx. Aeroespacial

Universidade de Vigo,

Campus de Ourense (Spain)

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**Past-president** R Ramponi

**Treasurer** J Niemela

**Assoc. Secret.** A Podoleanu

**Vice-presidents, elected**

J Czarske, P Ferraro, Q Gong,

N Kundikova K Minoshima,

S Otero, L Sirko, N Westbrook

**Vice-presidents, appointed**

G von Bally, K D Choquette,

Y Ismail, C Londoño,

G Pauliat, E Rosas, A Wagué,

**IUPAP Council**

**representative**

C Cisneros

**Editor in chief** H Michinel

**Editorial committee**

J Harvey, University of

Auckland, New Zealand;

J Baldwin, Australian National

University, Australia;

J Dudley, Université Franche-

Comté, France

I have been engaged with ICO since 2008 when EOS nominated me as appointed vice-president, then I was part of the Bureau from 2011 to 2017 as elected vice-president, I was the president from 2017 to 2021, now being the past-president. ICO has been and is for me the big worldwide family of the optics and photonics community, where we all meet and share ideas, hopes and projects for a better future. ICO is now at its 75th anniversary and has been recently recognized as full member of ISC, the International Science Council, an important achievement and a step forward to be able to attract an even wider community. I have exciting memories of my period as president. Working to promote optics and photonics as a key to foster fair and sustainable development and to meet the societal challenges that the World is dealing with, overcoming social, economic, religious and political barriers in the name of science, has been and is a wonderful and enriching experience. My special memories and thanks go to the colleagues of the Execom and Bureau, all achievements were made possible by the commitment of all of us, and we constantly shared the same goals and enthusiasm. Collaborating with our members, Territorial Committees and International Societies

was another key to increase ICO beneficial impact. It was always a pleasure to meet them all at ICO Congresses and Topical Meetings, and have the privilege to share and discuss our vision and to enjoy relaxing moments. After the raise of the interest and consciousness of the tremendous impact of light and light-based technologies favored by 2015 International Year of Light, which also fostered an increased involvement of developing countries, one of ICO major goals, in 2020 we had to face the problems related to the COVID-19 pandemic, that obliged us to revise our planned activities and postpone elections by one year. However, even during such a challenging period, the sense of ICO mission was never lost and we did our best to support the optics and photonics community.

To conclude, I would like to dedicate my deepest thoughts to Frank Höller, our Associate Secretary from 2017, who suddenly passed away at the age of 65 on April 4th, 2021. He has been both a precious colleague and friend. His enthusiasm, high professionalism and dedication was a great inspiration and will remain in my memory in the years to come.

**Roberta Ramponi**  
**ICO President (2017-2021)**

## Forthcoming events with ICO participation

Below is a list of forthcoming events with ICO participation. For further information, visit their official websites listed below.

### 5-9 September 2022

**ICO-25/OWLS-16: World Congress of the International Commission for Optics and 16<sup>th</sup> Congress in Optics within Life Sciences**

Dresden, Germany

Contact: Prof. Jürgen Czarske

[ico25@intercom.de](mailto:ico25@intercom.de) [ico-office@mailbox.tu-dresden.de](mailto:ico-office@mailbox.tu-dresden.de)

<https://ico25.org>

### 27-31 March 2023

**XI Iberoamerican Optics Meeting/XIV Latinamerican Meeting on Optics, Lasers and Applications**

Costa Rica

Contact: Prof Manuel Costa

[president@optica.pt](mailto:president@optica.pt)

<https://riao-optilas-2022.org>

Responsibility for the correctness of the information on this page rests with the International Commission for Optics (ICO); <http://www.e-ico.org/>. **President:** Prof. John C Howell, Hebrew University of Jerusalem, Israel; [john.howell@mail.huji.ac.il](mailto:john.howell@mail.huji.ac.il) **Treasurer:** Prof. Joseph Niemela, International Center for Theoretical Physics, Italy; [niemela@ictp.it](mailto:niemela@ictp.it) **Secretary:** Prof. Humberto Michinel, Universidade de Vigo, Spain; [secretariat@e-ico.org](mailto:secretariat@e-ico.org).

