

The International Council of Ophthalmology and Ophthalmic Education: 1857–2007

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Introduction

In the brain of each of us, nearly one-third of the cerebral cortex - the thin layer of 20 billion neurons responsible for language, consciousness and reasoning - is devoted to vision [1].

Cortical cells join through neural paths with the intricacies of the eye to form the visual system that is the primary sense we rely on in our daily lives. Vision contributes to learning, mobility, perception and the quality of life.

With the central role of vision in daily life, ophthalmology is among the oldest if not the oldest specialty in medicine. It is not surprising, therefore, that the oldest international medical congress that survives today, under the umbrella of the International Council of Ophthalmology, is the International Congress of Ophthalmology [2].

International Congress of Ophthalmology

The First International Congress of Ophthalmology at Brussels, Belgium, in 1857 took place at a time of momentous change in the whole of medicine. The new doctrines of Charles Darwin in biology, Louis Pasteur in bacteriology, Joseph Lister in surgery and William Morton in anesthesiology were equaled by discovery in 1850 of the ophthalmoscope by Hermann von Helmholtz. Views of the inner eye stimulated a

new science which, along with the ongoing pandemic of trachoma-related eye disease, led 150 delegates from 24 countries to convene for the reading of 34 formal papers. Highlight of the meeting was an impromptu speech by Albrecht von Graefe in which he reported his operative treatment of glaucoma by iridectomy [2]. Altogether, scientific information was exchanged, international relationships were established, and a propitious pattern was established for subsequent Congresses.

Through the ensuing 150 years, the International Congress of Ophthalmology convened at nearly four-year intervals except when interrupted by major war or political turmoil. Meeting to disseminate scientific discovery and advance ophthalmic education, congress attendance increased, subspecialty programs multiplied and growth mirrored the expanding realm of medical - surgical ophthalmology and societal needs for eye and vision care. To more effectively meet these needs, the International Council of Ophthalmology merged the International Congress of Ophthalmology into the World Ophthalmology Congress®.

World Ophthalmology Congress®

Organized by the International Council of Ophthalmology, the 2006 World Ophthalmology Congress® in Sao Paulo, Brazil, combined the XXX International Congress of Ophthalmology, the XXVI Pan-American Congress of Ophthalmology and the XVII Brazilian Blindness Prevention and Visual Rehabilitation Congress. All components were united for the purpose of transmitting knowledge, stimulating discovery through research, and decreasing avoidable visual impairment and blindness.

With Dr. Rubens Belfort (Brazil) as President, the 2006 World Ophthalmology Congress® included an outstanding scientific program as well as the seminal World Forum of Non-Governmental Organizations

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Table 1. International Federation of Ophthalmological SocietiesOphthalmologists Worldwide [3]

Africa	1,881
Asia	38,914
Australia – Oceania	1,003
Europe	44,930
North America	29,186
South America	<u>8,434</u>
Total	124,348

working to preserve and restore vision. The Congress was attended by more than 12,000 participants from 120 countries.

Convening thereafter at two-year intervals, the 2008 World Ophthalmology Congress® in Hong Kong, China, led by Dr. Dennis S. C. Lam (China) as President, is planned to combine the XXXI International Congress of Ophthalmology, the XXIII Congress of the Asia-Pacific Academy of Ophthalmology, the XIII Chinese Ophthalmological Society Congress and the XX Hong Kong Ophthalmological Symposium.

International Council of Ophthalmology

From the First International Ophthalmology Congress in 1857 through the XII Congress in 2009, the periodic congresses were organized by separate committees appointed at the end of each Congress. This process was interrupted by the tragedy of World War I, which devastated Europe and disrupted international amity.

To rekindle the sequence of international congresses after the long hiatus engendered by World War I, the International Council of Ophthalmology (ICO) was formed at a convention in Scheveningen, The Netherlands, on July 14, 1927. The new organization was established “to serve as a permanent link between all oculists in the lands in promoting and coordinating the interests of ophthalmology and its services to the community in general.” [2] The ICO promptly convened the XIII International Congress of Ophthalmology in The Hague, The Netherlands, in 1929. Since then, the ICO has continued to organize each successive International Congress of Ophthalmology and World Ophthalmology Congress®.

From its origin in 1927, ICO leaders recognized the need for a widely-based international organization to represent the interests of ophthalmology, promote the

congress and coordinate global programs of education and blindness prevention. Thus, in 1933, the ICO formed the broadly representative International Federation of Ophthalmological Societies.

Uniquely representative of world ophthalmology, the International Federation of Ophthalmological Societies, registered as a nonprofit organization in Switzerland, is made up of the national ophthalmology societies of more than 100 countries in Africa, Asia, Australia - Oceania, Europe, North America and South America (Table 1).

Subspecialty organizations are increasingly important in the advance of ophthalmology. Accordingly, the International Federation of Ophthalmological Societies expanded membership in 2004 to include multinational subspecialty societies that fulfill specific criteria. Subsequently, more than 20 multinational subspecialty societies have become members of the Federation.

In present form, the ICO is the Executive Body of the International Federation of Ophthalmological Societies. As such, the ICO is composed of members elected by Delegates of the Federation; members representing the Academia Ophthalmologica Internationalis, International Agency for Prevention of Blindness and the major supranational ophthalmology societies; and members who are the coordinators of the principal ICO programs. The ICO also gains substantial leadership from members of the Advisory Committee representing the ophthalmology subspecialties.

Use of two names, International Federation of Ophthalmological Societies for the “General Assembly” and International Council of Ophthalmology for the “Executive Body”, to designate parts of a single organization reflects history but results in confusion and ambiguity. Therefore, in 2007, consolidation is being planned. As this progresses, a single name, Interna-

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tional Council of Ophthalmology, will remain. Members of the present Federation will become Members of the ICO; Members of the ICO will become Trustees of the ICO.

Throughout the 80 years (1927 – 2007), outstanding world ophthalmologists led the ICO, congresses became increasingly large in attendance and scientific content, and the ICO acted to form the International Association (now Agency) for the Prevention of Blindness (1929) and International Organization Against Trachoma (1930). Additional activities focused on international standards for measuring visual acuity, lens power and the axis of astigmatism, as well as the organization of ophthalmology education. Critical progress in education was made under ICO Presidents Akira Nakajima, (Japan, 1990 - 1998), Gottfried O. H. Naumann (Germany, 1998 - 2006) and Bruce E. Spivey (United States, 2006 - Present).

Vision for the Future

As a major catalyst for education, the International Ophthalmology Strategic Plan to Preserve and Restore Vision - Vision for the Future stemmed from planning meetings conducted in 1999 - 2001 by the ICO, Academia Ophthalmologica Internationalis and consultants representing vision-related organizations, governmental agencies and the vision-care industry [4]. Augmented by strategic planning in 2006 - 2007, Vision for the Future stimulated ICO programs to support ophthalmic education and training, ophthalmic knowledge assessments, ophthalmology fellowships, ophthalmology training and eye care centers, eye and vision care guidelines, advocacy for preservation of vision, and research in ophthalmology and vision.

Ophthalmic Education and Training

In the years following the 2001 publication of Vision for the Future, the ICO advanced worldwide ophthalmology education and training by developing ophthalmology curricula and conducting ophthalmology resident program directors courses.

Addressing the question of “What to teach?”, a multinational ICO committee chaired by Dr. Mark O. M. Tso (United States) and specific task forces prepared curricula for Ophthalmology Medical Student Education, Ophthalmology Resident - Specialist Education, Ophthalmology Continuing Education and Para-Ophthalmic Vision Specialist Education [5-8]. Published in 2006 and posted on the open access website of the ICO (www.icoph.org), these curricula incorpo-

rate variations to reflect regional disease prevalence, undergo regular revision and are designed for use throughout the world.

Focusing on the equally important question of “How to teach?”. ICO Ophthalmology Resident Program Directors Courses concentrate on methods of instruction, assessing skills, changing resident behavior when indicated and measuring competencies. Coordinated by Dr. Karl C. Golnik (United States), regional courses for Resident Program Directors in 2004 - 2007 have been conducted in Argentina, Brazil, Egypt, Mexico, Pakistan and Peru. To promote continuing enhancement of education, the World Ophthalmology Resident Development (WORD) website (www.icoword.org) provides teaching manuals and instruction materials.

Ophthalmic Knowledge Assessments

The ICO Ophthalmic Knowledge Assessments in Basic Science and Clinical Sciences are conducted annually to answer the question “What has been learned?” by ophthalmologists in training. The Assessments are formal written examinations prepared by a multinational committee chaired by Dr. Peter G. Watson (United Kingdom). Examinations are set at the standard of the highest board, college and qualifying examinations in the world.

Assessment questions are translated from English into German, Portuguese, Spanish, Turkish and other languages according to need. Successful passage of the ICO Assessments is recognized by a certificate that is universally acknowledged to show that the holder has achieved a high standard of theoretical knowledge. In a number of countries, the ICO Assessments are part of the national examination for ophthalmology certification.

Since the Basic Science Assessment was initiated in 1995 and the Clinical Sciences Assessment was inaugurated in 1998, more than 15,000 candidates have applied for and taken the Assessments at locations throughout the world. In 2007, for example, 1,647 ophthalmologists sat for the ICO Assessments at 92 test centers in 61 countries.

Ophthalmology Fellowships

The ICO Ophthalmology Fellowships were led by Dr. Balder P. Gloor (Switzerland) from inauguration in 2001 through 2006 and by Dr. Veit-Peter Gabel (Germany) thereafter. Fellowships are awarded to ophthalmologists from developing countries who are

preferably in a teaching position and are committed to return to their country of origin after the fellowship. Generally of three months duration, fellowships are offered in Comprehensive Ophthalmology and in subspecialty areas. With 58 fellowships awarded in 2007, a total of 293 ICO Fellowships have been awarded in 2001 - 2007. Fellows from 65 countries benefited greatly from training institutions in 29 countries and returned to countries of origin with valuable knowledge and skills.

Ophthalmology Training and Eye Care Centers

To reduce avoidable blindness, the ICO is working with other ophthalmic, public service and industry organizations to build ophthalmology training and eye care centers in Nigeria, China and elsewhere. In Nigeria, Africa's most populous nation, the ICO funded equipment for broadband Internet access at six regional Resident - Specialist Training Centers. In 2007, with encouragement by the Ophthalmological Society of Nigeria, Internet access at these training facilities is opening the door for a wealth of current educational material and biomedical information.

Responding to the global epidemic of diabetes mellitus, the ICO combined with Eli Lilly and Company to establish the Peking University Eli Lilly Diabetic Eye Disease Center in 2007. Led by Dr. Zhizhong Ma (China), the Diabetic Eye Disease Center is working with consultants from Lions Aravind Institute of Community Ophthalmology to decrease diabetic eye disease by coordinated diabetic medical care and ophthalmic care, community outreach and diabetes-related education.

Eye and Vision Care Guidelines

ICO Eye and Vision Care Guidelines acknowledge that medical knowledge is derived from thousands of sources and technology is advancing continuously. Therefore, assimilation of knowledge and technology into best medical practice is a continuing challenge. The ICO Eye and Vision Care Guidelines are needed to define appropriate eye care and to encourage a universal high standard of quality.

A multinational ICO committee chaired by Dr. Richard L. Abbott (United States) is responsible for developing guidelines. The committee reviews and adapts for worldwide use the American Academy of Ophthalmology Preferred Practice Patterns®, Royal Australian and New Zealand College of Ophthalmologists Clinical Practice Guidelines for Specialists and similar practice recommendations by other pro-

fessional organizations.

When formulated, Guidelines are placed on the Internet for global peer review. By this process, the ICO has formed eye care guidelines for management of 20 major ophthalmic conditions and posted these on the Internet (www.icoph.org/guide).

Advocacy for Prevention of Blindness

Advocacy for blindness prevention entails public education and building professional leadership. Public education, led by Dr. Hugh R. Taylor (Australia) brings attention to the extent and causes of visual impairment and blindness. Worldwide 161 million people are severely visually impaired or blind due to disease or injury [9]. An additional 153 million have severe visual impairment due to uncorrected refractive error [10]. The vast majority of this visual impairment is avoidable - either preventable or treatable - with present knowledge and technology [9-10].

To build professional leadership for blindness prevention, the ICO World Ophthalmology Roundtable on Leadership Development (WORLD) was initiated in 2007 under the leadership of ICO President, Dr. Bruce E. Spivey (United States). With regional meetings of ophthalmology leaders in Pakistan, United Arab Emirates and Kenya, working groups produced reports on topics such as Enhancing Resident Education, Equipment for Training and Practice, and Subspecialty Development.

Research in Ophthalmology and Vision

The ICO Research Committee chaired by Dr. Alfred Sommer (United States) has prepared "A Research Agenda for Global Blindness Prevention" (www.icoph.org/research). Officially endorsed by the World Health Organization, this report recommends operational studies to enhance quality, availability and affordability of eye care worldwide.

As operational research, the ICO is supporting the Diabetic Eye Disease Community Screening Project in Shunyi County, China. Working with the Peking University Eli Lilly Diabetic Eye Disease Center in Beijing, the community screening project goal is to develop a model that can be replicated in rural regions.

International Ophthalmology: 150 Years

One hundred fifty years (1857 – 2007) is a blink in geologic time but it is virtually the entire duration of

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modern ophthalmology. Following discovery of the ophthalmoscope in 1850, the First International Congress of Ophthalmology was attended by ophthalmologists from 24 countries. Conducted periodically thereafter, the International Congress of Ophthalmology is the oldest international medical congress that survives. Not only does the International Congress of Ophthalmology survive, it is merged with regional and national ophthalmology meetings to form the biennial World Ophthalmology Congress®.

When catastrophic events of World War I interrupted the international congresses, the International Council of Ophthalmology was founded in 1927 to organize resumption of the international congresses. The ICO was strengthened in 1933 by formation of a broadly representative body of ophthalmology organizations, the International Federation of Ophthalmological Societies. Throughout the ensuing decades the ICO, as Executive Body of the Federation, contributed to blindness prevention, promulgated international eye care standards and fostered international ophthalmology.

In 1999 – 2001, visionary leaders of the ICO organized a series of planning meetings that resulted in the International Ophthalmology Strategic Plan to Preserve and Restore Vision - Vision for the Future [4]. Augmented by strategic planning in 2006 - 2007, Vision for the Future stimulated ICO programs that support ophthalmic education and training, ophthalmic knowledge assessments, ophthalmology fellowships, ophthalmology training and eye care centers, eye and vision care guidelines, advocacy for blindness prevention, and research in ophthalmology and vision. A start has been made, but much remains to be accomplished.

The world today presents extraordinary challenges in the context of increasing economic, environmental and geopolitical interdependency. More than at any time in the history of civilization, the well being of each individual is inexorably linked to that of every other. The reality of extensive and avoidable visual impairment and blindness throughout the world compels a global initiative to realize the opportunities for measures to promote the best possible vision for every person.

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