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Ghent, Belgium

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Vice-President, International Council of Ophthalmology
Chairman, Magrabi Hospitals and Centers
Jeddah, Saudi Arabia

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Carl Zeiss Meditec AG
Oberkochen, Germany

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F. Bruce Fralick Professor & Chair
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Santa Ana, California

Alice R. McPherson, M.D.
President, Retina Research Foundation
Professor of Ophthalmology
Baylor College of Medicine
Houston, Texas

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Santen Pharmaceutical Co., Ltd.
Osaka, Japan

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Chairman Emeritus
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Director, National Eye Institute
National Institutes of Health
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Professor & Chair Emeritus, Department of Ophthalmology
Director Emeritus, Jules Stein Eye Institute
University of California
Los Angeles, California

Hugh R. Taylor, A.C., M.D.
Treasurer, International Council of Ophthalmology
Harold Mitchell Professor of Indigenous Eye Health
University of Melbourne
Melbourne, Australia
## 2009 International Council of Ophthalmology (ICO) and ICOFoundation Programs Include:

<table>
<thead>
<tr>
<th>ICOFoundation</th>
<th>Ophthalmology Training and Eye Care Centers</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Programs in 2009 and Officers for 2010.</td>
<td>Training and Eye Care Centers advanced in Nigeria, China, Slovenia and Cameroon.</td>
</tr>
<tr>
<td><strong>2010 World Ophthalmology Congress</strong></td>
<td><strong>Correction of Refractive Error</strong></td>
</tr>
<tr>
<td>Berlin, Germany on June 5–9, 2010 600 sessions incorporate presentations by more than 3,000 of the world’s vision scientists.</td>
<td>Planned in 2009, the School Eye Health Programme is commencing in Nigeria and Pakistan.</td>
</tr>
<tr>
<td><strong>Ophthalmic Education and Training</strong></td>
<td><strong>Eye and Vision Care Guidelines</strong></td>
</tr>
<tr>
<td>“Refocusing Ophthalmic Education“ emphasizes measurement of competence.</td>
<td>China’s Ministry of Health endorsed Eye Care Guidelines.</td>
</tr>
<tr>
<td><strong>Ophthalmology Program Directors Courses</strong></td>
<td><strong>Advocacy for Preservation and Restoration of Vision</strong></td>
</tr>
<tr>
<td><strong>Ophthalmic Knowledge Examinations</strong></td>
<td><strong>Research in Ophthalmology and Vision</strong></td>
</tr>
<tr>
<td>Examinations conducted for 1,874 candidates at 96 test centers in 65 countries.</td>
<td>“Clinical Research: A Primer for Ophthalmologists” presented on the ICO website at <a href="http://www.icoph.org">www.icoph.org</a>.</td>
</tr>
<tr>
<td><strong>Ophthalmology Fellowships</strong></td>
<td><strong>ICOFoundation Donor Honor Roll</strong></td>
</tr>
<tr>
<td>58 ICO International Fellowships awarded to ophthalmologists from 28 developing countries. New in 2009, the ICO Helmerich Ophthalmology Subspecialty Fellowships—one year in duration.</td>
<td>The ICOFoundation gratefully recognizes supporters of worldwide programs to preserve, improve and restore vision.</td>
</tr>
</tbody>
</table>


### On the Cover: Ribbon synapse between a retinal rod photoreceptor and endings of horizontal and bipolar cells. Red spheres represent vesicles docked at active zones. Photographs reproduced with permission of Prof. Guido Zampighi, University of California, Los Angeles, United States.
Worldwide needs and opportunities for eye care are greater than ever before because of population growth and aging, advances in ophthalmic science and global planning, and the impact of vision on quality of life.

**Worldwide Needs for Eye Care.** Worldwide, 314 million people are severely visually impaired and of these, 45 million are blind. The burden of lost sight is uneven with nearly 87% of the world’s visually impaired living in developing countries. More than 1.4 million children are blind, but visual impairment and blindness are more prevalent among adults 50 years of age and older, and females are more at risk at every age, in every part of the world. (Ref. 1. World Health Organization, www.who.int/mediacentre).

Adding to the tragic burden of visual impairment, the world’s population is projected to increase in number and, even more significantly, advance in age. Between 2000 and 2030 in the United States, for example, the number of people age 65 years and older will increase from 35 million to more than 71 million. (Ref. 2. Lee P. Into the Looking Glass: Factors and Opportunities to Reshape Eye Care in the Next 25 Years. Ophthalmol 2007; 14: 1-2). With each decade of increased age over 40, the prevalence of vision loss and blindness increases threefold (Ref. 3. Taylor HR. Eye Care: Dollars and Sense. Am J Ophthalmol 2007;143:1-8).

**Advances in Ophthalmic Science and Global Planning.** At least 75% of disease-related vision loss and nearly 100% of visual impairment due to refractive error are avoidable—either preventable or treatable with currently available knowledge and biotechnology (Ref. 1, Ref. 4.Global Initiative for the Elimination of Avoidable Blindness. World Health Organization/PBL/97.61). Intense efforts to control onchocerciasis with vector elimination and treatment of 40 million people in 16 countries have greatly decreased the occurrence of onchocerciasis, the dreaded “River Blindness.” Scientific discovery, innovative technology and clinical trials—including gene therapy trials—document increasingly effective medical and surgical means to prevent vision loss caused by cataract, glaucoma, childhood eye disease, diabetic retinopathy, age-related macular degeneration and a host of other conditions.


**Vision-related Quality of Life.** Increasingly, the impact of vision on quality of life is recognized. In each of us, one-third of the brain's cerebral cortex—the wrinkled layer of 20 billion neurons responsible for language, consciousness and reasoning—is devoted to vision (Ref. 6 Nyberg KA. An Early Start for the Thinking Brain. Yale Medicine, Winter 2007, 10). Cortical cells join through neural paths to the intricacies of the eye and 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.

The world today presents unprecedented challenges in the context of increasing economic, environmental and geopolitical interdependency. More than at any time in the past, the well-being of each individual is linked to that of every other. The reality of extensive and avoidable visual impairment and blindness throughout the world compels global action to obtain the best possible vision for every person.
The International Council of Ophthalmology Foundation (ICOFoundation; www.icofoundation.org), established in 2002, acts to promote ophthalmic education, advocate quality eye care and advance scientific ophthalmology through support of International Council of Ophthalmology programs.

In 2009, the ICOFoundation acknowledged, with profound sadness, the death of Prof. Yasuo Tano of Osaka, Japan on January 31st. Prof. Tano, a founding member of the ICOFoundation Board of Directors, was a worldwide leader of ophthalmology and a highly respected colleague. At the time of his death, Prof. Tano was President of the Asia Pacific Academy of Ophthalmology, Treasurer of the International Council of Ophthalmology, Immediate Past President of the Japanese Ophthalmological Society and Chairman of the Department of Ophthalmology at Osaka University.

As an enduring memorial, the ICOFoundation joined the ICO in establishing the “ICO Yasuo Tano International Fellowship.” This fellowship is to be awarded each year to an ophthalmologist from a developing country selected by the ICO International Fellowship Committee to complete a fellowship in Japan.

In 2009, the ICOFoundation Board of Directors was greatly enhanced by election of three new members. Bringing extensive experience and perspective to the Foundation, the new Directors are:

- Kevin Buehler, President & CEO of Alcon, Inc.;
- Michael Kaschke, Ph.D., President & CEO of Carl Zeiss Meditec, AG;

Implementing the ICOFoundation strategic plan, activities in 2009 included increased support for ongoing programs and commencement of new programs including:

- Selection of Ophthalmology Fellows for subspecialty training one year in duration by the ICO/Alcon Ophthalmology Training Center at University Eye Hospital, Ljubljana, Slovenia and by the ICO Helmerich International Fellowship Program sponsored by the Retina Research Foundation;
- Correction of refractive errors through inauguration of the School Eye Health Programme, sponsored by Light For The World, in Nigeria and Pakistan; and
- Initiation of planning for an ophthalmology subspecialty training and eye care center in Central Africa at Yaoundé, Cameroon.

Dr. Hilel Lewis, President, led the ICOFoundation with distinction throughout 2009. However, he found it necessary to step down from this position effective December 31, 2009. The ICOFoundation is grateful to Dr. Lewis and pleased that he will remain a member of the Foundation’s Board of Directors.

For the future, the Foundation is pleased to report that Stephen Ryan, M.D., President of the Doheny Eye Institute and Grace and Emery Beardsley Professor of Ophthalmology at the University of Southern California (USC), Los Angeles is joining the ICOFoundation Board of Directors in January 2010 as President-Elect with commencement of his position as ICOFoundation President on January 1, 2011. To facilitate this transition, Dr. Bradley Straatsma accepted the Board’s invitation to resume the position of ICOFoundation President for 2010.

ICOFoundation Officers for 2010 are:
- Bradley Straatsma, M.D., J.D., President
- Alfred Sommer, M.D., M.H.S., Vice President
- Bruce Spivey, M.D., M.Ed., Secretary-Treasurer
Tracing its origin to the first International Congress of Ophthalmology in 1857, the International Council of Ophthalmology (ICO; www.icoph.org), registered as a nonprofit organization in Switzerland, is composed of the national ophthalmology societies of over 100 countries and more than 25 multinational ophthalmology subspecialty societies. Uniquely representative of world ophthalmology, the ICO Board of Trustees, Advisory Committee and Program Leaders met in San Francisco, California on October 21–23, 2009. With broad discussion, the ICO moved vigorously in 2009 to address the theme of refocusing ophthalmic education, meet the needs of people with uncorrected refractive error and prepare for the 2010 World Ophthalmology Congress®.

### Refocusing Ophthalmic Education

Led by Dr. Bruce Spivey (United States), ICO President, and Dr. Mark Tso (United States and China), ICO Education Committee Chair, Refocusing Ophthalmic Education recognizes the change in medical education from emphasis on duration of training to assessment of competence in specific areas such as medical knowledge, patient communication and surgical skills. Refocusing Ophthalmic Education also incorporates the principles of adult learning and the increasing availability of print, video and Internet resources for learning.

### Uncorrected Refractive Error

The World Health Organization estimates that 153 million people have visual impairment due to uncorrected refractive error. With Dr. Muhammad Babar Qureshi (Pakistan) as Chair, the ICO Task Force on Uncorrected Refractive Error developed a strategic plan. Based on this plan, the Task Force began pilot projects in Pakistan and Uganda, sponsored by Light For The World, in 2009.

The ICO Task Force on Uncorrected Refractive Error also completed the final stages of planning for a major program to address uncorrected refractive error through schools in Pakistan and Nigeria. Sponsored by Light For The World, this extensive program for children (age 5–15 years) is a major undertaking to screen, measure refractive error and provide corrective eyeglasses to enhance learning and quality of life.

### 2010 World Ophthalmology Congress®

Planning the biennial World Ophthalmology Congress® is a multiyear task. For example, site selection, Congress leadership and partnership discussions for the 2010 World Ophthalmology Congress® began in 2004. In similar manner, planning is ongoing for the 2012 World Ophthalmology Congress® in Abu Dhabi and the 2014 World Ophthalmology Congress® in Tokyo.

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**International Council of Ophthalmology**

**OPHTHALMOLOGISTS WORLDWIDE**

<table>
<thead>
<tr>
<th>Region</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
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<tr>
<td>Asia</td>
<td>38,914</td>
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<tr>
<td>Australia—Oceania</td>
<td>1,003</td>
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<tr>
<td>Europe</td>
<td>44,930</td>
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<tr>
<td>North America</td>
<td>29,186</td>
</tr>
<tr>
<td>South America</td>
<td>8,434</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>124,348</strong></td>
</tr>
</tbody>
</table>

Organized by the International Council of Ophthalmology, the 2010 World Ophthalmology Congress® (http://www.woc2010.org) in Berlin, Germany on June 5–9, 2010, combines the XXXII International Congress of Ophthalmology, the 108th Congress of the German Ophthalmological Society, and the 2010 German Academy of Ophthalmology Meeting. Congress President, Dr. Gerhard Lang (Germany), Program Director, Dr. Gabriele Lang (Germany), Scientific Program Chair, Dr. Stephen Ryan (United States), and colleagues have organized an outstanding scientific program with subspecialty days for cataract surgery, refractive surgery, glaucoma, pediatric ophthalmology and retina. Illustrating the subspecialties, the world’s experts are participating in symposia, presentations and exhibits.

Highlighting the theme of Refocusing Ophthalmic Education, the World Ophthalmic Education Colloquium features symposia on Medical Student Education, Resident Program Development, Training Para-ophthalmic Personnel, Continuing Professional Development and Teaching Ophthalmic Subspecialties. Emphasizing the application of education to the ultimate goal of preserving and restoring vision, Vision 2020 Symposia are entitled Reviewing Progress in Preventing Avoidable Blindness Worldwide, Challenges in Building Comprehensive Eye Care Within a Health Care System and Combating Refractive Error From School Age Through Presbyopia. In aggregate, the 2010 World Ophthalmology Congress® incorporates over 600 sessions and presentations by more than 3,000 of the world’s vision-related scientists.

To extend educational benefits of the Congress, the ICO and ICOFoundation plan to present selected symposia, lectures and presentations, as well as highlights of the World Ophthalmic Education Colloquium on the Internet for open viewing.

The 2012 World Ophthalmology Congress® will convene in Abu Dhabi, United Arab Emirates, and the 2014 World Ophthalmology Congress® will be held in Tokyo, Japan.

Actions as closely coordinated as the two strands of DNA enabled the ICO and ICOFoundation to advance education, training and eye care programs in 2009. Major activities focus on Ophthalmic Education and Training, Ophthalmic Knowledge Examinations, Ophthalmology Fellowship Training, Ophthalmology Training and Eye Care Centers, Correction of Refractive Error, Eye and Vision Care Guidelines, Advocacy for Preservation of Vision, and Research in Ophthalmology and Vision.

Of benefit to all programs, the ICOFoundation is working with the ICO to enhance communication through information technology and continuous updating of the ICO website ([www.icoph.org](http://www.icoph.org)). The Internet is the hallway for global education, advocacy and improvement of eye care worldwide.
ICO programs of ophthalmic education and training advanced in 2009 through the broad initiative of “Refocusing Ophthalmic Education” and enhancement of specific education and training programs.

“Refocusing Ophthalmic Education”—initiated by Dr. Bruce Spivey (United States), ICO President, and Dr. Mark Tso (United States and China), ICO Education Committee Chair—encompasses (1) change from measurement by duration of training to measurement by assessment of competence in medical knowledge, surgical skills and other components, (2) the principles of adult learning and (3) the vast amount of medical-related information on the Internet for both learning and guidance at the time and place of contact with patients. The concepts of refocused education apply to:

- Ophthalmology Curricula
- Ophthalmology Education Resources
- Ophthalmology Resident Program Directors Courses
- World Ophthalmology Residency Development (WORD) Forum

**Ophthalmology Curricula**

Addressing the question of “What to teach?”, the ICO Education Committee and specific task forces have developed curricula for Ophthalmology Medical Student Education, Ophthalmology Resident-Specialist Education, Ophthalmology Continuing Education, and Para-Ophthalmic Vision Specialist Education.

**Ophthalmology Medical Student Education.**

Cataract, glaucoma, age-related macular degeneration and diabetic retinopathy are increasingly prevalent and of growing importance in world health care. Consequently, the ICO and the ICOFoundation are committed to ophthalmology education for medical students through a universally applicable curriculum. With revisions by the ICO Medical Student Education Committee led by Dr. Susan Lightman (United Kingdom), this curriculum presents a core of essential knowledge, content appropriate for specific geographic regions, and measures for objective assessment of the student’s knowledge and skill (www.icoph.org/pdf/icocurricmed.pdf).

This medical student curriculum is augmented by the ICO handbook for medical students, illustrated lectures and teaching images that are a valuable resource for teaching medical students. (www.icoph.org/med/resources.html).

**Ophthalmology Resident-Specialist Education.**

The ICO multinational committee led Dr. Andrew Lee (United States) works to determine the “need to know” for ophthalmologists throughout the world and directs the multilevel “Principles and Guidelines of a Curriculum for Education of the Ophthalmic Specialist” that is presented on the Internet (www.icoph.org/pdf/icocurricres.pdf).

As a part of regular curriculum review, an additional module on Teaching Community Eye Health emphasizes the importance of providing eye care for all members of the community.

In 2009, the European Board of Ophthalmology, led by President Marko Hawlina (Slovenia), accepted the ICO Resident-Specialist Curriculum as the scaffold for training of the ophthalmic specialist. Importantly, in accordance with the principles of “Refocusing Ophthalmic Education”, this action by the European Board of Ophthalmology directs attention to the knowledge, skills and additional competencies to be mastered during ophthalmology resident-specialist education.
Ophthalmology Continuing Education. A multinational committee led by Dr. Juan Verdaguer (Chile) coordinates curriculum activity and program action concerning ophthalmology continuing education. This program recognizes the need for continuing enhancement of knowledge, professional skills and training for utilization of advanced technology throughout a professional career. In basic form, the continuing education curriculum is posted on the Internet (www.icoph.org/pdf/icocurriccme.pdf).

In 2009, the ICO Continuing Education Committee initiated a Visiting Professor Program that provides for highly qualified ophthalmology specialists to devote periods of one week or more to ophthalmology training centers in developing countries with emphasis on didactic training and skill enhancement.

Para-Ophthalmic Vision Specialist Education. Addressing para-ophthalmic vision specialist education, Dr. William Astle (Canada) leads a multinational ICO committee committed to the education of community based para-ophthalmic personnel, hospital based para-ophthalmic personnel, orthoptists and ophthalmic technicians. The program, developed by this team of educators, is presented on the Internet (www.icoph.org/pdf/icocurricpara.pdf).

Ophthalmology Education Resources
Commencing in June 2008, the ICO and American Academy of Ophthalmology (AAO) are collaborating to provide ophthalmologists in developing nations free access to the AAO Ophthalmic News and Education (O.N.E.) Network. The ICO and AAO jointly established an International Advisory Panel to provide advice and work to make the O.N.E. Network increasingly useful to ophthalmologists in developing countries worldwide.

In 2009, the ICO and AAO again collaborated to send the AAO BSCS to nearly 200 additional ophthalmology residency training programs in economically disadvantaged developing countries. Distribution, at no cost to the recipient programs, provides the 13 volume BSCS as a core educational component for resident training.

The ICO Medical Student Handbook is available online in Arabic, Azerbaijani, Chinese, French, Spanish and English (www.icoph.org/pdf/ICOMedicalStudentEnglish.pdf).

ICO Ophthalmology Curricula for Medical Students, Resident-Specialists, Continuing Education and Para-Ophthalmic Specialists are available on the Internet.
The ICO Task Force on Coordination and Education of Program Directors of Ophthalmology Residencies led by Dr. Karl Golnik (United States) stimulated distribution of resident-specialist educational materials on the Internet (www.ico.org and www.icoword.org) and concentrated on Ophthalmology Resident Program Directors Courses. These courses focus on methods of instruction, assessment of resident skills, changing resident behavior and measuring competence. Presented by the ICO and ICOFoundation, Program Directors Courses during 2009 were conducted in China, Colombia and Indonesia.

**China.** At Beijing, China, on May 10–12, 2009, the Program Directors Course was led by Dr. Li Xiaoxin (China), Chair, and Dr. Karl Golnik (United States), Co-Chair. The program was co-sponsored by the Chinese Ophthalmological Society and the ICOFoundation through an unrestricted grant from Allergan, Inc. Faculty members also included Dr. Eduardo Mayorga (Argentina), Dr. Gabriela Palis (Argentina), Dr. Peter Quiros (United States) and Dr. Bruce Spivey (United States). The agenda was determined in part by a needs assessment completed by the hosts. Participation by more than 50 educators was enthusiastic and a frequent question was “When will the next ICO China Program Directors Meeting take place?”

**Colombia.** At Bogotá, Colombia, the Program Directors Course on February 9–10, 2009, was chaired by Dr. Fernando Gomez (Colombia) and co-chaired by Dr. Peter Quiros (United States). ICO faculty participants were Dr. Enrique Graue-Wiechers (Mexico), Dr. Eduardo Mayorga (Argentina), Dr. Gabriela Palis (Argentina) and Dr. Peter Quiros. The course was attended by more than 40 program directors from Colombia, Bolivia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Panamá and Venezuela. At the conclusion of the meeting, Colombia educators formed a Task Force to adapt a written standardized curriculum for ophthalmology resident training in Colombia.
Indonesia. At Bali, Indonesia, on May 14–15, 2009, the Ophthalmology Program Directors Meeting was hosted by Dr. Tjahjono Gondhowiardjo (Indonesia), Chair, and the Indonesian Ophthalmologic Society. Faculty included the Co-Chair, Dr. Karl Golnik (United States), Dr. Anthony Arnold (United States), Dr. Eduardo Mayorga (Argentina), Dr. Gabriela Palis (Argentina) and Dr. Bruce Spivey (United States). Response was enthusiastic from the 33 representatives of ophthalmology training programs in Indonesia, Laos, Maylasia, Nepal, Philippines, Thailand and Vietnam. Evaluations by these participants emphasized the stimulus to ophthalmic education and appreciation for sponsorship by the ICO and ICOFoundation through an educational grant from Allergan, Inc.

Turkey and China in 2010. Continuing the educational programs for Ophthalmology Resident Program Directors in 2010, courses are planned to take place in Ankara, Turkey and Beijing, China.

In 2009, the Task Force on Coordination and Education of Program Directors of Ophthalmology Residencies worked to achieve continued improvement of the ICO Program Directors Courses, devise methods to measure success of the Program Directors Meetings, sustain interaction among program directors following a regional meeting and continually explore innovative approaches to global ophthalmology program director education.

World Ophthalmology Residency Development (WORD) newsletters and educational materials are available in English and Spanish at www.icoword.org.

World Ophthalmology Residency Development (WORD) Forum

In 2009, the ICO Task Force on Emerging Technologies for Teaching and Learning chaired by Dr. Eduardo Mayorga (Argentina), markedly enhanced Internet options appropriate to global education. The World Ophthalmology Residency Development (WORD) Forum, initiated by Dr. Eduardo Mayorga and Dr. Gabriela Palis (Argentina), continued to function prior to and following the Program Directors Courses and also presents monthly Newsletters in English and Spanish. Newsletters contain blogs, for example, on adult learning and use of technology in teaching, as well as lectures and videos contributed by program directors for use by other program directors throughout the world. The collection of teaching materials for use in medical student and resident-specialist education is the section entitled, “What to Teach With: ICOpedia Video and Lecture Center.” All material can be accessed on the Internet at www.icoword.org.

Ophthalmology Resident Program Directors Courses

2004 Mexico City, Mexico
Chair: Dr. Enrique Graue-Wiechers (Mexico)
Participants: Program Directors of Mexico.

2006 Lima, Peru
Chair: Dr. Jose Antonio Roca (Peru)
Participants: Program Directors of Peru, Bolivia and Ecuador.

Cairo, Egypt
Chair: Dr. Fathi El Sahn (Egypt)
Participants: Program Directors of Egypt, Algeria, Bahrain, Iraq, Jordan, Kuwait, Lebanon, Libya, Pakistan, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, Yemen and United Arab Emirates.

2007 Lahore, Pakistan
Chair: Dr. M. Daud Kahn (Pakistan)
Participants: Program Directors of Pakistan, Afghanistan, Bangladesh, China, India and Maldives.

Buenos Aires, Argentina
Chair: Dr. Ricardo Dodds (Argentina)
Participants: Program Directors of Argentina, Chile, Paraguay, Peru and Uruguay.

Brasilia, Brazil
Chair: Dr. Paulo Mello (Brazil)
Participants: Resident Program Directors of Brazil.

2008 Florianopolis, Brazil
Chair: Dr. Karl Golnik (United States)
Participants: Resident Program Directors of Brazil.

Portoroz, Slovenia
Chair: Dr. Marko Hawlina (Slovenia)
Participants: Program Directors of Belgium, Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Rumania, Russia, Ukraine, United Kingdom and Slovenia.

Addis Ababa, Ethiopia
Chair: Dr. Amir Bedi (Ethiopia)
Participants: Program Directors of Angola, Cameroun, Ethiopia, Ghana, Guinea, Kenya, Malawi, Nigeria, Rwanda, South Africa, Sudan, Tanzania, Uganda, United Arab Emirates, Zamba and Zimbabwe.

2009 Beijing, China
Chair: Dr. Li Xiaoxin (China)
Participants: Program Directors of China.

Bogota, Colombia
Chair: Dr. Fernando Gomez (Colombia)
Participants: Program Directors of Colombia, Bolivia, Costa Rica, Ecuator, El Salvador, Guatemala, Honduras, Nicaragua, Panama and Venezuela.

Bali, Indonesia
Chair: Dr. Tjahyono Gondhowiardjo (Indonesia)
Participants: Program Directors of Indonesia, Laos, Maylasia, Nepal, Philippines, Thailand and Vietnam.
“Adequate testing of acquired knowledge is a fundamental part of an educational programme.”

Dr. Peter G. Watson
United Kingdom

ICO Ophthalmic Knowledge Examinations are formal written examinations that present questions prepared by a multinational committee of examiners. Examinations are set at the same standard as the highest board, college and qualifying examinations in the world.

Assessment questions are prepared in English and translated into French, German, Mandarin, Portuguese, Russian, Spanish and Turkish. At the time of examination, the English version is presented along with the alternate language so that comparisons can be made by the candidate.

Successful passage of both the ICO Basic Science and Clinical Sciences Examinations is recognized by a certificate. In Turkey and a number of other countries, the ICO examinations are part of the national examination for certification as an ophthalmologist.

Dr. David Taylor, FRCOphth, D.S.C. (Med) (United Kingdom) commenced appointment as Chair of the ICO Ophthalmic Knowledge Examinations in 2008. Dr. Taylor plans that the ICO Examinations will reflect recent additions to the ICO curriculum related to Community and Public Health, Embryology, and Physiology.

With increasing acceptance throughout the world, a differential fee structure was introduced for the ICO Examinations to keep the fees as low as possible for candidates from economically disadvantaged nations. The ICO Foundation augments this flexibility by providing support funds when necessary to assist candidates unable to compete for the ICO certificate because of economic factors.

Since the Basic Science Examination was inaugurated in 1994 and the Clinical Sciences Assessment was initiated in 1998, 17,307 candidates have voluntarily applied for and taken the Examinations. In recent years, the annual Examinations took place on April 12, 2007, April 10, 2008 and April 2, 2009, in countries that range alphabetically from Afghanistan to Zimbabwe.

In 2009, the ICO approved Dr. David Taylor’s proposal for an ICO International Advanced Examination. This will be at a higher level than the ICO Basic Science and Clinical Sciences Examinations and evaluate knowledge as well as clinical experience. Successful candidates will be able to use the post-nominal acronym FICO (Fellow of the International Council of Ophthalmology). Applications and information may be obtained at www.advanced.exam@icoph.org and the first ICO International Advanced Examination will be conducted on October 21, 2010.
<table>
<thead>
<tr>
<th>Year</th>
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<th>Test Centers</th>
<th>Countries</th>
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<tr>
<td>2009</td>
<td>1874</td>
<td>96</td>
<td>65</td>
</tr>
</tbody>
</table>

2010 Scheduled for April 15, 2010.

Image by Professor Guido Zampighi (United States).
The ICO Fellowship Program serves to advance the education, technical expertise and professionalism of young ophthalmologists from developing countries who apply for fellowship training at the world’s leading ophthalmology centers and are committed to return to their home countries with new knowledge and skills.

In 2009, the ICO established a new Task Force on Subspecialty Education. Led by Dr. Randal Olson (United States), this Task Force is addressing the needs and requirements of subspecialty education. Subspecialties are increasingly important in the delivery of high quality eye and vision care.

Recognizing these broad advances, the highly successful ICO Fellowship Program was augmented in 2009 by the ICO Three-Stage Sandwich Fellowship and initiation of the ICO Helmerich Ophthalmology Subspecialty Fellowships.

**ICO International Fellowships.** The ICO International Fellowship Program inaugurated in 2001 under leadership of Dr. Balder Gloor (Switzerland) and led since 2006 by Dr. Veit-Peter Gabel (Germany) provides three months of advanced training at leading ophthalmology departments. Fellowships are awarded to young ophthalmologists from developing countries who are preferably in a teaching position, preferably hold the ICO Ophthalmic Knowledge Examination Certificate and are committed to return to their country of origin after the fellowship.

Fellowships are offered in Comprehensive Ophthalmology and in subspecialty areas. Fellows are taught the latest methods of diagnosis and therapy, and are given the opportunity to improve practical skills and broaden their ophthalmological knowledge.

ICO International Fellowships are offered at more than 120 institutions that have agreed to accept ICO Fellows and identified the characteristics of their programs on the Internet. Candidates apply to a host institution via the Internet, goals of the fellowship are established and language issues affecting communication are considered. Following evaluation of all information, ICO Fellowships are awarded. To control costs, all parts of the ICO Fellowship application, review, award process and follow-up report are conducted online ([www.icoph.org/fellow](http://www.icoph.org/fellow)); Ref 8. Gabel V-P, Steger M, Gloor B. Eight years of IFOS/ICO fellowships for ophthalmologists from developing countries. Graefes Arch Clin Exp Ophthalmol 2008;246:939-981).

In 2009, 58 ICO International Fellowships were awarded to applicants from 28 countries, including for the first time fellowship awards to applicants from Ecuador, Myanmar, Sri Lanka, Uzbekistan and Yemen. Fellows will obtain training at advanced institutions in 18 countries and return to home nations with increased abilities and professionalism.

With support from the ICO, [ICOFoundation](http://www.icofoundation.org), International Ophthalmological Foundation (Germany) and other sources, 405 ICO Fellowships were awarded in 2001–2009. All together, fellows from 69 countries benefited greatly from training at institutions in 29 countries. Reports filed at the conclusion of each fellowship attest to the cordiality of international relationships and the extraordinary value of the knowledge and skills acquired during the fellowship.

To sustain relationships established during fellowships, the First ICO Fellowship Reunion for Hosts and Fellows will take place during the 2010 World Ophthalmology Congress in Berlin on June 7, 2010.

### ICO International Fellowship Awards: 2001–2009

<table>
<thead>
<tr>
<th>Year</th>
<th>Fellowship Awards</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>9</td>
</tr>
<tr>
<td>2002</td>
<td>42</td>
</tr>
<tr>
<td>2003</td>
<td>37</td>
</tr>
<tr>
<td>2004</td>
<td>42</td>
</tr>
<tr>
<td>2005</td>
<td>48</td>
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<tr>
<td>2006</td>
<td>57</td>
</tr>
<tr>
<td>2007</td>
<td>58</td>
</tr>
<tr>
<td>2008</td>
<td>54</td>
</tr>
<tr>
<td>2009</td>
<td>58</td>
</tr>
<tr>
<td>Total</td>
<td>405</td>
</tr>
</tbody>
</table>
From Pakistan to Osaka University Medical Center, Osaka, Japan.

“I had the privilege of witnessing and learning the latest trends in vitreoretina.”

Dr. Qasim Chauhdry, Pakistan

Under supervision of Prof. Yasuo Tano (center) and Prof. Motohiro Kamei (left), Dr. Qasim Chauhdry (right) trained in vitreoretinal surgery. Following the death of Prof. Tano in 2009, the ICO and ICOFoundation established the “ICO Yasuo Tano International Fellowship” to be awarded each year.

From Romania to the Jules Stein Eye Institute, University of California, Los Angeles, United States.

“I had complete integration into clinical activity, research and the very rich academic environment.”

Dr. Oana Mihacea, Romania

Under supervision of Prof. Anthony Arnold, Dr. Oana Mihacea trained in neuro-ophthalmology.

From India to the University Medical Center Hamburg-Eppendorf, Hamburg, Germany.

“It was a great pleasure to have Dr. Rahul Baile with us. We would welcome him back should the possibility arise.”

Prof. Gisbert Richard Germany

Under supervision of Prof. Gisbert Richard (left), Dr. Rahul Baile (right) trained in vitreoretinal surgery.

From Pakistan to University of Sydney, Westmead, Australia.

“Now I am better equipped to meet the needs of my career as pediatric ophthalmologist.”

Dr. Shabana Choudhry, Pakistan

Under supervision of Prof. Frank Martin, Dr. Shabana Choudhry trained in pediatric ophthalmology.
From Ecuador to New York Eye and Ear Infirmary, New York, United States.

“Every day has been a wonderful experience. Every detail is important and each new day is a new opportunity to learn.”

Dr. Andres Hernan Diaz Carrasco, Ecuador

Under supervision of Prof. Robert Ritch (right), Dr. Diaz Carrasco (left) trained in glaucoma.

From Armenia to Oculoplastic Training in Lublin, Poland.

“Most of the time, I was at the operation theater and assisted in oculoplastic surgery. I greatly appreciate the kind attitude of all the doctors.”

Dr. Sevada Hakobyan, Armenia

Under supervision of Prof. Stanislaw Abramski, Dr. Sevada Hakobyan trained in oculoplastic surgery.
### ICO Three-Stage International Fellowships

To extend the training for the most active ICO International Fellows, Dr. Gabel and the ICO Fellowship Committee introduced the ICO Three-Stage Sandwich Fellowship. This program is designed to strengthen the training of the Fellow and to maximize the training opportunities at the Fellow's home institution. For Stage 1, near the end of the standard three month international fellowship, the Preceptor and Fellow plan a Three-Stage Sandwich Fellowship and apply for support from the ICO International Fellowship Program ([www.icoph.org/fellow](http://www.icoph.org/fellow)). Stage 2 provides for the Fellow to return to the country of origin and plan a one—two week visit by the Preceptor to the Fellow’s training institution. This visit is expected to include didactic sessions, patient examinations, diagnostic procedures and surgery. Stage 3 provides for the Fellow to return to the Preceptor’s institution for three months of additional training and experience. On a limited basis for outstanding Fellows, this sandwich program is scheduled in 2010.

### ICO Helmerich Ophthalmology Subspecialty Fellowships

The ICO Helmerich Ophthalmology Subspecialty Fellowships were initiated in 2009 with long-term sponsorship by the Retina Research Foundation in cooperation with the ICO Foundation. The ICO Helmerich Fellowships provide 12 months of support for young ophthalmologists from developing countries who are recommended by the head of a teaching or public service institution and have a commitment to return to a position at a teaching institution or public service hospital in their home country following the fellowship.

Two ICO Helmerich Fellowships were awarded for training in 2010. Dr. Mohammed El-Hanan (Egypt) will obtain fellowship training at L.V. Prasad Eye Institute, Hyderabad, India and Dr. Siamak Zarei-Ghanavati (Iran) will receive training at the Jules Stein Eye Institute, University of California, Los Angeles, United States.

The ICO is accepting applications up to September 1, 2010 for the 2011 ICO Helmerich Ophthalmology Subspecialty Fellowships. The requirements and online application process are described at [www.icoph.org/pdf/helmerichfellowships.pdf](http://www.icoph.org/pdf/helmerichfellowships.pdf). Additional subspecialty fellowships one year in duration are offered at the ICO/Alcon Ophthalmology Training Center at Ljubljana, Slovenia.

### ICO International Fellowships: 2001–2009

<table>
<thead>
<tr>
<th>Country of Origin of Fellows</th>
<th>Country of Training of Fellows</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>Malawi</td>
</tr>
<tr>
<td>Argentina</td>
<td>Malaysia</td>
</tr>
<tr>
<td>Armenia</td>
<td>Maledivia</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>Mexico</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Moldova</td>
</tr>
<tr>
<td>Bosnia</td>
<td>Mongolia</td>
</tr>
<tr>
<td>Botswana</td>
<td>Myanmar</td>
</tr>
<tr>
<td>Brazil</td>
<td>Nepal</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>Nigeria</td>
</tr>
<tr>
<td>Burundi</td>
<td>Pakistan</td>
</tr>
<tr>
<td>Cameroon</td>
<td>Palestine</td>
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<tr>
<td>Chile</td>
<td>Paraguay</td>
</tr>
<tr>
<td>P.R. China</td>
<td>Peru</td>
</tr>
<tr>
<td>Colombia</td>
<td>Philippines</td>
</tr>
<tr>
<td>Congo-Kinshasa</td>
<td>Poland</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>Romania</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>Russia</td>
</tr>
<tr>
<td>Ecuador</td>
<td>Serbia</td>
</tr>
<tr>
<td>Egypt</td>
<td>Sri Lanka</td>
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<tr>
<td>Ethiopia</td>
<td>Sudan</td>
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<tr>
<td>Georgia</td>
<td>Syria</td>
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<tr>
<td>Ghana</td>
<td>Taiwan</td>
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<tr>
<td>Hungary</td>
<td>Tanzania</td>
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<tr>
<td>India</td>
<td>Thailand</td>
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<tr>
<td>Indonesia</td>
<td>Tunesia</td>
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<tr>
<td>Iran</td>
<td>Turkey</td>
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<tr>
<td>Iraq</td>
<td>Uganda</td>
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<tr>
<td>Israel</td>
<td>Ukraine</td>
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<tr>
<td>Jordan</td>
<td>Uzbekistan</td>
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<tr>
<td>Kazakhstan</td>
<td>Venezuela</td>
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<tr>
<td>Kenya</td>
<td>Vietnam</td>
</tr>
<tr>
<td>Kosovo</td>
<td>Yemen</td>
</tr>
<tr>
<td>Kyrgyzstan</td>
<td>Zambia</td>
</tr>
<tr>
<td>Libya</td>
<td>Zimbabwe</td>
</tr>
<tr>
<td>Lithuania</td>
<td></td>
</tr>
</tbody>
</table>
The ICO and ICOFoundation are working with philanthropic donors, foundations, public service organizations, corporations and government representatives to build ophthalmology training and eye care centers in Nigeria, China, Slovenia and Cameroon.

**Nigeria**

With a population of 146 million, Nigeria is Africa’s most populous nation. Nigeria also has one of the highest prevalence rates of blindness in the world, an estimated 2 million blind and 5 million with disease-related visual impairment or uncorrected refractive error. (Ref. 9. Ajayi BGK. Primary Eye Care in Western Nigeria. In Primary Health Care in Western Nigeria 1977–2007. Awojobi OA Editor, 2007, 119–121).

**Broadband Internet Education.** Following a 2006 survey of training and eye care in Nigeria by ICO leaders, the ICO and ICOFoundation funded equipment for broadband Internet access at six regional Resident-Specialist Training Centers in Nigeria; one center in each of Nigeria’s six administrative zones.

**University College Hospital, Ibadan.** Since 2006, University College Hospital, Ibadan, has undergone progressive development as a regional center for training of ophthalmologists and for population-based eye care. With support from Vision 2020, the Carl Zeiss Project, the Alcon Foundation, ICOFoundation and other sources, ophthalmologists have received specialized training in corneal-anterior segment disease, cataract surgery and retinal surgery.

**Network of Catholic Eye Hospitals, Ibadan District.** In 2008, Dr. B.G.K. Ajayi (Nigeria), Medical Director of Catholic Eye Hospitals, organized a Network of Catholic Eye Hospitals and Clinics in the Ibadan District to provide sustainable population-based eye care to nearly 4 million people in the suburbs and rural areas adjacent to Ibadan, regardless of ability to pay. Supported by the Catholic Church, a three year grant from the Lavelle Foundation for the Blind to the ICOFoundation, and donations from international and Nigerian sources, the Network is aided by consultants from Lions Aravind Institute of Community Ophthalmology (LAICO), India.

Documented in the LAICO 2009 Report, the four eye hospitals and clinics in the Network provide an increasing volume of primary and secondary eye care as well as community outreach. Through Agreement with University College Hospital, Ibadan, patients requiring specialized eye care are referred to subspecialists at University College Hospital and receive eye care regardless of the patient’s ability to pay.

**Network of Catholic Eye Hospitals, Nigeria**

St. Mary Catholic Eye Hospital, Ago-Iwoye
Akef El-Maghraby (AM) Eye Clinic, Eruwa
Atupa Eye Clinica, Our Lady Hospital, Iseyin
Eleta Eye Institute, Eleta, Ibadan
China

In 2007, the ICO and ICOFoundation combined with Eli Lilly & Company to establish the Peking University Eli Lilly Diabetic Eye Disease Center. With formal approval by Peking University, direction by Dr. Zhizhong Ma (China), Executive Vice President of Peking University Eye Center, leadership by Dr. Mark Tso (United States and China), Honorary Director of Peking University Eye Center, and ongoing consultation by Lions Aravind Institute of Community Ophthalmology (LAICO), India, the Diabetic Eye Disease Center is implementing a strategic plan that encompasses:

- Distribution of diabetes and eye health educational materials
- Creating awareness of the diabetic eye disease program
- Community eye care outreach in urban and rural areas
- Tertiary eye care services at Peking University Eye Center
- Academic training programs for doctors and health care workers

Peking University Eye Center and Network of Eye Hospitals. Implementing the strategic plan, Peking University Eye Center conducted urban outreach and rural outreach through a broad network of health care systems and eye hospitals in the provinces of Gansu, Henan, Jilin, Shandong, Yunnan and Inner Mongolia. In 2007–2009 assessment, LAICO Consultants reported distribution of more than 100,000 educational pamphlets, screening of over 32,000 people in 200 rural screening camps, screening of more than 21,000 urban diabetics and performing over 3,000 laser procedures for diabetic retinopathy. This urban and rural program is designed to provide sustainable and population-based eye care.

Slovenia

Ophthalmologists fully trained in subspecialties such as glaucoma, retinal disease and pediatric ophthalmology are needed in developing countries. Full qualifications in these and other ophthalmic subspecialties require fellowship training of one year or longer duration in a carefully structured program at an advanced ophthalmology center.

Recognizing the need for subspecialty training in upwardly mobile developing nations, the Alcon Foundation awarded a grant to the ICOFoundation for an initial ICO/Alcon Ophthalmology Training Center.

University Eye Hospital, Ljubljana, Slovenia. Following a competitive review of applications by an international committee, the ICO/Alcon Ophthalmology Training Center was established under leadership of Dr. Marko Hawlina and Dr. Brigita Drnovšek-Olup at University Eye Hospital in Ljubljana.

Dr. Hawlina, elected President of the European Board of Ophthalmology, stated that “we would like to host young specialists from teaching hospitals in Eastern Europe who plan to practice in a public teaching hospital.” In 2010, the first two Subspecialty Fellows are scheduled to commence training.
**Cameroon**

Sub-Saharan Africa has the world’s highest regional burden of visual impairment and blindness. Within this large region, Central Africa represents an area in particular need of eye care services. Cameroon, at the heart of Central Africa, is a Central African nation with a maritime border on the Atlantic Ocean, a population of nearly 20,000,000 and an elected democratic government. With French and English as official languages, the country is primarily French-speaking and at the core of Francophone Africa. The United Nations Human Development Index, which ranks nations by combining life expectancy, educational attainment and income, places Cameroon 153 among 182 nations worldwide (Ref 10 [http://hdr.undp.org/en/statistics](http://hdr.undp.org/en/statistics))

To evaluate the opportunity for developing an advanced ophthalmology subspecialty training and eye care center in Cameroon, Dr. Bruce Spivey (United States), ICO President; Dr. Akef El-Maghraby (Egypt), ICO Vice President; Dr. Jean-Jacques De Laey (Belgium), ICO Secretary-General; Dr. Soliman Aref (Egypt), Al Noor-Magrabi Foundation Executive Director; Dr. Daniel Etya’ale (Cameroon and Switzerland), ICO Trustee; and Dr. Bradley Straatsma (United States), ICOFOundation President Emeritus, traveled to Yaoundé, Cameroon (the nation’s capital) in December 2009. In a succession of meetings, Cameroon’s Prime Minister and government officials expressed full support for an international initiative to build an advanced ophthalmology center—the first in the country—at Yaoundé.

The Yaoundé University Rector, Medical School Dean and ophthalmology staff confirmed enthusiastic endorsement of an advanced ophthalmology training and eye care center.

After assessing the great need and the opportunity to improve eye care throughout Central Africa, the ICO representatives were unanimous in support of an advanced ophthalmology subspecialty training and patient care center at Yaoundé, Cameroon.
The Durban Declaration, which followed the first Congress on Uncorrected Refractive Error in March 2007, recognized that 153 million people worldwide have severe visual impairment, not including presbyopia, due to uncorrected refractive error. Recognized by the World Health Association and endorsed by the ICO, this Declaration emphasized the need to prioritize countries in greatest need and especially school children.

**School Eye Health Programme.** The ICO Task Force on Uncorrected Refractive Error led by Dr. Muhammad Babar Qureshi (Pakistan) developed the School Eye Health Programme (SEHP) to meet the eye health and refractive needs of school age children (age 5 –15 years) in regions of Pakistan and Nigeria. The SEHP is designed to carry out school screening for children, teachers and the siblings of children with significant refractive error. Children with refractive error will receive spectacles dispensed at the location of screening, treatment for minor eye disease on site and referral for major eye disease to the nearest District/State eye unit. Additional SEHP components are eye health and general health education, research to assess the program’s benefits and advocacy to encourage long-term sustainability by schools and governments.

In 2010, 2011 and 2012, the SEHP plans activities in specific regions of Pakistan and Nigeria with ambitious targets of eye health screening and refractive service for 1,000,000 school children, 10,000 teachers and 10,000 siblings in addition to dispensing of 100,000 spectacles. In a formative stage at this time, ability of the SHEP to achieve objectives depends on support by Light For The World (Austria), CBM, the ICOFoundation and other philanthropic and public service entities.
New medical knowledge is derived from thousands of sources worldwide and technology advances continuously. Thus, assimilation of knowledge and technology into best medical practice is a continuing challenge.

The ICO Eye and Vision Care Guidelines are adapted continuously to define what constitutes appropriate eye care and to promote a universal high standard of quality. Dr. Richard Abbott (United States) is Chair of a multinational committee of internationally recognized experts responsible for development of clinical guidelines. The committee 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 professional organizations.

By a process of formulation, broad review on the Internet and refinement, the ICO has formed eye and vision care guidelines for management of 20 major ophthalmic entities. As a major advance, the ICO international clinical guideline for Ocular HIV/AIDS is now complete. All guidelines are available by open access on the Internet (www.icoph.org/pdf/icoclinicalguidelines. pdf).

Guidelines in China. During a series of meetings with leaders of the Chinese Ophthalmological Society in 2005–2008, the AAO Preferred Practice Patterns® and ICO Eye and Vision Care Guidelines were adapted by the Chinese Ophthalmological Society and distributed to the 20,000 ophthalmologists in China. In an important step, China’s Ministry of Health has endorsed these Clinical Practice Guidelines as the national standard for ophthalmic practice and training.

Throughout the world, Eye and Vision Care Clinical Practice Guidelines require regular review, online distribution in multiple languages and educational programs to increase awareness and daily use in clinical practice. The ICO Clinical Guidelines Committee is broadly engaged in development, review, distribution and promotion of eye and vision care guidelines.
In 2009, advocacy for preservation and restoration of vision advanced through actions by the World Health Assembly, increased public awareness of blindness prevention and programs of the ICO World Ophthalmology Roundtable on Leadership Development (WORLD).

**World Health Assembly.** On May 21, 2009, the World Health Assembly, governing body of the World Health Organization (WHO), endorsed the WHO Action Plan for the Prevention of Avoidable Blindness and Visual Impairment ([http://apps.who.int/gb/ebwha/pdf/index.html](http://apps.who.int/gb/ebwha/pdf/index.html)). The plan aims to expand efforts by member states to prevent blindness by development of comprehensive eye health programs at national and sub-national levels. Adoption of the Action Plan is a major accomplishment that will provide additional unprecedented support for joint and collaborative efforts to improve eye health internationally.

**Worldwide Visual Impairment.** Led by Dr. Serge Resnikoff (France), advocacy by the ICO complements the WHO actions by drawing public awareness to the extent and causes of visual impairment. Worldwide, 161 million people are severely visually impaired due to eye disease. An additional 153 million people have severe visual impairment due to uncorrected refractive error and a total of 45 million of these people are blind. Causes of disease-related blindness as a percentage of total blindness vary by region and country. Cataract, however, continues to be the leading disease responsible for worldwide visual impairment and blindness.

**World Ophthalmology Roundtable on Leadership Development (WORLD).** Initiated in 2007, ICO World Ophthalmology Roundtable on Leadership Development (WORLD) works to build present and future ophthalmology leaders by encouraging community, national and multi-national programs to enhance ophthalmology training, increase public support for eye care and promote national and regional ophthalmology societies.

WORLD meetings in 2008, sponsored by the ICO and the Middle East African Council of Ophthalmology (MEACO) encouraged ophthalmology leaders in Sub-Saharan Africa to take greater responsibility for the direction and management of group activities. Under leadership of Dr. Kunle Hassan (Nigeria), Sub-Saharan African leaders met in 2009 at Ibadan, Nigeria, for discussion of group actions to enhance ophthalmology training, build community programs and encourage governmental support of ophthalmology.

As a further activity, the WORLD Colloquium during the AAO meeting in San Francisco on October 24, 2009, brought leaders from countries throughout the world to a program on refocusing ophthalmic education and the increasing importance of ophthalmic subspecialties in the delivery of eye and vision care.

### Causes of Worldwide Blindness

<table>
<thead>
<tr>
<th>Causes of Blindness</th>
<th>Percentage of total blindness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cataract</td>
<td>47.8%</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>12.3%</td>
</tr>
<tr>
<td>Age-related</td>
<td></td>
</tr>
<tr>
<td>Macular Degeneration</td>
<td>8.7%</td>
</tr>
<tr>
<td>Corneal Opacities</td>
<td>5.1%</td>
</tr>
<tr>
<td>Diabetic Retinopathy</td>
<td>4.8%</td>
</tr>
<tr>
<td>Childhood Blindness</td>
<td>3.9%</td>
</tr>
<tr>
<td>Trachoma</td>
<td>3.9%</td>
</tr>
<tr>
<td>Onchocerciasis</td>
<td>0.8%</td>
</tr>
<tr>
<td>Other Causes</td>
<td>13.0%</td>
</tr>
</tbody>
</table>

### Global Estimate of Visual Impairment by WHO Region (Millions) 2002

<table>
<thead>
<tr>
<th>Region</th>
<th>Population</th>
<th># of Blind People</th>
<th>% of Total Blind</th>
<th># with Low Vision</th>
<th># with Visual Impairment</th>
</tr>
</thead>
<tbody>
<tr>
<td>African Region</td>
<td>672.2</td>
<td>6.8</td>
<td>18%</td>
<td>20</td>
<td>26.8</td>
</tr>
<tr>
<td>Region of the Americas</td>
<td>852.6</td>
<td>2.4</td>
<td>6%</td>
<td>13.1</td>
<td>15.5</td>
</tr>
<tr>
<td>Mediterranean Region</td>
<td>502.8</td>
<td>4</td>
<td>11%</td>
<td>12.4</td>
<td>16.5</td>
</tr>
<tr>
<td>European Region</td>
<td>877.9</td>
<td>2.7</td>
<td>7%</td>
<td>12.8</td>
<td>15.5</td>
</tr>
<tr>
<td>South-East Asia Region</td>
<td>1,590.80</td>
<td>11.6</td>
<td>32%</td>
<td>33.5</td>
<td>45.1</td>
</tr>
<tr>
<td>Western Pacific Region</td>
<td>1,717.50</td>
<td>9.3</td>
<td>25%</td>
<td>32.5</td>
<td>41.8</td>
</tr>
<tr>
<td>Total</td>
<td>6,213.90</td>
<td>36.9</td>
<td>100%</td>
<td>124.3</td>
<td>161.2</td>
</tr>
</tbody>
</table>

The ICO Research Committee, led by Dr. Alfred Sommer (United States), reassessed the Research Committee report entitled “A Research Agenda for Global Blindness Prevention.” This report and plan for applied vision research has been endorsed by the World Health Organization and is presented in its entirety on the Internet (www.icoph.org/research/agenda.html).

In 2009, the Research Committee produced a new tool to assist beginning ophthalmic researchers, “Clinical Research: A Primer for Ophthalmologists.” Written by Dr. Sommer, this primer provides rudimentary guidance regarding the essential components of clinical research and is available on the Internet at www.icoph.org/pdf/PrimerClinicalResearch.pdf. As a further aid to researchers, “Regulation and Ethical Considerations Related to Research, Particularly When Investigations Involve Human Subjects” by Dr. Nancy Kass (United States) is available at http://icoph.org/research/regselfics.html.

Alfred Sommer, M.D., M.H.S., Chair of the ICO Research Committee.

Applied Research in China. In 2007, the ICO and ICOFoundation commenced support for applied research with establishment of the Peking University Eli Lilly Diabetic Eye Disease Center at Peking University Eye Center, Beijing, China. The faculty of Peking University, ICOFoundation representatives and Lions Aravind Institute of Community Ophthalmology, India, consultants developed a strategic plan for awareness creation, community outreach, delivery of quality diabetic retinopathy services, formation of academic training programs and development of performance metrics to monitor programs.

Implementation in 2007–2009 addressed each of these strategies and included creation of educational materials (posters, pamphlets and media presentations); urban outreach to adult diabetics and rural outreach to adults through screening camps. Building on programmatic experience, the Peking University Eli Lilly Diabetic Eye Disease Center is working to reach a larger segment of the rural population of China by establishing a Network of Provincial Eye Hospitals and by developing a broad pattern of community referral.

The goal of applied research directed by the Peking University Eli Lilly Diabetic Eye Disease Center is to establish a model program for use to decrease avoidable visual impairment and blindness due to diabetic eye disease in the vast rural population of China.
Bruce E. Spivey, M.D., M.Ed., President
San Francisco, California, United States

Akif El-Maghraby, M.D., Vice President
Jeddah, Saudi Arabia

Jean-Jacques C. DeLaey, M.D., Ph.D., Secretary-General
Ghent, Belgium

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Veit-Peter Gabel, M.D., Germany
Balder P. Gloor, M.D., Switzerland
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Adekunle Olubola Hassan, M.D., Nigeria
H. Dunbar Hoskins, Jr., M.D., United States
Tero Kivelä, M.D., Finland
Volker Klauss, M.D., Germany
Dennis S. C. Lam, M.D., China
Gerhard K. Lang, M.D., Germany
Hilel Lewis, M.D., United States
Frank J. Martin, M.D., Australia

Akira Nakajima, M.D., Japan
Gottfried O. H. Naumann, M.D., Germany
David W. Parke II, M.D., United States
Jacob J. Péer, M.D., Israel
Muhammad Babar Qureshi, M.D., Pakistan
Serge Resnikoff, M.D., Ph.D., France
Robert Ritch, M.D., United States
José A. Roca, M.D., Peru
Stephen J. Ryan, M.D., United States
Alfred Sommer, M.D., M.H.S., United States
Bradley R. Straatsma, M.D., J.D., United States
David Taylor, M.D., D.S.C., United Kingdom
Mark O. M. Tso, M.D., D.Sc., United States
Gabriel van Rij, M.D., Ph.D., Netherlands
Abhay R. Vasavada, M.D., India
Peter G. Watson, M.B., United Kingdom
Zbigniew Zagorski, M.D., Poland
Jialiang Zhao, M.D., China
William Felch, Executive Director, United States

“The ICO is becoming the World Alliance for Sight.”
Bruce E. Spivey, M.D., President
The ICOFoundation extends grateful thanks to the corporations, organizations, foundations and individuals for donations in 2009. These gifts, grants and pledges permitted the ICOFoundation to fund International Council of Ophthalmology programs that preserve, improve and restore vision.

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ICO FOUNDATION

The International Council of Ophthalmology Foundation acts with the International Council of Ophthalmology to support programs for:

- Ophthalmic Education and Training
- Ophthalmic Knowledge Examinations
- Ophthalmology Fellowship Training
- Ophthalmology Training and Eye Care Centers
- Correction of Refractive Error
- Eye and Vision Care Guidelines
- Advocacy for Preservation of Vision
- Research in Ophthalmology and Vision

The generosity of these visionary entities and philanthropic individuals enabled the ICOFoundation to support new and continuing International Council of Ophthalmology programs that preserve, improve and restore vision for people throughout the world.

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The ICOFoundation invites contributions from individuals, foundations, organizations and corporations. Donors are viewed as partners in the noble effort to preserve, improve and restore human vision. Please send contributions and requests for additional information to:

2009

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“The fact that loss of sight is largely preventable should be instilled in the public mind. Only then shall we be worthy of our heritage of law and civilization.”

HELEN KELLER