A global network of surgeons

Annual Report 2015
Our **vision** is excellence in the surgical management of trauma and disorders of the musculoskeletal system.

Our **mission** is to foster and expand our network of health care professionals in education, research, development, and clinical investigation to **achieve more effective patient care** worldwide.
Dear colleagues and friends,

This has been a year of many positive developments for the AO and we would like to update you on some of the high points of 2015 for us.

One of the most important milestones of 2015 took place in June when the AO Foundation and its long-standing industrial partner DePuy Synthes signed a new five-year Cooperation Agreement—see pages 10 and 11 for more detail on the implications of this across the organization. The AO also decided this year to create a Corporate Social Responsibility initiative to ensure our organization is operating all aspects of its daily business in a manner that takes into account its impact on the environment, people and society, as well as delivering support to the most disadvantaged regions and people in the world; see pages 6 and 7 for more information about this initiative.

In today’s business environment transparency is critical and the AO has responded by creating an Ethics and Compliance Committee which is in the process of elaborating a code of conduct that will be applicable to all the members of its network. This work, which strengthens the AO both internally and externally, will continue to be expanded on in 2016.

Innovation continues to be a cornerstone for the future of the AO and is based on three pillars: the AO Strategy Fund, AO Invest (which invests in start-up companies) and the IP Research Incubator. These three initiatives are creating opportunities for the AO to improve education and research and enlarge the scope of the AO’s activities leading to better patient outcomes. The AO Strategy Fund, as the longest running of the three, concluded its final funding round in December 2015, the outcome of which is a broad portfolio of more than 20 exciting and innovative projects in five focus areas: education, knowledge sharing, outreach and the AO brand, patient care, and research. In preparation for the next ten years of activity, the AO will be taking a close look at its vision and mission, exploring whether in the future we will not only be a surgeon organization but also a key player in the rapidly changing health care environment which will broaden the scope for the role and activities of the AO.

Finally, we would like to express our thanks to our volunteer officers and faculty for their cooperation and enormous assistance and support in all activities; our employees for their committed work; our members for their interest; and our partners for their continued dedication.

Sincerely,

Suthorn Bavonratanavech  Rolf Jeker
President of the AO Foundation  CEO and Vice-Chairman AOFB
AO Foundation highlights of 2015

- The AO Alliance Foundation launches its operations
- Establishment of the AO Ethics and Compliance Committee

January

- The AO Foundation signs a Cooperation Agreement with DePuy Synthes

March

- The AO Foundation Board endorses the AO’s Corporate Social Responsibility Policy

April

- AOCD introduces a greater internal customer focus with its new Director, Dr Martin Schuler

June

- Founding of the Center for Excellence in Faculty Development by the AO Education Institute

September

- The AOTK System defines a road map for biomaterials in orthopedic trauma and reconstruction

October

- AOCD introduces a greater internal customer focus with its new Director, Dr Martin Schuler

December
What CSR means at the AO

In 2015 the AO decided to create a Corporate Social Responsibility (CSR) initiative to ensure that the organization is operating all aspects of its daily business in a manner that takes into consideration its impact in the areas of environment, people, and society. There are currently numerous CSR activities which the AO is involved in, ranging from supporting other foundations and local charities to funding carbon compensation projects and implementing energy saving measures in the AO headquarters in Davos, Switzerland. These topics are also explored in the AO Statistics on pages 8 and 9. The AO also places a priority on beneficial Human Resources for employees from gender equality in salaries to flexible working hours and study support.

AO Alliance Foundation

The AO Alliance Foundation (AOAF) is where the AO makes its greatest CSR contribution. Since 2015, the AO contributes annually to the AOAF to improve fracture care in low- and middle-income countries (LMIC). The AO Socio Economic Committee (AO SEC) was set up by the AO Foundation in 1999 to address the fact that trauma care in LMICs suffered in comparison with the developed countries. That baton has now been passed to AOAF, officially inaugurated in 2015 as a separate legal entity independent of the AO Foundation. As a first step the AOAF is consolidating and strengthening AO SEC programs, finding new opportunities to build up local fracture care capacity and setting up sustainable country initiatives to achieve high standards of nonoperative and operative fracture care, starting in seven low-income countries: four in Africa and three in Asia. Malawi is the first beneficiary of the AOAF’s country initiatives; the official launch was held in Blantyre on December 1, 2015. The AOAF is uniquely positioned to assist with and carry out a five-year capacity-building project aimed at strengthening fracture care and local capacity for neglected trauma patients in Malawi. The AOAF is also developing plans for improving fracture care education and infrastructure in Ethiopia to help make the trauma burden of fractures lighter. The AOAF also supports projects that AO surgeons are working on in the developing world (eg, Cameroon, Eritrea, Uganda, Peru, Salomon Islands, the Philippines and Nepal).

Carbon compensation

The next biggest CSR project for the AO concerns the environment. Since 2013, the AO Foundation has voluntarily offset parts of its carbon footprint in partnership with providers of carbon offsetting measures worldwide making certain events carbon neutral. This year the AO offset the AO Trustees Meeting’s carbon emissions and the flights for the AOTK System’s meetings through the financial support of clean cooking stoves and water filters in rural Kenya, saving lives and forests. In addition, the AO Foundation Board has agreed to fully compensate the carbon emissions for all flights taken by AO surgeons and staff in the course of their work from 2017–2019. This means that in the future the AO will be able to have an even greater environmental impact through its carbon compensation projects.

Supporting local charities

ARGO is a foundation with workshops and residential homes for adults with disabilities in the canton of Graubünden (Switzerland). AO’s headquarters are based in Davos, the second largest city in the canton and one of four ARGO locations. In ARGO’s workshops, products for industrial, commercial and private customers are produced and sold by local people with disabilities who are also cared for in their residential homes. As part of its local outreach, the AO makes an annual contribution to a special fund for needy people within ARGO’s organization partly in lieu of printing and mailing Christmas cards.
Annual Report 2015  |  AO Statistics

Energy efficiency at the AO Center
There has been a 32% reduction in electricity consumption in the AO Center in Davos (CH) since the energy saving initiatives began in 2007.

Energy consumption in kWh
- 2015: 833,096
- 2010: 706,866
- 2007: 542,631

Heating oil use
- 2007: 20,811 liters of oil
- 2010: 45,638 liters of oil
- There has been a 55.2% reduction in heating oil use since the energy saving initiatives began in 2007.

Climate protection and sustainable development
The carbon neutral AO Trustees Meeting 2015 offset 1,121 tons of carbon emissions (tCO2e) and the carbon neutral AOTK System’s meetings in 2015 offset 808 tCO2e (going a total of 1,929 tCO2e) through the financial support of clean cooking stoves and water filters in rural Kenya.

Talent management
Staff statistics (in %):

<table>
<thead>
<tr>
<th>Education</th>
<th>Gender</th>
<th>2010</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>PhD</td>
<td>Female</td>
<td>16</td>
<td>53.7</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>Male</td>
<td>27</td>
<td>46.3</td>
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<td>Apprenticeship</td>
<td></td>
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Nationalities of staff in Switzerland
Where they come from (in %):

- Australia: 0.3
- Austria: 0.7
- Brazil: 0.3
- Bulgaria: 0.3
- Canada: 0.7
- China: 0.7
- Croatia: 0.3
- Czech Republic: 0.5
- Finland: 1.0
- France: 1.0
- Germany: 16.7
- Greece: 0.3
- Hungary: 0.7
- India: 0.3
- Iran: 0.7
- Ireland: 1.0
- Italy: 3.4
- Mexico: 0.3
- The Netherlands: 1.0
- Norway: 0.3
- Poland: 0.4
- Portugal: 0.1
- Romania: 0.4
- Russia: 0.3
- South Africa: 0.3
- Spain: 2.4
- Sweden: 0.3
- Switzerland: 5.7
- United Kingdom: 5.1
- United States: 1.7
- United Arab Emirates: 0.1
- United States: 1.7

The impact in rural Kenya of the 1,929 tCO2e offset by the AO Foundation in 2015 is as follows:
- Number of people positively impacted: 1,301
- Number of trees saved: 5,443

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- Finland: 1.0
- France: 1.0
- Germany: 16.7
- Greece: 0.3
- Hungary: 0.7
- India: 0.3
- Iran: 0.7
- Ireland: 1.0
- Italy: 3.4
- Mexico: 0.3
- The Netherlands: 1.0
- Norway: 0.3
- Poland: 0.4
- Portugal: 0.1
- Romania: 0.4
- Russia: 0.3
- South Africa: 0.3
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From carbon to people

Educational events and participants
- by clinical division:
  - AO Trauma: 368
  - AO Spine: 183
  - AO CMF: 50
  - AO VET: 62
- by region:
  - Europe including South Africa: 260
  - Asia Pacific: 199
  - Latin America: 144
  - Middle East and Africa: 59
  - North America: 74
  - International: 5,402

Total educational events: 774
Total participants: 55,257

Place of work
- Davos: 65.8%
- Dubendorf: 25.6%
- USA: 2.5%
- Colombia: 1.3%
- Brazil: 1.6%

Years of service
- >20: 7.6%
- 10–20: 17.2%
- 5–10: 20.3%
- 3–5: 17.2%
- 1–3: 22.4%
- <1: 15.3%

Fellowships per clinical division
- AO Trauma: 246
- AO Spine: 184
- AO CMF: 58
- AO VET: 49

Total fellowships: 741

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On June 18, 2015, the AO Foundation signed a Cooperation Agreement in Chiang Mai (Thailand) with its main industrial partner, relating to AO’s educational and technical commission (TK) activities. This agreement is the continuation of a longstanding and successful relationship which dates back more than 50 years and one which has endured many changes in organizational setups, people, clinical needs, and regulatory and compliance requirements. The common objective of improving patient care—albeit with different motivating factors—has provided the glue to this cooperation which has made and continues to make a unique contribution to, and have an extraordinary impact on, patient care worldwide. This industrial partner is the only company that can logistically support the large number of educational events that the AO delivers globally: over 700 annually. No other organization comes close to matching the educational output and impact of the AO.

The culture and role of the AO, and the relationship with its industrial partners, can only be fully understood if one realizes that the AO is in fact the point of origin of the medical device industry dedicated to improving fracture care. It was the AO’s pioneers who looked to industry for the know-how and capacity to realize their innovative ideas and put them into practice.

At arm’s length and in a transparent, compliant way the Cooperation Agreement respects the AO’s offering to develop and disseminate the principles and techniques of operative fracture and deformity care, through education that adheres to the accredited standards for continuing medical education (CME) and continuing professional development (CPD) in order to directly benefit patients.

More than ever, the AO exercises full and single authority over its governance, content creation, and financial behavior. The AO guarantees the full independence of its surgeon community, from any commercial obligation or pressure, in delivering their voluntary contribution to support its mission. All AO curricula and scientific programs are planned and created by groups of volunteer clinicians without any industry involvement using best practice processes from CME research and literature.

AO’s relationship with third parties always explicitly states and contractually ensures that no surgeon member is ever bound to favor, or pressured into using, products from the industrial partners that the AO chooses to collaborate with. Members of the surgeon network render their voluntary, non-remunerated services and loyalty exclusively to the AO.

This new contract is much narrower in its scope than previous agreements and refers only to the areas of education and development of new technologies and surgically novel approaches and solutions through the TK System. This enlarges the AO’s potential field of activities and further partnerships in the area of TK under specific circumstances, and in particular in the area of innovation. Innovation will be achieved through planned research incubator activities, and investments in promising start-up companies that are preparing the next generation of treatments for musculoskeletal fractures, deformities, and diseases. The AO, through its substantive endowment, has the resources to do this on its own but in the interest of additional know-how and leverage and to expedite its mission, the AO will always be open to third-party cooperation.
AOVET—advancing the practice of veterinary surgery

The AOVET community grew by ten percent compared to 2014 and AOVET continued to successfully conduct global educational activities for its large community of veterinary surgeons. Strong focus was placed on expanding its educational offering into previously underserved regions in Asia Pacific and Latin America. AOVET also revisited its approach to global course organization and its partnership model with AO’s industrial partner, considering changes in the overall economic environment. This resulted in a restructuring of the AOVET support organization, which was approved by the AO Foundation Board.

In summer 2015, Carl Kirker-Head was elected Chair of the AOVET Clinical Division. Alessandro Piras was elected Chair of the AOVET Education Commission, and Matthew Allen took over as Chair of the AOVET Research and Development Commission.

Educational highlights

AOVET conducted 37 courses, reaching 2,034 participants. AOVET Latin America expanded into new countries, and organized shorter events, including seminars and workshops.

During the Trustees Meeting, the newly elected Chair, Carl Kirker-Head, assumed leadership of the AOVET Clinical Division from Jörg Auer, who guided AOVET in a leadership capacity over several decades. Kirker-Head is an orthopedic surgeon, equine sports medicine expert, and associate professor of large animal medicine at the Cummings School of Veterinary Medicine, Tufts University (US). At this meeting, Alessandro Piras also started his tenure as Education Commission Chair, and Matthew Allen took over as chairperson of the Research and Development Commission.

In September, the Education Commission met for a strategy retreat with members from the Education Institute. This resulted in the initiation of new small animal course curriculum and set the educational direction for AOVET.

In November, the newly-created Asia Pacific board met for the first time in South Korea, where a one-day Faculty Education Program (FEP) was conducted before concurrently held principles and advanced courses.

In December, the restructuring of the clinical division’s support organization and new course approach was approved by the AO Foundation Board. Leading these changes in 2016 will be AOVET’s Executive Director, Tobias Hüttl, MD.

As part of its worldwide Faculty Education Initiative, AOVET conducted short, pre-course FEP programs in Latin America and Asia Pacific. In the future, such programs will become a prerequisite for young faculty members and there is also an initiative to recruit young course chairs.

Community development

The AOVET community grew to nearly 900 members, a 10% increase on 2014. The Surgery Reference veterinary section expanded to include a Dog Midface module and the Horse Scapula model, substantially increasing the total amount of vet-related topics. The INSIGHTS Veterinary app—with over 10,000 downloads and nearly 4,500 active users—also continued its success, becoming the go-to destination for veterinary news that it aimed to be at its launch in 2013.

Research and Development

The new Chair of the AOVET Research and Development Commission, Matthew Allen, started work in the summer, by organizing his first meeting during the ACVS Symposium in Nashville (US).
AOCMF—providing excellence in craniomaxillofacial surgery

Milestones in 2015
AOCMF grew its member network to 2,500, an increase of almost 20% on 2014. This year, more than 100 educational events were held worldwide, reaching more than 5,100 participants. Increased focus was placed in regions with the biggest unmet needs, such as Asia Pacific. AOCMF launched its new Research Clinical Priority Program, focusing on “Anti-osteoclastic drugs and their impact on maxillofacial and orthopedic bone biology, disease, diagnosis, prevention, and treatment modalities (ARONJ).” The AOCMF Curriculum Development Group also finalized a new curriculum. The newly named AOCMF Course—Management of Facial Trauma, will replace the Principles Course in 2017.

Education
Under the leadership of Warren Schubert, who was reelected for a second term in summer 2015, AOCMF delivered 106 educational events to 5,133 participants, an increase of 5% on 2014. Focus was placed on reaching more surgeons in China and India, where AOCMF trained 989 participants in 18 courses, resulting in a participant increase of 17% on 2014.

In South Africa, a national AOCMF faculty meeting established a working group to expand the reach of AOCMF in the country by working together with CMF societies, the AOCMF International Board, and the AOCMF Education Team.

The Curriculum Development Education Taskforce continued its work on a new curriculum to replace the Principles Course in 2017. The new course template and name AOCMF Course—Management of Facial Trauma were approved by the AOCMF International Board in December 2015.

Research
Under the lead of Risto Kontio, Chair of Research and Development, AOCMF launched its new Clinical Priority Program (CPP) on “Anti-osteoclastic drugs and their impact on maxillofacial and orthopedic bone biology, disease, diagnosis, prevention, and treatment modalities (ARONJ).” The program includes a guide to research, open calls for proposals, projects with the AO Research Institute, and a scientific conference in 2016. In addition, a multicenter, randomized controlled trial on “double mandibular fractures” was established. The AOCMF global community was invited to participate, with twelve clinics selected as study sites. Lastly, a CMF-specific patient outcome tool (AOPOC), currently in the data validation phase, should result in a custom-made tool for surgeons.

Community development
The AOCMF International Board transitioned the Community Development Commission into a new Web Editorial Board, which assumes responsibility for all online communication across AOCMF. INSIGHTS CMF, a magazine-like iPad app, was also launched, bringing the latest news from the field to AO surgeons worldwide. Encouraged by the increase in educational events and a more tailored approach to membership communication, the AOCMF community grew to nearly 2,500, an increase of almost 20% on 2014.

Future outlook
Grow education in India, China, Eastern and Southeastern Europe
Implement new AOCMF Davos Course concept and the new AOCMF Course—Management of Facial Trauma curriculum, to replace the Principles Course in 2017
Focus on faculty development, emphasizing leading small group discussions, conduct the AOCMF International Retreat

The AOCMF European Faculty Retreat took place in Rome (IT). There were 72 European faculty members and guests at the one-and-a-half day event, which provided the opportunity to learn about the AO Foundation, and discuss AOCMF developments, the Cooperation Agreement, current projects, and what the future holds. One day was dedicated to the new curriculum and template for the Principles Course. Quality education and effective teaching methods, with special focus on small group discussions and short lectures, complemented the program. Regional retreats also took place in Latin America and Asia Pacific, where regional CMF boards were invited to discuss topics across clinical divisions. Demand for the AOCMF fellowship program increased in 2015 with 57 fellows assigned to 22 CMF host clinics around the world. During their fellowships they learned about the indications, planning techniques, and pitfalls of osteosynthesis across CMF specialties.

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AOSpine—the leading community for innovative education and spine care research

Create, disseminate, and exchange knowledge
AOSpine continued to invest in its academic credibility in 2015. This resulted in an increased Knowledge Forum research output, additional Global Spine Journal issues, and an enlarged participant base at the Global Spine Congress. To disseminate this knowledge, online material was further developed, laying the foundation for future blended learning modules. Social media supported the exchange of knowledge and built awareness of AOSpine’s educational offering.

Education
AOSpine strengthened its position as the leading global provider of spinal education, delivering over 190 educational events to more than 13,000 participants. AOSpine further developed its online educational offering within the areas of blended and self-directed learning. The AOSpine Mentorship Education scheme launched, pairing young, talented surgeons with the world’s most prominent spine surgeons. A new Faculty Education Program (FEP) was introduced, aligning faculty-level training across all clinical divisions.

Research
Clinical investigations are the main focus of AOSpine’s research. This is mainly implemented in the AOSpine Knowledge Forums (KFs), in the pathology areas of tumour, deformity, degenerative, and spinal cord injury. The KFs produced over 40 peer reviewed publications and 70 presentations in 2015.

In the area of preclinical research, the Spine Research Network (SRN), comprising 29 experts, advanced the field of intervertebral disc (IVD) regeneration and degeneration by publishing eight manuscripts and 20 presentations.

In order to attract young researchers, the next round of the AOSpine Mentorship-Research program was also launched by the new Research Commission Chair, Dr Shanmuganathan Rajasekaran. The program enables surgical teams in local hospitals all over the world to learn how to perform clinical research from experienced key opinion leaders.

Community development
Community development engaged the AOSpine member community by promoting education and research activities, and by fostering communication and the exchange of knowledge among the members and with the different regions. At the same time the three AOSpine newsletters, as well as Davos Courses and Global Spine Congress supplements were being published to provide up-to-date information on events, education and research. Strong focus was placed on social media in 2015. This included coverage of the Davos Courses via live chat on the @AOSpine Twitter channel. A survey was also conducted, with the aim of providing new and effective communication channels to the worldwide community.

Europe and Africa
AOSpine Europe (AOSEU) strengthened its position as the leading provider of spine-related education in the region, with nearly 800 surgeons participating in educational events across 14 European countries. Over 1,200 participants attended AOSpine’s national and regional congress symposia, and over 600 joined in the regional webcasts. AOSpine’s Chairperson Training Program prepared faculty to align the AOSpine Curriculum to all regional education events. In research, a multicenter study, sponsored by AOSEU, continued to recruit patients. In Africa, activities were expanded into Rwanda and Zimbabwe.
Middle East
AOSpine Middle East (AOSME) maintained its position as the leading spine community in the region. AOSME’s educational offering included ten AOSpine courses, three research courses, three faculty training workshops, one PEP, and seven congress symposia. The membership community grew by more than 25%, with the highest growth rate occurring in Egypt. For the first time, AOSME extended its educational offering to surgeons in Tunisia, where the Principles Course was fully subscribed. AOSpine and AOTrauma also collaborated for the first time to bring basic research skills to researchers through an Education in Research workshop.

Latin America
AOSpine Latin America (AOSLA) delivered 44 educational activities to 3,140 participants. These included anatomical specimen and online courses, as well as new events, including the Central American Symposium. In research, AOSLA boosted its number of publications, presentations, and investment efficiency. The inclusion of new training centers increased the number of AOSLA fellowships to 25. Elections appointed Asdrubal Falavigna as the new Regional Chairperson-Elect, and Jose Maria Jimenez as the new Research Officer. Several Country Officers were also elected. The Dominican Republic Council was also newly created.

Asia Pacific
AOSpine Asia Pacific (AOSAP) delivered 53 courses to more than 3,200 participants. AOSAP’s triennial flagship course, Interactive Courses 2015, was held in Hong Kong in September, offering one Masters level course and four Advanced level courses covering cervical, deformity, degeneration, and trauma. The course attracted over 160 participants and was led by 55 faculty. The AOSpine Advanced Symposium, held in Suzhou (CN), and attracting 600 surgeons, was a collaboration between AOSAP and the 12th National Academic Congress of Chinese Association of Spine and Spinal Cord (CASSC2015). To fulfill educational needs, AOSAP sent 57 fellows to AOSpine Centers all over the world. 22 research projects were also awarded.

North America
AOSpine North America (AOSNA) offered nine courses in 2015, which were a resounding success. These included webinars, and an Oral Board Review Course. Results of AOSNA’s research efforts to push forward the frontiers of the knowledge base in spine care were seen in presentations at the major spine meetings around the world, and in the NEUROSURGERY Focus issue on the topic of “The Aging Spine.” AOSNA’s annual, peer-reviewed Young Investigators Awards and major clinical projects underway offered multiple possibilities for members to become actively engaged in what’s next in clinical spine research.
Strengthening from within
While actively supporting the mission of the AO Foundation, 2015 was also a year of consolidation. In order to have fully transparent governance structures, AOTrauma implemented terms of reference for its international and regional boards, and global commissions. Further details will be defined in 2016 for the various regional committees and national organizations. In parallel, a new initiative will launch in 2016 to consolidate the strategic plan for AOTrauma. This combination of robust governance and relevant strategy will enable AOTrauma to remain at the forefront of high-quality education and research in the field of musculoskeletal injuries.

This year was successful in regard to education for trauma and orthopedic surgeons, musculoskeletal researchers, and operating room personnel (ORP). On a global basis, AOTrauma delivered 388 educational events, including courses, seminars, symposiums and webinars. To ensure the highest quality standards, all educational activities involved a careful selection of faculty, and were monitored by diligent appraisal methods. New processes were defined, and mid-term strategic planning tools as well as key performance indicator evaluations were implemented. Such management routines will not only improve the transparency of future decision making processes but also enable AOTrauma to increase its overall efficiency.

AOTrauma’s educational efforts culminated in December with the 55th edition of the Davos Courses. Building on the positive experiences of 2014, AOTrauma’s Davos Courses 2015 were rated as among the best ever by 920 participants and 295 faculty. More than ever, the Davos Courses represents a unique blend of best-in-class teaching and exceptional networking possibilities with a global like-minded community.

AOTrauma—the largest global trauma network

Future outlook

AOTrauma Strategy 2017-2019
development process—consolidation and engagement plan

Streamlining and efficiency improvements for all educational activities, including strategic mid-term activity planning, key performance indicators, quality controls, community networking for the AOTrauma Fellowship program, the AOTrauma Faculty Development pathway, and opportunities for young teachers

Rollout of the next Clinical Priority Project (CPP) Patient Outcome

At the cutting edge of medical education
Formulated on competency-based curricula, AOTrauma courses continue to be the gold standard in postgraduate medical education. Three new curricula were completed in 2015: foot and ankle subspecialty; pediatrics; and pelvic and acetabular education, which premiered at the Davos Courses. All are evidence-based and address the specific needs of practicing trauma surgeons. The AOTrauma webinar series attracted global attention. There were 15 global webinars and webcasts held, in addition to an increasing number of regional webinars, covering topics including posterior wall injuries, early infection, and secondary fracture prevention, with total participant numbers of approximately 250 to 300 surgeons per event.

The fourth edition of Fractures of the Pelvis and Acetabulum was published. This classic textbook by editors Marvin Tile, David Helfet, Jim Kellam, and Mark Vrahas covers acute fracture management, definitive treatment, and extensive analysis of fracture outcomes. The second edition of the very popular Manual of Fracture Management—Hand launched at the Davos Courses, with editors Jesse Jupiter, Fiesky Nuñez, and Renato Fricker in attendance.

The AOTrauma Education Commission welcomed two new members: Carlos Mario Olarte (CO), representing Latin America, and Vajara Phiphobmongkol (TH), representing Asia Pacific. During the Davos Courses, a new Current Concepts course, “Tips from the Masters,” set a benchmark, enabling participants to go on a mini-fellowship with the most renowned experts in orthopedic trauma surgery.

Enhancing the AOTrauma community and enriching the AO spirit
The AOTrauma community was nurtured through an active presence at many global events and by numerous national Community Development events. To strengthen the communities within AOTrauma, emphasis was placed on supporting the local AOTrauma Country Chapters with 36 projects. In cooperation with AOTrauma Education, a new Fellows Community Initiative was launched to develop and strengthen a community of
AOTrauma membership grew from 8,828 to 9,233; this 10.8% increase was mainly due to growth in Europe and the Middle East. At the end of 2015, AOTrauma had more than 80,000 registered users and 8,000 Facebook likes.

AOTrauma adjusted its membership scheme during the year, adding a second membership package. In parallel, member benefits were extended. Members now have access to their own channel on the INSIGHTS Orthopedics app, which provides full access to licensed Ovid journals and an improved member directory. The growing AOTrauma Case Library also launched as a new member benefit.

The Annual Member Satisfaction Survey revealed that AOTrauma members value being part of the largest global network of orthopedic trauma specialists, as well as having access to regularly enhanced educational and training resources, and faculty teaching opportunities.

Bone infection research—innovation within a highly relevant clinical area
AOTrauma recognizes bone infection as one of the most serious and distressing complications of orthopedic procedures. While the incidence of infection is relatively low in elective procedures, the costs and risks of the revision processes are high. For traumatic procedures, the risk of infection increases dramatically. The AOTrauma Research Commission initiated the Bone Infection Clinical Priority Program (CPP) in 2012. A research consortium, led by Stephen Kates (US), in conjunction with multiple international clinicians and research partners, is producing promising results.

Several research education workshops in grant writing took place in 2015, requiring participants to submit a draft study proposal prior to attending the two-day course. Based on the positive feedback and evaluations, these courses will be replicated in other regions.

Launch of point-of-care education for AOTrauma ORP
After a successful trial of the new Clinical Training Modules (CTM) for Operating Room Personnel (ORP) in 2014, the first two modules were launched in 2015. The CTMs are competency-based and divided into eight different sessions, enabling learners to acquire competencies for their profession that focus on their needs and are adapted to local policies and habits. The final two modules are in production, and Spanish as well as Chinese translations have been started. Two faculty training sessions also took place to train ORP faculty in the ORP Curriculum and its implementation.

Increased visibility in all areas
AOTrauma Asia Pacific (AOTAP) continued to grow; a total of 98 courses in 17 countries were conducted, educating over 10,000 surgeons and ORPs. AOTrauma was present at more regional orthopedic meetings in 2015, with seminars organized at the AOA, COA, SOA, JSFC, POA, HKO, TOA, APOA, CAOS, and SICOT. The well-attended events received very positive assessments. Faculty development remained an important pillar in AOTAP activities, with 13 regional faculty fellows trained as regional faculty at a Basic Principles Course. Manyi Wang (CN) started his tenure as the new AOTAP Board Chairperson, together with new officers in 13 Country Councils. Vajara Phiphobmongkol (TH) was elected as the new AOTAP Education Committee Chairperson.
Improving operational efficiency and transparency
With 3,500 members, AOTrauma Europe (AOTEU) is AOTrauma’s largest region. In 2015, AOTEU held 148 educational events, including the well-received Masters Courses series and the first AOTEU Research Grant Writing course. Based on the 2014 concept, a road show format was offered again in 2015, enabling regions with limited access to education to participate at a high level though affordable Masters Course. Faculty development was supported by a new transparent allocation principle driven by individual country needs. The AOTEU Country General Assembly in Vienna (AT) provided numerous interactive workshops, where regional leaders could exchange experiences and cultivate the AO spirit. Peter Brink (NL) was re-elected as AOTEU Education Committee Chairperson, and Steven Velkes (IL) joined the AOTEU Board as Chairperson of the Community Development Committee.

Multimedia coverage to overcome economic challenges
AOTrauma Latin America (AOTLA) provided 77 educational activities to over 4,800 participants. The seventh AOLAT Retreat in Panama brought together more than 75 participants while ten AOTLA days were delivered during various national congresses. Faculty Education Program and Chairperson Training Program courses increased the number of faculty contributing to AOTLA’s courses. Six AOTLA webinars also attracted global attention. AOTLA retained its membership numbers (1,300), despite challenging economic situations in many parts of the region. The evolution of the regional website, www.aotla.org, helped to maintain an active community and recorded a significant increase in visitors. There were 22 AOTrauma Fellowships offered to Brazilian members, in addition to 45 traditional fellowships in the region.

Successful regional cooperation
AOTrauma Middle East (AOTME) organized 35 educational activities. The Regional Courses in Dubai (AE), which included two AOTrauma Masters level courses and an AOSpine and AOTrauma Principles Course—Education in Research, brought together nearly 90 faculty members and more than 260 participants from 19 countries. For the first time, two clinical divisions (AOTrauma and AOSpine) collaborated in the organization of an event, with further endorsement from AOCMF. Focusing on the tools required to plan, design, and structure a research paper, participants from different areas of expertise discussed and exchanged ideas on ethics committees, financial support, how to search for information, the interpretation of data, and writing a scientific article.

Making good things even better
AOTrauma North America (AOTNA) held over 25 training courses and seminars for nearly 1,700 residents, fellows, and practicing surgeons. AOTNA also provided twelve free educational webinars to around 673 participants. Four FEPs were held for over 60 faculty members. In all, over 550 AOTNA faculty members dedicated time to teaching activities. AOTNA supported numerous clinical solution research projects and continued to lead the way with its Advanced Clinical Education Program, providing grants and educational offerings to 27 North American trauma fellowship programs. AOTNA exhibited at the 31st Annual Orthopedic Trauma Association meeting, spreading AOTrauma’s vision and mission. At the occasion, AOTNA hosted its fourth Annual AOTrauma North America Fellows Reception, followed by the AOTrauma North America Members Reception, where more than 300 members and faculty celebrated the AO spirit.
Milestones in 2015
Under the guidance of the AONeuro Steering Group, 17 educational events with more than 600 participants were successfully conducted in 2015 by AONeuro. Additionally, the AO Foundation Board approved the AONeuro initiative for a further three years, to ensure the continuation of the very successful partnership.

Strategic focus
The AONeuro initiative of the AO Foundation currently focuses on two major global educational efforts: to improve the outcomes of cranial brain trauma and cranial skull base surgery. In 2015, AONeuro nearly doubled its educational activities from the year before with 17 events; over 600 participants attended courses, seminars, a lecture, and webinar, which were led by close to 200 faculty members. The majority of events received an “excellent” rating. Alongside lectures and case discussions, the newly designed Synbone dry bones, including a brain and dura, opened up a whole new range of practical training possibilities.

Global educational activities
AONeuro held its first course in the Middle East at the Cleveland Clinic in Abu Dhabi (AE), with 50 surgeons in attendance. In North America, the AONeuro Visiting Professor Program was successfully launched; one neurotrauma course targeted residents, while a second course provided advanced practitioners with an unparalleled learning experience in continuous medical education. In Latin America, three educational activities were attended by over 100 participants in Colombia, and in Chile and Mexico for the first time. In Asia Pacific, six neurotrauma and skull base events were conducted, with new events held in Japan, Thailand, and India, in addition to the one ongoing in China. In Europe, activities extended into Germany, Austria, and the United Kingdom. Forty participants from 20 countries attended the flagship course in Davos.

Clinical guidance
The AONeuro Steering Group oversees the initiative’s activities and sets its strategic guidelines. Chaired by AO Foundation Past President Paul Manson, the group consists of regional neurosurgical experts Shelly Timmons, Ross Bullock, Christian Matula, Peter Hutchinson, Andres Rubiano, and Wai Poon, with Geoff Manley as a scientific/educational advisor.

AONeuro—taking neurological care to the next level
AORecon—taking arthroplasty and joint preservation to the next level

AORecon had an eventful 2015. More than double the number of educational events that were initially planned took place. The AO Education Institute and AORecon joined forces to finalize the “AORecon Principles of Total Hip and Knee Arthroplasty” course template. And based on the success and high interest expressed by key opinion leaders all over the world, the AO Foundation Board approved the AORecon initiative for a further three years with AORecon mandated to define ways to integrate into the AO Foundation.

Education
In its second year, AORecon strived to further improve patient care in arthroplasty and joint preservation by holding nine educational events. Strong ties to renowned orthopedic and arthroplasty societies enabled many of AORecon’s 2015 educational events to take place at academic meetings around the world including the ELCCR (CO), EFORT (CZ) as well as at selected society meetings in Asia—COA, CAOS, and ASIA. These symposia were often leveraged as opportunities by surgeons and societies to approach AORecon for future collaboration in their countries.

Curriculum development
The AORecon Curriculum was an historic milestone for the AO Foundation as it enabled AO to offer a Principles Course in arthroplasty for the first time; three courses subsequently took place in 2015 following the course template based on this curriculum. Initial feedback from participants and faculty was reassuring. Data collected from these courses is currently being analyzed and will be fed back into the further development of the curriculum.
Serving clinical needs—a smart surgical drill
Honoring AO’s mission to improve patient care, Markus Windolf, Leader of the Concept Development Focus Area within the AO Research Institute (ARI), followed an invitation by Prof Michael Schütz (Director of Trauma, Princess Alexandra Hospital, Brisbane) in 2014 to come to Brisbane (AU) for a year and spend extended time with him in the operating room. The goal was to calibrate the engineering mind towards the surgical reality and its daily challenges. The rare moments when Schütz struggled with a situation transpired to be the most valuable ones, displaying the clear opportunities for improvement.

A constantly reoccurring problem was the measurement of screw length. In our highly technologized world, conventional depth gauges sometimes appear as a relic of ancient time, but more importantly they just don’t work properly. Screws that are too short compromise the stability of fixation, and screws that are too long may lead to severe soft-tissue irritations or worse. Replacement and disposal of falsely inserted bone screws is therefore a constant issue.

Surgeon and engineer came up with a concept of attaching a distance sensor unit to a conventional power drill constantly analyzing the drilling characteristics and thereby delivering useful information such as actual drill depth and cortex exit points corresponding with the required screw length.

Based on the underlying idea, a first prototype was then developed in the ARI to prove the principle. The device incorporated a laser sensor and was showcased during the Davos Courses 2015. More than 100 participants tested the prototype and provided constructive and encouraging feedback. The next version is currently under development with the final goal of translating this idea into clinical practice.

Future outlook
- Focusing resources on creating new surgical solutions such as for smart surgery
- Bringing preclinical research to the highest accreditation, retaining AAALAC and acquiring GLP certification
- Maintaining academic excellence with the tissue engineering and regenerative medicine program

AO Research Institute (ARI)

Successful completion of the FP7 project NPMimetic: Biomimetic nano-fiber based nucleus pulposus regeneration for the treatment of degenerative disc disease
Low back pain has, for several decades, been the worldwide leading cause of lost work time and years lived with disability. The main underlying problem is attributed to degenerative changes in the intervertebral disc (IVD). Current clinical practice faces a big gap between conservative treatment and clinically successful but highly invasive spinal fusion. NPMimetic, with ARI scientists Mauro Alini, Sibylle Grad and Zhen Li, aimed to provide novel concepts for mild and severe disc degeneration, achieving biological regeneration and mechanical reconstruction, respectively. Such treatments will be minimally invasive and restore intervertebral disc functionality rather than eradicating its primary function.

For the biological regeneration, innovative fibrinogen-hyaluronic acid biopolymer conjugates were developed that promoted nucleus pulposus (NP) cell growth and matrix formation and were successfully used for covalent coupling of growth factors, such as heterodimeric BMP2/7. For the mechanical reconstruction, an NP replacement strategy was pursued consisting of a strongly swelling and load-resistant polyurethane implant. In organ culture models the implant effectively restored IVD integrity and showed favorable integration. Preclinical studies performed by consortium partners complemented the treatment evaluations. Overall, the collaboration of the ten partner institutions generated important new technologies and treatment modalities to bridge the gap between conservative and well-established but highly invasive surgical therapies.
From idea to proof of efficacy in preclinical testing

Many of the research groups within ARI have collaborated over the past few years to bring a new delivery system from the idea phase right through to a comprehensive preclinical evaluation. Stemming from ARI’s polymer group, headed by David Eglin, an injectable and degradable hydrogel has been produced, characterized and patented. The gel has now been tested in partnership with the preclinical testing team (headed by Stephan Zeiter) to monitor the tissue response in a rabbit osteochondral defect model (pictured). Furthermore, the hydrogel has been functionalized with antibiotics in collaboration with the musculoskeletal Infection team (headed by Fintan Moriarty). Antibacterial efficacy has been proven to be 100% effective in a rabbit model of infection after osteosynthesis (pictured).

Most recently, the biomechanical services program (headed by Prof Boyko Guerguiev) has become involved, proving that the application of this material does not impair fracture healing or biomechanical strength. This comprehensive series of preclinical evaluation studies should provide a solid basis for further development of drug delivery-based solutions in the musculoskeletal field.

Future outlook

Development of smart implants for fracture repair

Address focus areas of periprosthetic fractures, infection and neurosurgery

Provide innovative clinical solutions with evidence-based development

The new contract with DPS in 2015 reconfirmed the exceptional importance of the AOTK System’s role at the heart of the AO’s value chain. With its dedication to innovation, commitment to evidence gathering and rigid quality assurance processes, it provides an exceptional value to the organization’s mission. Not only will the collaboration with the AO’s industrial partner be intensified and the volume of projects significantly increased, the AOTK will also have the opportunity to work with other external partners under defined circumstances.

New AOTK Neuro

To address the increasing importance of neurosurgery in the AO, the TK Executive Board and the AOFB approved the historic step to form a fourth Technical Commission consisting of experts in cranial neurosurgery and dedicated to developing clinical solutions with established AOTK workflows. The group, chaired by Australian Stephen Lewis will be inaugurated in 2016.

Innovations

The newly approved Trochanteric Fixation Nail Advanced incorporates all of the established benefits, with additional improvements to specific design aspects. Reported issues have now been addressed and solved by implant and instrument design changes (eg, with its radius of curvature to improve the anatomical fit and to help avoid impinging the anterior cortex).

The new Variable Angle Locking Calcaneal Plates are indicated for traditional plate fixation of calcaneal fractures. By providing variable angle locking, the screws can be angulated in the most optimal positions to get better purchase in the smaller fragments or to avoid joint penetration where the screws have to be placed underneath joint surfaces. The additional Compression/Distraction Device set is a very versatile instrument to perfectly reduce fractures or to align bones in the optimal position for fusion.
Responding to the growing importance of navigation in spine surgery, the new Kick 2D system provides better visualization, increased accuracy, and reduced radiation with a low-cost 2D solution, providing surgical navigation for instruments used in pedicle preparation and implant placement for open or MIS thoracolumbar procedures. The new Facet Wedge spinal system was developed to build upon the advantages of Tissue Fixation System (TFS) and to improve features such as ease of implant introduction and even further decrease the risk of neurological deficits. It is intended as an aid to fusion through immobilization of the facet joints, with or without bone graft, at single or multiple levels of the lumbar sacral joint. It can be inserted minimal invasively either to augment other fusion techniques or as a stand-alone device for cases without segmental instability with the potential advantages of direct visualization.

In CMF the Matrix Wave is a novel bone-borne maxillomandibular fixation (MMF) system that combines the strength and rigidity of arch bars with the speed and simplicity of intermaxillary fixation IMF screws. It consists of a wave-shaped plate which is attached to the mandible and maxilla with self-drilling locking screws. The new Matrix Neuro Preformed Mesh is an anatomically contoured rigid mesh implant for the reconstruction of medium to large cranial defects. It is intended for use in fixation of the cranial bones in procedures such as reconstruction, fracture repair, craniotomies and osteotomies.

**AOTK System Innovations magazine and website**

Along with the publication of a new issue of the popular AOTK System’s Innovations magazine, the AOTK also launched a completely revised and improved online catalog of approved solutions and techniques. This page, located in the “Innovations” section of the AO web portal with the entire list of approved products sorted by either clinical area or technological range, was created to provide up-to-date design, navigation and user experience.

**Building on the AOTK’s reputation as an innovation driver, it is the first area within the AO web portal which was built with responsive design technology, allowing an equally clear display on both large computer screens as well as on small tablets and smart phones.**

**Expert Symposia**

With up to forty expert surgeons attending from nine different countries at each event, two highly productive Expert Symposia were held in Innsbruck (AT) and Lima (PE). The participants presented their most challenging clinical cases in key areas. A clear consensus showed that the AO tension band wiring of patella fractures is no longer the golden standard and that fixation with cannulated screws and tension band as well as plate fixation moves into focus as more appropriate fixation techniques. The session about periprosthetic fracture management showed that there are several clinical situations which are barely addressed with current hardware solutions. Consequently the AOTK has formed a new task force which will develop solutions for this.

In an additional large-scale strategy workshop with 49 international attendees, including surgeons from all clinical specialties, strategies were defined in the focus areas of infection, osteoporosis and tissue regeneration. The meeting revealed the pressing need for smart implants to detect infection, monitor and stimulate fracture healing, measure tissue viability and detect contamination. A new task force dedicated to developing relevant solutions was formed and will commence its work in 2016.

**Carbon neutral**

The AO offset the carbon emissions for all flights taken for AOTK Systems Meetings in 2015, see page 7 for more information on the AO’s carbon offsetting project.
AO Clinical Investigation and Documentation (AOCID)

A reconstituted, customer-focused institute
The year 2015 was a transitional one, a period which ended with AOCID reinvigorated by new directions and inputs. AOCID and its portfolio of services have grown in the past few years. A comprehensive audit by PricewaterhouseCoopers in the early part of 2015 guided AOCID to make some process optimizations and to renew its focus on customers, particularly internal.

The composition of the AOCID Advisory Committee (AOCID-AC) also changed. AOCID-AC, which sets the clinical research directions for AOCID and provides expert advice, worked hard on AOCID’s future strategy and the resulting business plan. The current members, Chairman Dr Stephen Kates and Prof Frank Kandziora, were also able to welcome Switzerland-based Prof Andreas Platz to the group.

AOCID’s transformation was further boosted by the appointment of Dr Martin Schuler as AOCID Director in December. He succeeds Andreas Fäh who served as Interim Director for one year.

What does AOCID do?
AOCID is an institute for clinical excellence. It is the provider of choice for clinical research for the AO Community, other investigators and selected external industrial partners. All research activities conform to international clinical research guidelines and laws to ensure high-quality services. Developing clinical registries as well as offering unique educational possibilities in clinical research are also important elements of AOCID’s portfolio. Increased transparency and a clear focus on meeting customers’ needs are important culture changes of the newly reconstituted institute.

AOCID has completed a total of 102 different studies over the past 15 years. These studies have involved more than 9,500 patients in 40 countries. AOCID is currently managing over 70 clinical trials, focused registries and special projects in different phases of completion.

The results of AOCID-conducted studies appeared in almost 40 peer-reviewed publications, and over 90 presentations of AOCID-run projects were made at scientific congresses in 2015.

Success stories
Correct site selection in clinical trials is essential. The AO experimented with issuing open calls to participate in AO studies. The MobiChina, Geriatric Fracture Center and Double Mandibular Fracture studies all used this process. The result is an expanded network of highly committed and competent clinics around the world engaged in AO clinical research. The open call method is likely to grow in use.

The AO Patient Outcome Center (AOPOC) is now in the hands of a US-based spin-off company. The commercialization of this project is another step forward for the AO Foundation. AOCID’s involvement in AOPOC is now confined to ad hoc scientific support. AOCID will continue to seek out new challenges in health economics.

An interactive eLearning module on evidence-based medicine was launched and received a Gold Award at the 2015 eHealthcare Leadership Awards. It can be viewed at bit.ly/21cqPDg.

At the AO Davos Courses, a record number of course participants (more than 600) took the AOCID survey on health economics.
Staying at the forefront of Faculty Development…
The AO currently counts more than 8,300 faculty members that dedicate their scarce free time to running approximately 700 educational events per year; those numbers make it clear that our faculty is a key success factor for the AO. This makes it all the more important for the AO to continue to be attractive to passionate teachers. A recent survey showed that training is among the main incentives for AO faculty, with more than 800 attending 51 Faculty Development Program (FDP) events in 2015. Surgeons who like to teach look for opportunities to enhance their teaching skills and with its practical and competency-based FDP, the AO has become known for its expertise in the field.

…by creating a new center for excellence
In recent years the demand for FDP has significantly increased and, as a consequence, in 2015 the AO Education Institute (AOEI) augmented its workforce and created the Center for Excellence in Faculty Development. Under the lead of Miriam Uhlmann, the new department aims to align the FDP among all clinical divisions to offer centralized curriculum development, planning, organization and evaluation for all faculty development events. In addition to creating a central support center, the Faculty Development Alignment Project will enable the AO to save resources and foster cooperation and synergies among the clinical divisions.

Expanding the award-winning eLearning hub for residents
In addition to enhancing its faculty development offerings, the AOEI also continued to expand its very successful interactive eLearning hub for orthopedic trauma residents, AOTrauma StaRt (Surgical Training and Assessment for Residents). Since its launch in 2014, AOTrauma StaRt has attracted more than 4,700 learners worldwide and achieved international recognition by claiming a range of prestigious medical education awards. After winning four awards in 2014, the eLearning tool won two more Outstanding Achievement Awards from the Interactive Media Awards in 2015.

The content of AOTrauma StaRt is continuously being expanded by international teams of experienced faculty and reviewed by the executive editors: Kodi Kojima (BR), Fred Baumgaertel (DE), Wa’el Taha (SA), and James Krieg (US). All authors are committed to providing content that is current and evidence-based.

Presenting research and innovation
The AOEI delivered eight presentations at Europe’s foremost medical education conference AMEE in Glasgow (UK). Volunteer motivation, the value of faculty feedback, and the ways online learning is changing medical education were among the topics addressed by the AO researchers. In addition, educational research in the field of faculty development was showcased at the Asia Pacific Medical Education Conference (APMEC) in Singapore, and at the 40th Annual Conference of the Alliance for Continuing Education in the Health Professions (ACEHP) in the US by faculty members and staff of the AO Education Institute.

Offering resources for a global audience
In order to make its educational resources available to a global audience, in 2015 the AOEI publishing department released a multitude of translations of their most successful books. Among others the books Concepts and Cases in Nonunion Treatment, Minimally Invasive Spine Surgery, and Musculoskeletal Outcomes Measures and Instruments are now available in Chinese, while the two volumes of the Principles of Fracture Management book can now be read in Greek as well.

Future outlook
Implement a global standard in assessment and evaluation data collection and reporting
Redesign the Educational Leadership Program in Faculty Development throughout all AO Clinical Divisions
New user interface design for AO Surgery Reference
Increased activities in mainly “Education” and of the “AOTK System” and also a complex operational structure led to a 4% increase in Operating Expenses compared to the previous year. A slight increase in Operating Income by 1% partly compensated for it. Therefore the Operating Result has deteriorated by CHF 3 million compared to 2014 and amounted to CHF -23 million.

The Financial Result of CHF -7 million was negative for the first time since 2008, reflecting the turbulent financial markets in 2015. The Net Result dropped to a value of CHF -30 million, decreasing the Foundation’s Equity to CHF 1,193 million by the end of 2015.

Operating Income includes the income from the Collaboration & Support Agreement with DePuy Synthes of CHF 64.6 million (at the same level as previous year) and third party income amounting to CHF 13.9 million (+5% versus previous year).

Operating Expenses, excluding “Unforeseen”, “AO Strategy Fund”, “AO Alliance” and the new initiatives “AONeuro” and “AORecon”, amounted to CHF 96 million (-1% versus previous year). Activities related to “Education” and “R&D”, with 46% and 26% respectively, represented the biggest stake. Education spending increased by 1% versus the previous year to CHF 44.6 million, as a continuation to further strengthen one of our core competencies. Further optimization measures and continued strict cost control led to considerably lower overhead spending: “Community Development” (-2%), “General & Administrative” (-5%), and “Global & Regional Boards” (-4%).

The AO Foundation Contribution at CHF 88 million, remained below budget (-10%) but above the previous year (+4%). The variance versus budget is driven by lower expenses mainly in “R&D” activities and “AO Strategy Fund”. The decrease of the Foundation’s reserves amounted to CHF 30.3 million resulting mainly from the Financial Result of CHF -6.9 million. Total Operating Expenses at CHF 101.9 million, was below budget but higher than in the previous year due to increased activities in “AOTK System”, “Education” and some special focus areas.

Employees
The number of permanent staff decreased by 13.1 FTEs versus 2014 to 237.9 full-time equivalents (FTEs). Mainly as a result of FTE shift from permanent to non-permanent due to change of definition in HR Policy.
Finance

The Financial Result of CHF -6.9 million reflects an actual return of -0.2% on the underlying financial assets amounting to CHF 1,172 million by the end of 2015.

After several years of strong performance, the year 2015 ended slightly negatively. The main negative performance contributors were the asset classes “Equities Emerging Markets” and “Commodities”. “Swiss Equities” and “Swiss Real Estate” were the best performing assets. The cumulative performance of the portfolio since January 2008 amounted to 36.7% by December 31, 2015.

Equity evolution 2008-2015
Due to the turbulent financial markets in 2015, the Foundation’s Equity decreased to a value of CHF 1,193 million by December 2015.

Evolution 2010-2014

The total number of courses increased to 774, reflecting a growth of 2% versus 2014. Overall, the number of participants increased by 22% as well as the number of participant days that increased by 4%.

Evolution 2008-2015

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of Courses</th>
<th>Number of Participants</th>
<th>Number of Participant Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia Pacific</td>
<td>199  26%  -8%</td>
<td>18,157 14%  28%</td>
<td>32,119 29% 13%</td>
</tr>
<tr>
<td>Europe (incl. South Africa)</td>
<td>260  34% 3%</td>
<td>12,230 23% 2%</td>
<td>20,642 27% -4%</td>
</tr>
<tr>
<td>Latin America</td>
<td>144  19%  1%</td>
<td>8,973 12% -4%</td>
<td>11,573 11% -10%</td>
</tr>
<tr>
<td>Middle East and Africa</td>
<td>59  8% 24%</td>
<td>2,820 5% -19%</td>
<td>6,606 6% -31%</td>
</tr>
<tr>
<td>North America</td>
<td>74  10% 54%</td>
<td>5,402 16% 79%</td>
<td>12,348 11% 28%</td>
</tr>
<tr>
<td>International</td>
<td>38  5% 124%</td>
<td>5,705 11% 287%</td>
<td>11,117 10% 60%</td>
</tr>
<tr>
<td>Total</td>
<td>774 100% 3%</td>
<td>53,287 100% 22%</td>
<td>109,208 100% 4%</td>
</tr>
</tbody>
</table>
**AO governance level**

A permanent separation between governing and executive bodies guarantees optimum organizational governance.

**AO executive level**

The executive functions of the AO Foundation are directed by the CEO and Vice-Chair of the AO Foundation Board and are divided into three layers (institutes, clinical divisions, and support units) that work closely with each other.
Governing bodies of the AO Foundation

Assembly of Trustees
The Assembly of Trustees is the “AO parliament,” consisting of 187 leading surgeons from around the world comprising: 75 Elected Trustees; 71 Ex-Officio Trustees; 28 Honorary Trustees; 4 Honorary and Founding Trustees; 9 Past-Presidents. The Assembly of Trustees is responsible for the approval of the scientific and clinical mission of the AO Foundation, important elections and the modification of the AO Foundation Charter and Bylaws. They transmit AO information to national institutions and other AO surgeons and bring feedback regarding the specific needs of their Region.

Since each Trustee serves for a limited number of years, constant rejuvenation of the Board is guaranteed.

AO Foundation Board—AOFB
The AO Foundation Board is the governing body of the AO Foundation. It is responsible for its strategies, target setting and supervision of all executing bodies of the AO Foundation.

The AO Executive Management—AOEM
The AO Executive Management reports directly to the AO Foundation Board. It includes the CEO and line managers responsible for operational management within their respective areas.

Front row:
—Rolf Jeker (CEO and Vice-Chair AOFB)
—Suthorn Bavonratanavech (President and Chair AOFB)
—Jaime Quijano (Past-President)

Back row:
—Jean Pierre Cabassu (veterinary expertise)
—Christoph Lindenmeyer (finance expertise)
—Keita Ito (research & development expertise)
—Ulf Claesson (investment/industry expertise)
—Neal Futsun (cranio-maxillofacial expertise)
—Niklas Reiner (President-Elect)
—Florian Gebhard (trauma expertise)
—Luiz Vialle ( spine expertise)

From left to right:
—Tobias Hutt (AOCMF and AOVET)
—R Geoff Richards (AO Research Institute)
—Class Albers (AOTK System)
—Matthias Dunkel (AOtrauma)
—Jay Raas (AO spine)
—Rolf Jeker (CEO and Vice-Chair AOFB)
—Uns Rastoch (AO Education Institute)
—Irene Eigenmann Timmings (CEO and CFO)
—Martin Schuler (AO Clinical Investigation and Documentation)