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## SETAC'S MISSION

The Society of Environmental Toxicology and Chemistry (SETAC) is a not-for-profit, global professional organization comprised of some 5,800 individual members and institutions dedicated to the study, analysis and solution of environmental problems, the management and regulation of natural resources, research and development, and environmental education.

Since 1979, the Society has provided a forum where scientists, managers and other professionals exchange information and ideas. SETAC's founding principles are:

- Multidisciplinary approaches to solving environmental problems
- Tripartite balance among academia, business and government
- Science-based objectivity

SETAC is implementing this mission worldwide. Building on a strong track record in North America and Europe, membership growth and education in developing countries are important priorities for the Society's global program of activities, in recognition of the pressing environmental challenges confronting Asia/Pacific, Latin America and Africa.

## TRIPARTITE IN SCIENCE, DIALOGUE AND GOVERNANCE

In addition to its globally respected science, SETAC's tripartite character is the Society's principal calling card, providing a quality forum on environmental issues for communication and interaction among professionals on a multisector, interdisciplinary and multinational basis. This tripartite aspect—relying on a fundamental balance of scientific participation among government, academia and business—adds unique strengths in governance and in objectivity to SETAC's meetings, workshops, advisory groups and publications at a time when such objectivity is so critical to sound policy and societal decision—making.

## PRESIDENT'S MESSAGE

BY PAUL VAN DEN BRINK

With our meetings at Milan in Italy, Boston in the United States, Buea in Cameroon, Cumana in Venezuela and Darwin in Australia, we successfully strengthened SETAC as a worldwide organization. The latter three meetings were further landmarks, helping the Society establish a stronger foundation outside its traditional membership centers of North America and Europe. This confirms our success as we strive to meet the expressed ambition of SETAC to be a worldwide not-for-profit professional society.

The year started in auspicious fashion with the members of the Australasian Society for Ecotoxicology (ASE) joining the SETAC family as the SETAC-Australasia Chapter (SETAC AU) of SETAC Asia/Pacific. The EnviroTox2011meeting held in April 2011 in Darwin, Australia, continued the tradition of joint meetings of the Royal Australian Chemistry Institute (RACI) and ASE, and was the inaugural meeting of SETAC AU. The meeting was attended by more than 200 local, regional and international delegates and confirmed the strong development of the field of environmental toxicology and chemistry in Australasia. We are looking forward to developing this field even further in the Asia/ Pacific region with the help of, among others, our new colleagues from SETAC AU.

The SETAC Africa Branch meeting, held in May and June 2011 in Buea, Cameroon, together with the Cameroon Society for Toxicological Sciences (CSTS), was a notable success. It was inspiring to see the enthusiasm and dedication of the local organizers and conference participants as they worked to spread the word on environmental toxicology and chemistry, something that is greatly needed in that fast-developing continent. The meeting was particularly important for SETAC because it marked a milestone toward welcoming Africa as a full geographic unit within the Society. We were also pleased to connect with the Africa Education Initiative (NEF) and are exploring ways in which SETAC and NEF can partner to support science and professional networking in support of capacity building in Africa. With these steps, SETAC will become truly



global with geographic units in North America, Europe, Latin America, Asia/Pacific and Africa.

SETAC had a similarly outstanding year in Latin America. The 10th Congress of SETAC Latin America (SLA) and the 1st Congress of Venezuelan Ecotoxicology were held jointly in Cumaná, Venezuela, in October 2011, reinforcing the Society's presence in that region, including Central America and the Caribbean. New regional chapters took shape in Argentina from the ground up and in Brazil from the well-established Brazilian Society of Ecotoxicology. These important developments reinforced significant membership gains in Latin America and will ensure a dynamic program of activities in 2012.

I also want to highlight the dedication of the members of the SETAC World Council and geographic unit Councils and Boards. Their collaboration on a tripartite basis, with scientists from governments, academia and business working together, has made SETAC a premier venue for science and discussion on the environment. And, of course, we deeply appreciate the work and commitment of our nearly 6,000 SETAC members around the world. They have contributed in so many ways to the continued success and direction of SETAC in the pursuit of cutting-edge research and collaboration where the need for science and understanding is great.

SETAC looks ahead to 2012 with great anticipation as we hold our 6th World Congress in Berlin in May. There, we will celebrate our Society's scientific contributions to a better environment, examine sustainability from a transdiscipline perspective and add to our vibrant network of members and organizational partners. Please read on for more on SETAC and its efforts to achieve Environmental Quality through Science®.

## 2011 SETAC WORLD COUNCIL

## PAUL VAN DEN BRINK

**PRESIDENT** 

ALTERRA AND WAGENINGEN UNIVERSITY, NETHERLANDS

## TIMOTHY CANFIELD

VICE PRESIDENT

FEDERAL GOVERNMENT, USA

## FRED HEIMBACH

TREASURER

RIFCON GMBH, GERMANY

## JANE P. STAVELEY

IMMEDIATE PAST-PRESIDENT

EXPONENT, USA

PETER CAMPBELL, SYNGENTA, UNITED KINGDOM

PEDRO CARRIQUIRIBORDE, UNIVERSIDAD NACIONAL DE LA PLATA, ARGENTINA

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WILLIAM L. GOODFELLOW, EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., USA

LÚCIA GUILHERMINO, UNIVERSIDADE DO PORTO, PORTUGAL

PATRICK GUINEY, S.C. JOHNSON & SON, INC., USA

JUSSI V.K. KUKKONEN, UNIVERSITY OF EASTERN FINLAND

KENNETH LEUNG, UNIVERSITY OF HONG KONG

MIGUEL MORA, TEXAS A&M UNIVERSITY, USA

DAVID PHILLIPS, COVANCE LABORATORIES LTD., UNITED KINGDOM

BARNETT RATTNER, FEDERAL GOVERNMENT, USA

RICHARD P. SCROGGINS, ENVIRONMENT CANADA

MICHAEL C. MOZUR, GLOBAL EXECUTIVE DIRECTOR, EX OFFICIO

## GLOBAL ENGAGEMENT

The Society's global activities in 2011 were highlighted by a particularly strong program of major meetings and world-level scientific workshops. This program's key pillars are science, working with international organizations and programs, and training and capacity building. SETAC continues actively to seek to establish partnerships with leading nongovernmental organizations (NGOs) working worldwide, regionally and locally. Steady growth in membership around the world underpinned this successful year, particularly in Asia/Pacific and Latin America. The Society's membership now approaches 6,000, up by 25% from 5 years ago.

## **SCIENCE**

SETAC's global science program is based on four major activity areas, led by well-attended annual meetings in key regions of the world and our superb journals *Environmental Toxicology and Chemistry* (ET&C) and *Integrated Environmental Assessment and Management* (IEAM), which continue to attract leading science and research articles. SETAC's global and regional workshops and symposia were impressive in their reach and relevance, addressing the problems of the Gulf of Mexico oil spill, biocides, mixture toxicity, global climate change, pollinators and pesticides, and life cycle database parameters. SETAC's circle of active Advisory Groups continued to grow as members seek to stay on the cutting edge across disciplines and explore the ever-present potential represented by interdisciplinary collaboration. Members explored the theme of sustainability during the year, with discussions a feature of every meeting. The eventual goal: an interdisciplinary SETAC approach to the issue's scientific and practical dimensions.





## COLLABORATION

The Society's decade-long collaboration with the United Nations Environment Programme in the UNEP-SETAC Life Cycle Initiative demonstrates the Society's broad impact in a discipline where the economy and environment meet. The Initiative launched preparations for its Phase 3 with the objective of mainstreaming life cycle thinking around the world. The SETAC contribution is scientific, and the Society is working to promote the Initiative's further success in its program of projects and activities, including LCA tools development. SETAC members within the Initiative are also contributing to global work on the water footprint in the context of the International Organization for Standardization (ISO).

SETAC has been a notably active stakeholder in the Strategic Approach to International Chemicals Management (SAICM) since 2007 with contributions in science and capacity building. As SAICM prepares for the third session of the International Conference on Chemicals Management (ICCM3) in Nairobi in 2012, SETAC offered scientific comments on potential emerging issues related to pharmaceuticals and endocrine disruptors. SETAC also complemented its membership in the UNEP

Global Mercury Partnership by gaining observer status in the ongoing global negotiations on a mercury convention, which will conclude with a new convention in 2013. As a member of the Stockholm Convention, SETAC representatives also attended the Convention's Fifth Meeting of the Conference of Parties (COP-5) in April, presenting science relevant to global climate change as well as to persistent organic pollutants (POPs).

## **TRAINING**

SETAC's training and capacity-building efforts encompass outstanding programs of short courses at geographic and regional meetings, successful distance learning through well-attended webinars and major international events related to SAICM.

## **DIALOGUE**

SETAC's active dialogue with many international partners will enhance the Society's impact where it is needed most, particularly in developing countries and in areas where multidisciplinary approaches—keyed to human health, biodiversity and sustainability—are increasingly needed.

## SETAC'S PROGRAM

GLOBAL SCIENCE PROGRAM

Who We Are



SETAC GOVERNANCE

WORLD COUNCIL and

**COMMITTEES** 

and in

## INTERNATIONAL ACTIVITIES

## 2002

UNEP/SETAC LIFE CYCLE

## 2007

STRATEGIC APPROACH TO INTERNATIONAL CHEMICALS MANAGEMENT (SAICM)

INTERNATIONAL
ORGANIZATION FOR
STANDARDIZATION

## 2010

UNEP GLOBAL MERCURY PARTNERSHIP

STOCKHOLM CONVENTION

## 2011

GLOBAL NEGOTIATIONS ON MERCURY

GLOBAL ENVIRONMENT FUND REPORT

## **SETAC MEMBERS**

**GLOBAL PARTNERS AND AFFILIATES** 

GEOGRAPHIC UNITS
SUSTAINING AND AFFILIATE
MEMBERS AND PARTNERS

## **TRAINING**

**SHORT COURSES** 

**SUMMER SCHOOLS** 

SAICM CAPACITY BUILDING

**eLEARNING** 

## **SCIENCE**



Darwin, Australia Buea, Cameroon Milan, Italy Cumaná, Venezuela Boston, MA, USA

Regional, Focused Topics\*

Pensacola, FL, USA Mérida, Mexico 6th SETAC World Congress, Berlin, Germany Long Beach, CA, USA Kumamoto, Japan **Regional, Focused Topics\*** 

Regional, Focused

Recife, Brazil

Buenos Aires, Argentina

Lusake, Zambia Glasgow, Scotland Nashville, TN, USA Latin America, TBD

Regional, Focused Topics\*

Hanoi, Vietnam



Pesticide Risk for Pollinators
LCI Database Guidance
Global Climate Change
20 Questions: Pharmaceuticals and Personal
Care Products
3rd SETAC Europe Special Science
Symposium (SESSS) Mixture Toxicity
4th SESSS Biocides
Budapest 17th LCA Case Studies

2nd Young Environmental Scientists

Passive Sampling Devices
PASI Air Quality: Megacities–Agroecosystems
MODELINK
5th SESSS Ecosystem Services
6th SESSS Endocrine Disruptor Testing
Latin American Aquatic Risk Assessment of
Pesticides (LATARAP)
Building for Better Decisions: MultiScale Integration for Human Health and

Hydraulic Fracturing
7th SESSS Nanoparticles
8th SESSS Marine Ecotoxicology
SETAC North America Life Cycle Impact
Assessment





JOURNALS: IEAM produces 4 podcasts and identifies podcast series editor; ET&C inaugurates Focus features; Special series: Radiation/Radionuclides, Tissue Residue Approach, Traits-based ERA

**BOOKS:** Environmental Life Cycle Costing: A Code of Practice, Global Guidance Principles for Life Cycle Assessment Databases

**NEWSLETTER:** Readership usage jumps.

JOURNALS: ET&C welcomes new editorin-chief, publishes special issue and firstever videocast on Nanomaterials in the
Environment plus series from Latin America
symposia; IEAM delivers series on Lab-Field
Bioaccumulation, CA Sediment Quality
Objectives, Bayesian Belief Networks
BOOKS: Linking Non-Target Arthropods

Testing and Risk Assessment with Protection
Goals (ESCORT 3)

JOURNALS: IEAM proposes special series on Marine Antifouling, Cosco Busan Oil Spill BOOKS: Pesticide Risk for Pollinators

2013



Amphibians & Reptiles Ecotoxicology | Animal Alternatives | Aquatic Macrophyte Ecotoxicology

Environmental Date, with SOT Copenhagen 18th LCA Case Studies

Nanotechnology | Pharmaceuticals | Sediments | Ecological Risk Assessment | Global Soils | Sustainability

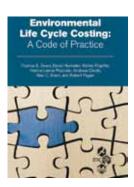
## **PUBLICATIONS**

## **BOOKS**

SETAC distributed nearly 1,500 books worldwide in 2011, including "Environmental Life Cycle Costing: A Code of Practice." In collaboration with the United Nations Environment Programme, SETAC published "Global Guidance Principles for Life Cycle Assessment Databases: A Basis for Greener Processes and Products" (Shonan Guidance Principles). Since 1987, SETAC Press has published 120 books, many of which have helped to establish environmental standards around the world.

Under the guidance of volunteer Coordinating Editor of SETAC Books Larry Kapustka and Publications Advisory Committee Chair Gary Ankley, the Society will produce its first e-book in 2012, ESCORT 3: Linking Non-target Arthropod Testing and Risk Assessment with Protection Goals.





## **GLOBE NEWSLETTER**

Since the SETAC Globe went electronic-only in 2010, Editor-in-Chief John Toll has created a widely read monthly vehicle for articles and announcements from SETAC events, regional chapters and branches, and student councils, as well as officers, directors and scientific affairs managers. Some highlights of 2011 included the

- meeting report on "SETAC Latin America, Cumaná, Venezuela: ¡Muy buen éxito!";
- "Update on SETAC's Global Mercury Partnership with the United Nations Environment Programme" from Michael Bank, Harvard Medical School, and Davide Vignati, Italian Water Research Institute; and
- "SETAC Trees for Africa Initiative" from SETAC Europe Council member Audrey Barletta-Bergan about support for tree-planting in Cameroon with SETAC Africa Vice President Patricia Bi Asanga Fai.

## **JOURNALS**

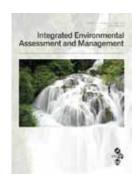
In collaboration with Wiley-Blackwell, SETAC publishes two respected scientific journals, covering the gamut of environmental science from academic research to applied decision-making. Both journals are available online in developing countries through the Research4Life program, and each volume's first issue is openly accessible throughout the year, to both members and nonmembers alike. Both journals have embraced the electronic communications age with virtual issues that collect related articles across years of data, on such subjects as oil spills and radiation, and with podcasts and videocasts that offer transcription and even translation.

## Integrated Environmental Assessment and Management (IEAM)

SETAC's quarterly journal, designed to bridge the gap between science, decision making, regulatory policy and environmental management, in its 7th year under founding Editor-in-Chief Richard Wenning, published 700+ pages, including

- two special series on the tissue residue approach to toxicity assessment and trait-based ecological risk assessment and
- an invited collection on the "Challenges Posed by Radiation and Radionuclide Releases to the Environment," in response to the Fukushima Daiichi incident and describing current knowledge on the environmental fate and aquatic, wildlife and agricultural hazards associated with radioactive substances.

Coinciding with the first issue of 2011, IEAM released its first podcast, featuring James Meador, who subsequently agreed to become the journal's first podcast editor. Three additional podcasts were released under his leadership in 2011, with marketing coordinated with Wiley-Blackwell through press releases and social networks such as Newswire and Twitter channels for BioSciNews, EarthWise and LifeSciNews.



## Environmental Toxicology and Chemistry (ET&C)

With a steadily increasing impact factor (currently 3.026), ET&C produced 344 articles in 2011, including four in its new Focus series, intended to sharpen understanding of current and emerging topics of interest to the scientific community. For the first time in its 30-year history, the journal

- welcomed a new editor-in-chief, G. Allen Burton, and moved its editorial office from Rice University to the University of Michigan, and
- underwent a redesign of its cover to feature content-related photos and graphics.

Retiring Editor-in-Chief Herb Ward's tenure was recognized with

fondness and fanfare at the SETAC North America meeting in Boston, capping a memorable career in which ET&C grew from a fledgling quarterly volume of 350 pages to an esteemed monthly publication with an annual volume of nearly 3,000 pages. Two special series were published in 2011: "Predictive Ecotoxicology" and "Omics and Environmental Science," with a highly anticipated one on nanotechnology coming in 2012.



## ADVISORY GROUPS

SETAC's Advisory Groups (AGs) provide forums in 22 topical areas across environmental and transdisciplinary science. In 2011, the groups' interests and activities ranged from traditional—sponsorship of sessions at annual meetings—to emerging—such as organizing debates and preparing commentary on aspects of the intersection of science, policy and regulations. Collaborative activities among advisory groups and between the advisory groups and the SETAC Science Committees was a point of emphasis in 2011, with notable successes in creating joint commentary to SAICM on environmentally persistent pharmaceuticals and endocrine-disrupting chemicals. Several AGs expanded their scope and activities, one transitioned from a geographic unit level to the global level, and a new AG was formed to recognize increased interest in sustainability among SETAC scientists.

## SETAC GLOBAL ADVISORY GROUPS

### Animal Alternatives in Environmental Science

The Animal Alternatives AG seeks to identify when and where alternatives to animal tests are appropriate and how they can be used in environmental risk assessment. During the 2011 annual meetings of SETAC Europe in May (Milano, Italy) and SETAC North America (Boston, USA) in November, the AG promoted broad information-sharing, including with the Organisation for Economic Co-operation and Development (OECD) Fish Testing Framework and the Health and Environmental Sciences Institute (HESI) Animal Alternatives in Environmental Risk Assessment Committee. Co-Chairs: Scott Belanger, The Procter & Gamble Company; Michelle Embry, ILSI Health & Environmental Sciences Institute.

## Aquatic Macrophyte Ecotoxicology

Championing the development of approaches to the assessment of the effects of chemicals on aquatic macrophytes and their use in ecological risk assessment, the objectives of the Aquatic Macrophyte Ecotoxicology Advisory Group are to provide scientific advice, practical guidance, and communication and education across European Union, Canadian, and US directives and regulations. Co-Chairs: Gertie Arts, Alterra Wageningen University and Research Centre; Mark Hanson, University of Manitoba.

## **Bioaccumulation Science**

Key accomplishments of the Bioaccumulation Science Advisory Group in 2011 included publication in IEAM of papers from a joint workshop on Lab-Field Bioaccumulation, co-organizing a workshop on "Moving

bioaccumulation assessments to the next level: progress made and challenges ahead" and a special symposium at the SETAC North America annual meeting in Boston. The group seeks to increase the use of sound science in decision-making through the use of models and in vitro and in vivo data for bench-scale, site-specific and regional bioaccumulation assessments. Co-Chairs: Henriette Selck, Roskilde University; Mark Lampi, ExxonMobil Biomedical Sciences Inc.

## **Ecological Risk Assessment**

In 2011 the SETAC World Council approved this Advisory Group to operate at a global level, to advance the science, practice and application of ecological risk assessment and to encourage harmonization of assessment methods. The AG successfully organized a workshop to explore how expected changes in climate will influence the scientific underpinnings of environmental toxicology and chemistry. Co-Chairs: Mary Sorensen, ENVIRON International Corporation; Mark Johnson, U.S. Army Center for Health Promotion and Preventive Medicine.

## **Ecosystem Services**

The group has been working as a focal point within SETAC for information and ideas on the ecosystem services concept in risk assessment and management, environmental regulation, and valuation. In 2011, the AG hosted sessions in Milan and Boston and coordinated a special issue of Science of the Total Environment on biodiversity, ecosystem functions and services in environmental risk assessment. Co-Chairs: Joke Van Wensem, TCB; Lorraine Maltby, University of Sheffield; Tim Canfield, U.S. Federal Government.

## **Ecotoxicology of Amphibians and Reptiles**

Like several other AGs, this group sponsored successful platform sessions at the 2011 SETAC North America annual meeting, focusing on the combined impact of pollutants and their trickle up—down effects on amphibians and reptiles in the context of other stressors that exist for these species, and at SETAC Europe's meeting, to define the current bottlenecks in amphibians and reptiles ecotoxicology research and risk assessment as well as the impact of pesticides and agricultural land use

on the viability of amphibians and reptiles. Co-Chairs: Christine Bishop, Environment Canada; Jamie Bacon, Bermuda Zoological Society.

## **Exposure Modeling**

The Exposure Modeling AG concentrates on developing quantitative models that describe the behavior and exposure pathways of chemical, biological, and physical contaminants in the environment and for human and ecological populations. In 2011, the group convened a session at the 242nd American Chemical Society meeting, titled "Recent advances in the study of environmental mass transport phenomena," and several members submitted a manuscript to IEAM, titled "Good modeling practice guidelines for applying multimedia models in chemical assessments." Co-Chairs: Louis Thibodeaux, Louisiana State University; Justin Birdwell, U.S. Geological Survey.

## Life Cycle Assessment Coordinating Group

In 2011, this global coordinating group assisted with the conduct of a Pellston workshop on data and databases and coordinated expert commentary on a proposed international standard on water footprinting. The group also serves as a forum for the identification, resolution and communication of LCA issues; facilitates guidance for LCA development and implementation; and coordinates activities of all SETAC LCA AGs through geographic unit–level representatives. Global Coordinator: Nydia Suppen-Reynaga, Centro ACV. GU Co-Chairs: Christian Bauer, Europe, and Jane Bare, North America.

## Nanotechnology

The Nanotechnology AG was highly active in 2011, with three papers accepted for publication in ET&C. The group also provided outreach to the European Commission on methods standardization and to the OECD on selected nanotechnology topics. Its activities are dedicated to nanomaterials technology, definition and characterization as well as related fate and behavior, toxicokinetics and bioaccumulation, ecotoxicology and risk assessment frameworks. Co-Chairs: Larry Kapustka, SLR Consulting (acting); Bart Koelmans, Wageningen University.

## **Pharmaceuticals**

Devoted to the study of bioactive properties of pharmaceuticals, to addressing concerns about current environmental risk assessment methodology and to assessing the potential environmental impact of pharmaceuticals, this AG in 2011 completed a manuscript from the analysis of 20 key questions about pharmaceuticals and PPPs, an effort that included organizing two workshops, one in Seoul and the other in Adelaide. Chair: Alistair Boxall, University of York.

## **Sediments**

The Sediments AG focuses on environmental aspects of the quantity and quality of sediments, both as deposits and as suspended matter in freshwater, estuarine and marine environments, including all fields pertinent to conducting effective environmental risk assessment and management of sediment: transport, fate, exposure, effect, impact analysis, guideline values and frameworks, and management strategies. Co-Chairs: Paul Sibley, University of Guelph; Chris Ingersoll, U.S. Geological Survey.

### Soils

The Global Soils AG provides a scientific basis for and guidance in all aspects of soil testing on the laboratory, semi-field, and field levels, soil-related risk assessment methodologies and soil ecotoxicology, for the benefit of the overall risk assessment of chemicals and of contaminated soil, including effects of nonchemical stressors such as compaction or climate change. Co-Chairs: Mónica Amorim, Universidade de Aveiro; Michael Simini, U.S. Army Edgewood CB Center.

## Sustainability

In August 2011, this AG was established to advance the scientific, philosophical and educational foundations of sustainability. As an open forum, it serves as a resource to SETAC, environmental scientists and decision makers, and society as a whole on issues that advance the science and philosophy of sustainability and that contribute to policy development, outreach and education within and outside of SETAC. The AG includes such varied disciplines as chemistry, toxicology, ecology, social sciences, environmental economics and decision science. A major activity in 2011

was contributing to a paper on Sustainability and SETAC for the 6th SETAC World Congress in Berlin, with a lively debate session in Boston as a seminal preparatory event. Co-Chairs: Thomas Seager, Arizona State University; Paolo Masoni, ENEA-Italy.

## SETAC NORTH AMERICA ADVISORY GROUPS

## Chemistry

Highlights of the Chemistry AG's 2011 activities included organizing SETAC's involvement in the International Year of Chemistry, continuing its support for nonmember faculty and graduate students to give presentations at SETAC annual meetings, and promoting the SETAC–American Chemical Society Environmental Division student exchange. In addition, the AG's goals are to improve and sustain the inherent interdisciplinary nature of SETAC in members and expertise, and to increase awareness and relevance of environmental chemistry. Chair: Elin Ulrich, U.S. Environmental Protection Agency.

### **Human Health Risk Assessment**

The HHRA AG includes interactions between human activities and environmental exposures. Industrial pollutants and other emerging contaminants constitute candidate stressors. Scientific coverage of the environmental contaminants includes all fields pertinent to conducting effective environmental risk assessments for human health impacts such as transport, fate, exposure, effect, and impact analysis. All environmental compartments, such as aquatic, terrestrial, air, and biomass are included. Chair: Betty Locey, ARCADIS.

## Life Cycle Assessment

The LCA Advisory Group participated in the SETAC LCA community as both the geographic representatives to the newly established Global Coordinating Group and the developers of an ambitious regional program that may expand to the global level: developing a guidance document on using life cycle impact assessment for improved decision making, identifying LCI data needs and recommendations, making recommendations for peer review and auditing of LCA studies, and developing a workshop or paper on emerging technologies and methodologies. Co-Chairs: Jane Bare, U.S. Environmental Protection Agency; Scott Butner, U.S. Department of Energy.

## Metals

The Metals AG keeps members abreast of science developments and regulatory directions related to metals and metallic compounds, making use of SETAC annual meetings to present the latest research on the chemistry and toxicology of metals as well as the application and advancement of this research within environmental policy. In 2012, this AG began planning to move to the global level. Chair: Bill Stubblefield, Oregon State University.

## SETAC EUROPE ADVISORY GROUPS

## **Dung Organism Toxicity Testing**

The Dung Organism Toxicity Testing (DOTTS) AG exchanges information about testing the effects of veterinary drugs on dung organisms, notably to develop test protocols for toxicity testing with dung flies and dung beetles in order to standardize and validate the protocols. These tasks have expanded in the last few years. Although much of the original work of DOTTS has been completed, particularly in relation to OECD standards, new issues have emerged: higher-tier testing of veterinary pharmaceuticals with dung organisms and identification of a second dung beetle test species suitable for Mediterranean and tropical regions. First results were presented in Milan; final results are expected in late spring 2012. Chair: Jörg Römbke, ECT Oekotoxikologie GmbH.

## Environmental Monitoring Advisory Group on Pesticides

The EMAG-Pest AG works in response to the increased need for monitoring and post-registration studies in Europe in the context of the decision-making process for plant protection products (PPPs). Working groups are focused on four key areas: ground and surface water, aquatic organisms, terrestrial vertebrates and terrestrial and soil invertebrates, and terrestrial plants. Particular emphasis is given to links with the MeMoRisk AG, with the aim of identifying approaches that may generate reliable data, from some of the monitoring being undertaken, for model parameterization and for extrapolation purposes. Co-Chairs: Anne Alix, Dow; Martin Streloke, BVL.

## Life Cycle Assessment

During 2011, the LCA AG in Europe continued to foster LCA in carbon and water footprinting. Five LCA sessions, together with a variety of LCA-related networking meetings were organized in Milan, with extraordinary attendance. In addition, the 17th LCA Case Study Symposium was held in Budapest in February. As part of the SETAC LCA Global Coordinating Group, LCA AG participated and provided comments to the ISO Working Group on Water Footprint. In 2012, the AG will give greater attention to training and education and will explore the initiation of an LCA summer school. Chair: Christian Bauer, SIG International Services GmbH.

### MeMoRisk

The MeMoRisk advisory group focuses on the use of mechanistic effect models at organism, population, community and ecosystem levels within the European Framework for authorization and registration of chemicals such as PPPs, biocides, pharmaceuticals and industrial chemicals. In addition to activities at the SETAC Europe meeting in Milan, members of the steering committee helped organize the Special Science Symposium "The Environmental Risk Assessment of Biocides: Regulatory challenges and scientific solutions" as well as a special symposium "Advances in Ecological Modelling for Assessing Ecological Risks and Ecosystem Services" at the SETAC North America meeting in Boston. They also have proposed a workshop (MODELINK) on how to use ecological effect models to link ecotoxicological tests to protection goals. Co-Chairs: Thomas Preuss, RWTH Aachen University; Udo Hommen, Fraunhofer IME.

### REACH

The primary aim of this AG is to serve as a focal point in SETAC Europe for REACH-orientated discussions and activities, specifically with regard to discussing regulatory concerns in order to encourage and channel scientific activities, enhancing exchange of scientific information among experts in relevant fields and promoting the further development of scientific solutions in order to facilitate the formulation of technical guidance by the European Chemicals Agency (EChA). Chair: Tim Kedwards, S.C. Johnson Ltd.

## WORKSHOPS AND SPECIAL TOPIC MEETINGS

SETAC is known and respected for its pre-eminent global workshops, in particular those described as Pellston workshops in recognition of the inaugural 1970s workshop that brought together leading scientists from academia, businesses and governments around the world to address pressing scientific issues. Decades later, SETAC has held more than 50 Pellston workshops, each focusing on a relevant environmental topic with proceedings published as a peer-reviewed report, book or journal article compilation.

## PESTICIDE RISK ASSESSMENT FOR POLLINATORS

In response to declines in pollinator species in many parts of the world, SETAC member scientists focused on the topic in January 2011 in Pensacola, Florida, USA. Participants developed an improved system for conducting assessments of risk to bees and other pollinators, using existing and proposed tools for estimating exposure and effects while identifying chemicals with potential to pose a risk and refining risk estimates to pollinators for such chemicals. The resulting book will be published by SETAC in 2012.

## GLOBAL GUIDANCE PRINCIPLES FOR LIFE CYCLE ASSESSMENT DATABASES

Life cycle assessment is where the environment confronts the economy, and the UNEP/SETAC Life Cycle Initiative is a global focal point for tackling critical methodological and analytical problems. The results of this workshop, published by the Initiative, are available for free online at both SETAC's and the Initiative's (http://lcinitiative.unep.fr/) websites. Held in January in Shonan Village, Japan, the workshop hosted specialists from around the world to address the need for greater consistency with respect to data and database requirements to underpin quality life cycle assessments.

## THE INFLUENCE OF GLOBAL CLIMATE CHANGE ON THE SCIENTIFIC FOUNDATION AND APPLICATION OF ENVIRONMENTAL TOXICOLOGY AND CHEMISTRY

With climate change the headline environmental issue of the century, SETAC held a global workshop in July in Racine, Wisconsin, USA. Participants addressed the potential interactions of climate change with the foundations of environmental toxicology and chemistry, as well as the impacts those interactions have on the application of the science toexposure, effects and recovery assessments. The collected papers from the workshop will be published in ET&C in 2012.

## 20 QUESTIONS: PHARMACEUTICALS AND PERSONAL CARE PRODUCTS

In order to identify the key research questions regarding the effects and risks of PPCPs in the environment, the Pharmaceutical Advisory Group (PAG), in conjunction with Health Canada, ran a Global 20 Question Exercise. In the first phase of the exercise, questions were solicited from the academic, government and business communities around the globe. In the second phase of the exercise, selected questions were discussed at a 2-day workshop in April at Niagara-on-the-Lake, Canada, involving



academics, governmental and regulatory organizations, and the business sector. The PAG see this exercise as the start of a broader program of work with a view to stimulating coordinated research programs tackling some of the major issues identified.

## SPECIAL TOPIC MEETINGS—NORTH AMERICA

## **GULF OF MEXICO OIL SPILL**

In a multi-pronged response in 2010 to the Deepwater Horizon oil spill in the Gulf of Mexico, SETAC meetings in Seville and Portland included pertinent discussions, and ET&C published a virtual edition recapping significant existing science. The stage was thus set for a focused-topic meeting in April 2011 in Pensacola Beach, Florida, USA, bringing together some 250 environmental scientists and engineers active in the field of oil spill prevention and response, and providing a platform for the latest research findings, with the goal of developing science-based recommendations for improving oil spill response and tracking, control techniques, management and effects assessment.

## POLLUTANTS IN THE ENVIRONMENT: FATE AND TOXICITY

Led by the Mexico Regional Chapter, a second focused topic meeting was held in Mérida, México in August. This meeting included more than 100 participants from Mexico, the US, Canada and countries of Latin America, and it set the stage for wider regional discussion and collaboration in the coming year.

## SPECIAL SCIENCE SYMPOSIA, EUROPE

## 3RD SESSS: PROSPECTIVE AND RETROSPECTIVE ENVIRONMENTAL RISK ASSESSMENT OF MIXTURES: MOVING FROM RESEARCH TO REGULATION

The 2-day event in Brussels in February offered an overview of the state of the art on mixture toxicity and facilitated knowledge exchange among scientists from different disciplines, regulators and the chemical industry. Discussion of retrospective studies highlighted the need to identify key components in a given mixture or exposure scenario, for example, a river catchment or waste disposal site; in contrast, prospective studies sought to predict mixture toxicities on the basis of toxicological properties of the mixture components (often termed the "mode of action approach") in order to define environmental quality standards.

## 4TH SESSS: THE ENVIRONMENTAL RISK ASSESSMENT OF BIOCIDES; REGULATORY CHALLENGES AND SCIENTIFIC SOLUTIONS

The October symposium in Brussels provided its participants with updates on the exposure and effect assessment of biocides. The complexity of risk assessment and the specific regulatory challenges for biocides were discussed in detail, with key topics including the definition of protection goals, harmonization efforts between regulatory frameworks and the cumulative assessment of biocides. Representatives from EChA and industry presented viewpoints on future regulation.

## EDUCATION AND TRAINING

Consistent with the SETAC mission, education and training have long been leading strategic and operational priorities for the Society. Focused on professional development at all career levels, the program has traditionally relied on short courses that address current and cutting-edge topics at major geographic unit and regional meetings. The program is evolving and is moving increasingly into the realm of elearning approaches.

## WEBINARS

SETAC is working to implement its vision for future education efforts. SETAC's recognized expertise in key disciplines represents a solid foundation for an effort to provide professional environmental eLearning in response to the clear, growing and global demand for viable online tools and courses in environmental science. SETAC is a member of the consortium supporting the World Library of Toxicology to add further expertise on environmental toxicology to the largely human health–focused WLT program. SETAC held a webinar on "Tissue Residue Approach to Toxicity Assessment" in 2011 and is preparing a more intensive program of events for the future.

## **PODCASTS**

In addition to webinars, SETAC's commitment to online education extends to podcasts by IEAM, totaling 4 episodes in 2011, an innovation that offers in-depth discussions with authors of recent articles on such subjects as pre-spawn mortality in Coho salmon, challenges posed by radiation in the environment, traits-based ecological risk assessment and the tissue residue approach.

## SHORT COURSES

Quality short courses remain the Society's educational bread and butter. Fifteen short courses were offered at the SETAC Europe meeting in Milan. At the SETAC Latin America meeting in Cumaná, Venezuela, 9 short courses addressed general and regional research issues. The SETAC North America meeting in Boston featured 11 short courses, with a number of new topics serving to complement more familiar offerings on environmental risk assessment and environmental chemistry. A sampling of these offerings provides a flavor of the breadth and depth of topics addressed around the world.

## Europe

- Linking Community Data and Exposure for Mesocosms and Field Investigations
- Use of QSAR Models for REACH: Practical Use of the CAESAR and USEPA T.E.S.T Models\*
- The Endocrine System: The Good, the Bad, and the Regulations
- Characterisation of Nanoparticles in the Framework of Ecotoxicological Studies
- Marine Risk Assessment of Chemicals and Pharmaceuticals:



The State of-the-Science

- Advanced Statistical Methods in Ecotoxicology using R
- Population Models for Ecological Risk Assessment: Introduction to the Documentation Framework TRACE

### Latin America

- Determination of Mercury in Solid and Liquid Samplings
- Ecological Risk Assessment
- Monitoring of Fish as a Tool for Evaluating the State of Health of Ecosystems
- Remediation and Toxicity Analysis of Soils Contaminated with Hydrocarbons
- Use of Bees as a Tool for Evaluating Pesticide Risk in Terrestrial Environments
- Fundamental Topics Related to Endocrine Disruption
- Nano-ecotoxicology

### North America

 iSTREEM: A Web-based River Chemical Concentration Estimation Model

- PETROTOX: A Tool for the Hazard Assessment of Petroleum Substances
- Ecological Risk Assessment and Management: Processes and Applications
- · What's New in Nanotechnology: Use Risk and Regulation
- Statistical Methods in Ecotoxicology using R
- Organic Extraction and Analysis Techniques for Environmental Analysis
- Environmental Chemistry and Hazard Assessments

## SUMMER SCHOOLS

SETAC Europe offers summer schools for scientists of diverse backgrounds and education levels. The schools include time for teaching, exchanges, and knowledge assessment, and principles and methodologies are illustrated through hands-on experience and case studies. Courses in 2011 included Marine Ecotoxicology and Risk Assessment of Oils and Hazardous and Noxious Substance Spills, in June at the University of Porto, and Practical Approach to Ecotoxicogenomics, in September at the University of Aveiro, both in Portugal.





## **NORTH AMERICA**

2011 was a very productive year for SETAC North America. In addition to the Annual Meeting, two smaller but important meetings were organized:

Focused Topic Meeting on the Gulf of Mexico Oil Spill, Pensacola, FL (27–28 April). This meeting was conducted to help us better understand the environmental and community impacts of the April 2010 explosion of the Deepwater Horizon oil drilling rig, to better engineer solutions that prevent such situations and to better present complex data to the public.

Focused Topic Meeting on Pollutants in the Environment: Fate and Toxicity, Mérida, Mexico (24–27 August). SETAC North America and the SETAC Mexico Regional Chapter had the vision to hold a meeting in Mexico to facilitate a closer cooperation between the groups. Two short courses were offered, and the meeting provided a great opportunity for participants to enjoy the beauty, history and culture of Mérida and the Yucatán.









NOTABLE ALSO WAS THE INCREASE IN SETAC MEMBERSHIP IN NORTH AMERICA DESPITE THE CONTINUED SLOW ECONOMIC CONDITIONS IN 2011. SUPPORT FOR STUDENTS, EARLY CAREER PROFESSIONALS AND REGIONAL CHAPTERS CONTINUED TO BE PRIMARY OBJECTIVES FOR SETAC NORTH AMERICA

SETAC North America Annual Meeting in Boston: Navigating Environmental Challenges: Historical Lessons Guiding Future Directions.

SETAC North America continued its commitment to supporting environmental activities in host cities through service projects. The Boston project, conducted with the support of Weston Solutions, provided an opportunity for a group of local high school students to attend the meeting for a first-hand look at environmental science and careers in the field. SETAC volunteers acted as guides as the students attended platform sessions and explored interactive exhibits and poster sessions, a number of which were set up especially for them.

Noted plenary speakers addressed critical and topical environmental issues.

## CHRISTOPHER M. REDDY,

respected scientist at the Woods Hole Oceanographic Institution (Woods Hole, Massachusetts), spoke on his research on oil spills and other forms of marine pollution.

## PHIL GSCHWEND,

Massachusetts Institute of Technology, lectured on "A Legacy of PAHs, DDTs, PCBs in Our Sediments: Can We Assess the Hazards They Pose?"

## RICHARD LEVINS,

John Rock Professor of
Population Sciences at the
Harvard School of Public Health,
lectured on understanding and
influencing of processes in
complex systems as applied to
evolutionary ecology, economic
development, agriculture and
health.

## SETAC ANNUAL MTG BOSTON MASSACHUSETTS 13-17 NOVEMBER 2011 NAVIGATING ENVIRONMENTAL CHALLENGES

## **ENDOWMENT FUND**

The SETAC North America Endowment Fund was established in 2005 to support activities encouraging responsible environmental management decision-making informed by sound environmental science principles.

The Endowment Fund grew by 15% to exceed \$93,000 in 2011. Funds were raised through a combination of efforts by the SETAC Board of Directors, the Fund Board of Trustees, SETAC staff and selected student volunteers. The target fundraising threshold for 2012 is \$20,000.

In 2011, this member-driven program supported meeting participation for students and early career faculty from Mexico (2 students and 3 faculty) as well as student travel for two other North America students to attend the Annual Meeting in Boston.

## **MENTORING**

In addition to mentoring activities that are ongoing at the regional chapter level, the Boston meeting Noontime Seminar Series continued with topics on 1) How to Successfully Network and 2) How to Write Effective Grants. A Student/Mentor Dinner allowed participants to strengthen networks within SETAC and provided a valuable opportunity for discussion of scientific topics and career experiences. Bernalyn D. McGaughey, President/CEO, Compliance Services International, spoke at the annual Women in SETAC luncheon on "The Life Cycle of a Professional Woman in Science," where she discussed her personal experiences as a business leader in environmental toxicology with an emphasis on addressing leadership development.

## **Regional Chapters**

North America's 18 regional chapters are the Society's active link to local environmental practitioners and a spectrum of critical issues. Their yearly meetings are significant subregional events and underpin the broader scientific discussion featured at the annual geographic unit meeting.

## **AWARDS**

**SETAC Government Service Award:** Robert S. Boethling, U.S. Environmental Protection Agency. Since 1997, this award has recognized exemplary dedication and service in promoting the application of environmental toxicology and chemistry to risk assessment, the implementation of programs for ecologically sound practices and principles, and the provision of a communication forum among environmental professionals and society.

**SETAC/Menzie Environmental Education Award:** Jianying Hu, Peking University. The \$1,000 award is donated by the Menzie family, to a recipient who has made significant contributions to environmental education, either through educating other educators or by working with community groups and K–12 programs.

**SETAC/EA Engineering Jeff Black Fellowship:** Celina Gauthier, University of Houston Clear Lake. This \$2,000 award to a master's-level student honors Jeff Black's life in science and his contributions to SETAC by recognizing a student in any field of study encompassed by SETAC.

**SETAC/Royal Society of Chemistry Award:** Jing You, Guangzhou Institute of Geochemistry. SETAC and the Royal Society of Chemistry bestow this \$1,000 award on an early- to mid-career scientist who has published outstanding contributions to advance the understanding or development of environmental systems, technologies, methodologies or other relevant research in the environmental sciences.

**SETAC/Outstanding Regional Chapter Member:** April Markiewicz, Western Washington University. This award goes to a regional chapter member who consistently contributes to the development of the Society at the chapter level and who has improved the chapter's leadership, membership, committees, or events.

**Mark Smith Memorial Student Travel Award:** Megan Bauer, University of Prince Edward Island. Given in memory of respected

SETAC member and long-time USEPA contributor, Mark E. Smith, who died in June 2011, this award goes to the top-ranked student in SETAC North America's travel award categories.

Minority Student Travel Awards: Jonte Miller, The Citadel, and Eleanor Robinson, Baylor University. Support for these student travel awards comes from members' contributions to the Endowment Fund.

**Student Travel Awards:** A total of 93 student awards were funded, with more than \$55,000 committed by SETAC North America for 2011 (to include travel, registration waivers and other support).

**Presidential Citation:** A special Presidential Citation was given to student Heidi Scott, Trent University, in recognition of her outstanding performance in the Sustainability debate.

## LOOKING AHEAD

SETAC North America 33rd Annual Meeting Long Beach, California, 11-15 November 2012

SETAC North America 34th Annual Meeting Nashville, Tennessee, 17–21 November 2013

Joint Society of Toxicology/SETAC Workshop Building for Better Decisions: Human Health and Environmental Data Research Triangle Park, North Carolina, 8–11 May 2012

Ecosystem Services Workshop with Ecological Society of America, Spring 2013

Life Cycle Impact Assessment Technical Workshop Summer 2013

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Highlights during an outstanding year included the well-attended annual meeting 20–24 May, which featured a SETAC Europe/ISES Special Session in Milan with the theme "Emerging Exposure Science for Developing Chemical Regulatory Policy: REACH, Biocides, TSCA Reform," the annual Life Cycle Assessment symposium in Budapest in March, and the 3rd and 4th Special Science Symposia on prospective and retrospective environmental risk assessment of mixtures and on ecological risk assessment of biocides, held in Brussels in February and October. Successful outreach during the year established a SETAC Europe presence in the countries of the former Soviet Union and enhanced the SETAC presence in South East Europe.



The SETAC Europe 21st Annual Meeting was held in the Milan Convention Centre in Milan, Italy from 15–19 May 2011. The outstanding conference was attended by 2,088 participants from Europe and around the world, with a focus on the conference theme of Ecosystem Protection in a Sustainable World: a Challenge for Science and Regulation.

The SETAC Europe Annual Meeting is traditionally Europe's biggest meeting on environmental toxicology and chemistry with more than 1,500 presentations in parallel platform and poster sessions, and with participants and scientific speakers from academia, business and government.

## SETAC EUROPE 21ST ANNUAL MTG MILAN, ITALY 15-19 MAY 2011 ECOSYSTEM PROTECTION IN A SUSTAINABLE WORLD



## **LOOKING AHEAD**

SETAC 6th World Congress/ SETAC Europe 22nd Annual Meeting Securing a Sustainable Future: Integrating Science, Policy and People Berlin, Germany, 20–24 May 2012

SETAC Europe 23rd Annual Meeting Building a Better Future: Responsible Innovation and Environmental Protection Glasgow, Scotland, 13–17 May 2013

Modelink Workshop on How to Use Ecological Effect Models to Link Ecotoxicological Tests to Protection Goals 2012/2013

## Special Science Symposia, Brussels, Belgium

5th Special Science Symposium (SESSS)
Use of the Ecosystem Services Concept for the
Implementation of European Environmental Policies
15–16 February 2012

6th SESSS

Environmental Endocrine Disruptor Testing and Evaluation: Current and Future Developments 24–25 October 2012

7th SESSS Nanoparticles in the Environment February 2013

8th SESSS Marine Ecotoxicology October 2013

Four keynote speakers focused on critical topics and issues, providing perspective on the past and direction to the future.

## RYSZARD LASKOWSKI,

Jagiellonian University, Krakow: Ecotoxicology examined—current issues and trends.

## LORRAINE MALTBY,

University of Sheffield: Ecosystem services, environmental protection and SETAC—preventing and adapting to the "perfect storm."

## MARIKA BERGLUND,

Karolinska Institute, Stockholm: Exposure science—the link between hazard and risk.

## ROBERT COSTANZA,

Portland State University: Toward sustainable solutions.

## **REGIONAL BRANCHES**

SETAC Europe is home to 5 active Regional Branches: United Kingdom Branch (SETAC UK), German Language Branch (SETAC GLB), Italian Branch (SETAC Italia), SETAC Central & Eastern Europe Branch (SETAC CEE), and SETAC Africa. Each organization offers important opportunities for discussion among academia, business and regulatory authorities, promoting the application of scientific knowledge to environmental policy. Each also organizes workshops, scientific meetings and training courses on topics of interest to its members; gives support and offers networking opportunities to young scientists; and coordinates local, national or regional activities related to environmental toxicology and chemistry. The SETAC Africa Branch continues to develop and to progress toward achieving full geographic unit status within the Society, a goal likely to be achieved in 2012.

## ENGINEERED NANOPARTICLE IMPACT ON AQUATIC ENVIRONMENTS: STRUCTURE, ACTIVITY AND TOXICOLOGY (ENNSATOX)

SETAC Europe is handling the dissemination of project activities and results for the EU Project ENNSATOX, which began in July 2009 and is to be completed in June 2012. The project involves conducting parallel environmental studies to examine the behavior of nanoparticles in natural waters and how they modify the particles' chemical reactivity, physical form and biological activity. A comprehensive model will be developed to describe the environmental system and predict the effects of nanoparticles. More information can be found at www.ennsatox.eu.

## **AWARDS**

Young Scientist Awards: ECETOC Young Scientist Award for Best Platform Presentation at the 21st SETAC Europe Annual Meeting went to Charles Hazlerigg, Syngenta, for "The Importance of Density Dependence and Intra-specific Interactions in Population Models for Use in Risk Assessment." The research was carried out in collaboration with the Imperial College London and the University of Exeter.

Tom Feijtel Young Scientist Award for Best Poster Presentation at the 21st SETAC Europe Annual Meeting was won by Patricia Tcaciuc, Massachusetts Institute of Technology, for her presentation on "A Novel Methodology to Determine the Narcosis Potential of Contaminated Sediments by Using Polyethylene Samplers and Comprehensive Two-dimensional Gas Chromatography."

SETAC Europe Life Cycle Assessment Young Scientist Award was presented to Stephan Pfister, Institute of Environmental Engineering, ETH Zürich, Switzerland, for his PhD thesis, "Environmental Evaluation of Freshwater Consumption with the Framework of Life Cycle Assessment."

**Best Publication Awards:** SETAC Europe/Eurofins Best Publication Award in Chemical Analysis and Environmental Monitoring went to Annekatrin Dreyer, Helmholtz Zentrum Geesthacht, Centre for Materials and Coastal Research, Geesthacht, Germany, for her publication "Wet Deposition of Poly- and Perfluorinated Compounds" in Environmental Pollution.

SETAC Europe/AstraZeneca Best Publication in Risk Assessment, Modelling and Theoretical Studies went to two winners: Claire Duchet, European University of Bretagne, France, for "Population-level Effects of Spinosad and Bacillus thuringiensis Israelensis in Daphnia pulex and Daphnia magna: Comparison of laboratory and field microcosm exposure conditions" in Ecotoxicology, and Emma Undeman, Stockholm University, Sweden, for "Susceptibility of Human Populations to Environmental Exposure to Organic Contaminants" in Environmental Science & Technology.

SETAC Europe/RifCon Best Publication in Ecotoxicology, Ecoepidemiology and Biological/Biochemical Studies was awarded to Julia Farkas, NIVA, Norway for "Uptake and Effects of Manufactured Silver Nanoparticles in Rainbow Trout (Oncorhynchus mykiss) Gill Cells" in Aquatic Toxicology.

**Professional Awards:** SETAC Europe/Noack-Laboratorien Environmental Education Award honored Yogeshkumar "Yogi" Naik, Associate Professor, National University of Science & Technology, Bulawayo, Zimbabwe for his outstanding achievements as a scientist and mentor in the field of environmental toxicology.



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## **AFRICA**

SETAC Africa Branch's impressive year included a successful biannual meeting in Cameroon, progress toward shifting the branch to full geographic unit status within SETAC, and positive membership growth and networking with other organizations active in the region. The branch was represented at the regional SAICM meeting and is becoming a focal point for environmental science in Africa.

The 5th SETAC Africa Branch conference, conducted jointly with the Cameroonian Society of Toxicological Sciences (CSTS), was held 31 May – 3 June 2011 at the University of Buea, Cameroon. The conference addressed the theme "Searching for African Solutions to Human and Environmental Toxicological Challenges" and brought together stakeholders involved in research, production, utilization, release, management or regulation of toxic chemicals. The meeting offered 70 poster presentations and 2 days of short course training, including a general toxicology course to broaden the knowledge base of participants in the areas of toxicology, including environmental toxicology. Conference participants came from 19 different countries in Africa, Europe, Asia and North America.

Featured plenary speakers were

## MICHIEL DAAM,

(Portugal) on "Aquatic ecotoxicology of pesticides under temperate versus tropical climates"

## MATHEW MUZI-NINDI,

(South Africa) on "Technological development in mass spectrometry and chromatography: pharmaceutical personal care products, hormones, veterinary drugs residue in waste waters treatment plants, Africa's challenge"

## DAVID KAPINDULA,

(Zambia) on "SAICM implementation and update on progress in the African region."



MEETING SCHEDULED



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## TREES FOR AFRICA

The SETAC Africa Branch, with support from SETAC Europe, worked with UNEP in association with the Centre for Nursery Development and Eru Propagation (CENDEP) to help expand and conserve the communal forests in Bafut and Mbiame in northwestern Cameroon. This activity was undertaken as part of the UNEP Billion Tree Campaign during the International Year of Forests.







## ASIA/PACIFIC

preparations for the next biannual meeting, scheduled for 24–27 September 2012 in Kumamoto, Japan. Membership continued to grow. The Australasian Society for Ecotoxicology marked its first full year as a regional chapter of SETAC Asia/Pacific, and work continues on establishing regional chapters in China, Japan and elsewhere. Ongoing outreach efforts aim to strengthen links among other national associations that address chemistry and environmental toxicology.

EnviroTox 2011, the inaugural conference of the newly established SETAC Australasia chapter (SETAC AU) was held 17–20 April 2011 in conjunction with the Royal Australian Chemical Institute in Darwin, in Australia's Northern Territory. The meeting was attended by more than 200 local, regional and international delegates, and featured 3 workshops covering the topics of Bayesian Statistics, Ecogenomics and Endocrine-disrupting Chemicals. Three outstanding plenary speakers, Tracy Collier, Samuel Luoma and Mary Reiley, and 6 prominent international and national keynote speakers presented highly informative and engaging talks, providing a solid base for the multiple concurrent daily sessions.

SETAC Asia/Pacific was a co-organizer of the International Conference on Deriving Environmental Quality Standards for the Protection of Aquatic Ecosystems (EQSPAE 2011), held 3–7 December 2011 at the University of Hong Kong. Co-sponsors included the Environment and Conservation Fund of the Government of the Hong Kong Special Administrative Region, the University of Hong Kong, the Swire Institute of Marine Science, the Centre for Marine Environmental Research and Innovative Technology, and the Chinese State Key Laboratory in Marine Pollution. More than 150 participants from 10 different countries attended the 3-day EQSPAE Conference, while more than 90 delegates attended the two pre-conference workshops to learn about derivation methods for water or sediment quality guidelines.



## LOOKING AHEAD

SETAC Asia/Pacific Annual Meeting (SETAC AP 2012), to be held 24-27 September 2012 in Kumamoto, Japan.

The 2nd SETAC Australasia Regional Chapter conference, scheduled for 4-6 July 2012 in Brisbane, Queensland, Australia, with special focus on the impact of extreme weather events and climate change.

Second International Conference on Environmental Pollution, Restoration and Management, 4-8 March 2013 in Hanoi, Vietnam, co-sponsored with SETAC Asia/ Pacific by the Hanoi University of Science and Loyola University of Chicago with the theme of Enhancing Environmental Research and Education in Developing Countries.





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## LATIN AMERICA

SETAC Latin America made several significant steps forward in 2011. The geographic unit achieved substantial membership gains, held a very successful biannual meeting and established two major regional chapters in Brazil and Argentina. Important science was addressed, and members became involved in such global activities as advisory groups and cross-disciplinary communication.



# X CONGRESO de SETAC Latin America 11-15 OCTOBER 2011 CUMANÁ VENEZUELA



The 10th biannual Congress of SETAC Latin America convened 11–15 October in the historic provincial Venezuelan city of Cumaná, with several hundred participants from 21 countries in Latin America and around the world in attendance under the theme "A Commitment to Nature." The Congress was held jointly with the First Congress of Venezuelan Ecotoxicology, with local hosting and organization provided by the University of the East (Universidad de Oriente [UDO]) and the Communal Foundation on Environmental Toxicology (Fundación Comunal de Toxicología Ambiental), a nongovernmental organization that brings the local ecotoxicology community together to solve problems caused by urban and industrial contamination in Venezuela.

The Congress focused on promoting actions to support sustainability and ecological quality across the range of SETAC disciplines. Some 21 sessions addressed a broad geography, from Antarctic to tropical, and across the range of disciplines including environmental chemistry; aquatic, atmospheric and terrestrial ecotoxicology; clean technology and bioremediation; global climate change; standardization of toxicity tests; biomarkers and mechanisms of toxicity; and risk evaluation, environmental education and life cycle assessment. There were 60 platform presentations, 160 poster presentations and 7 well-attended short courses with instructors from Latin America, North America and Europe. The meeting offered the kind of networking opportunities and attractive social programs for which SETAC is known worldwide. There was considerable participant response to new challenges, including addressing ongoing oil spill concerns in Latin America and participating in SETAC's global engagement on mercury and other significant issues.

## **REGIONAL CHAPTERS**

Brazil – The Brazilian Society of Ecotoxicology membership decided to affiliate with SETAC Latin America; the inclusion of this group will significantly boost the membership of SETAC in the region by several hundred and will add a major regional chapter meeting every two years. In 2012, the new Brazilian regional chapter will hold its annual meeting 25–28 September in Recife, Brazil with 700 participants expected to attend.

Argentina – A strong contingent of SETAC members has organized a regional chapter within Argentina and anticipate that their inaugural meeting on 16–19 October 2012 will attract several hundred participants.

## **WORKSHOPS**

Preparations began in 2011 on a workshop titled "Latin American Aquatic Risk Assessment of Pesticides (LATARAP)" to be held in Buenos Aires 10–12 October 2012. The workshop will attract scientists from Latin America with participation by invited experts from around the world.

## PAN AMERICAN COLLABORATION

Working together on the basis of a U.S. National Science Foundation grant, SETAC Latin America is joining with SETAC North America to organize a Pan American Studies Institute (PASI) Short Course on Air Quality at the Interface: Mega Cities and Adjacent Agroecosystems to be held in La Plata, Argentina in August 2012. Preparations began in 2011, and the event will include some 30 students from the United States and Latin America, with instructors drawn from both North America and Latin America geographic units. The course will focus on current scientific understanding of these interface issues.

En sistemas dinámicos como los estuarios, las fluctuaciones de factores abióticos (ej. Salinidad, T") y su particular biogeoquímica de sedimentos, representan una problemática a la hora de estimar el riesgo mediante experimentos de laboratorio, ya que estos carecen la integración de estas reflejan condiciones más cercanas a las encontradas en el campo. Respuestas bioquímicas de estrés oxidativo, han sido usadas extensivamente como biomarcadores no específicos de contaminación en sistemas estrecimos (Monserrat et al., 2007; Díaz-Jaramilllo et al., 2011), por otro lada diferencia de respuestas subindividuo que representan una importancia ecológica cuestionable, respuestas de comportamiento como capacidad de enterramiento, se encuentran relacionadas a procesos ecológicos de importancia como la habilidad para oxigenar/irrigar sedimentos profundos y escapar de depredadores en la superficie.

El objetivo de este estudio fue determinar respuestas bioquímicas como la actividad GST, ACAP, niveles de GSH y TBARS (parte anterior y posterior del ind.) en conjunto con respuestas de comportamiento como la capacidad de enterramiento en la especie clave estuarina P. gualpensis, transplantado desde un estuario poco impactado hacía un estuario con altos niveles de Hg (Lenga: centro sur de Chile) durante varias semana para determinar respuestas a mediano/largo plazo.

## METODOLOGÍA



Variables físi

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Respuesta

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GSH

ACAP

TBARS

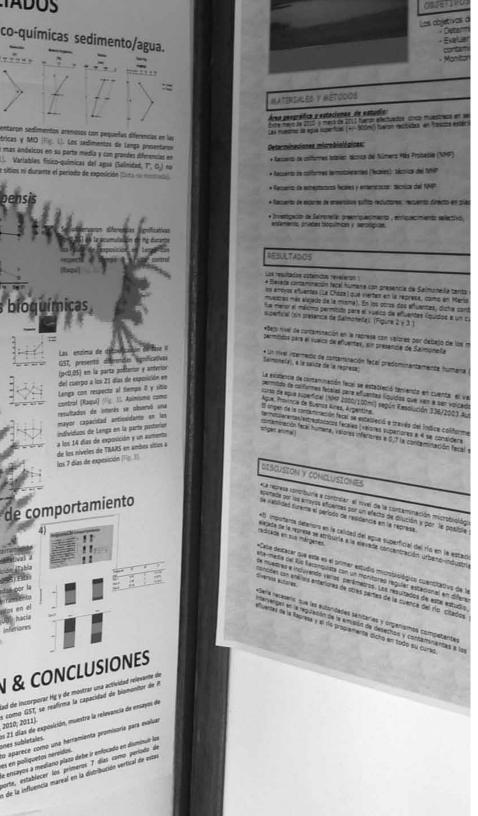
Respuestas

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DISCUSIÓ

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## LATIN AMERICA BOARD OF DIRECTORS

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## LOOKING AHEAD

SETAC Brazil Regional Chapter Meeting (XII Brazilian Ecotoxicology Porto de Galinhas, Brazil, 25-28 September 2012

SETAC Argentina Regional Chapter Meeting Buenos Aires, Argentina, 16-19 October 2012

Latin American Aquatic Risk Assessment of Pesticides (LATARAP) Workshop Buenos Aires, Argentina, 10-12 October 2012

V SETAC Latin America Meeting 2013 (Location to be determined)

## **GLOBAL AWARDS**

SETAC strives to recognize and honor outstanding contributions of individuals or groups of individuals to the environmental sciences and to the Society by means of the Awards Program. SETAC also endeavors to recognize and honor the participation of students and pre-professionals and to use Society resources to enhance their professional development. SETAC awards may be global in stature, or they may recognize contributions at the geographic unit or regional level.

The SETAC Global Awards Committee is charged with reflecting the overall intent of the awards and fellowships process; its scope encompasses contributions and achievements throughout all geographic units. Candidates may be self-nominated or nominated by another individual.

### Rachel Carson Award

The Rachel Carson Award, SETAC's premier global award presented every four years on the occasion of the World Congress, was presented in 2008 to Tim Flannery, an eminent Australian environmentalist and an established researcher in mammology and paleontology who has published extensively on environmental issues in the best tradition of Rachel Carson.

### Founders Award

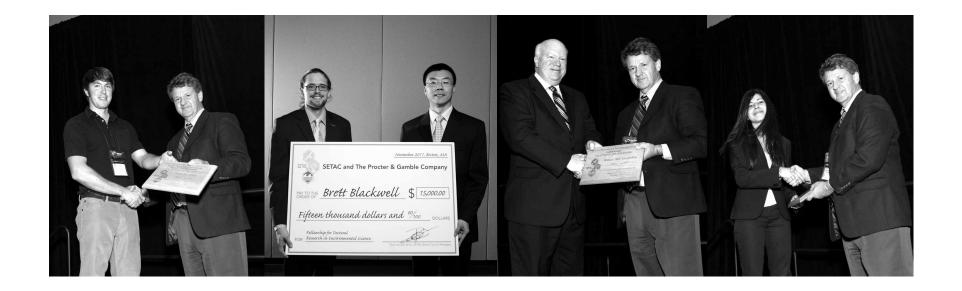
SETAC's highest annual award was presented to Michael McLachlan of Stockholm University for a career of outstanding work in combining excellent research in environmental chemistry, process-based environmental modeling and state-of-the-art analytical chemistry at ultra-trace levels.

## Herb Ward Exceptional Service Award

Presented to William Goodfellow, EA Engineering, Science, and Technology, Inc., this award is given to recognize a past or present SETAC member who has performed long-term, exceptionally high-quality service to the Society.

### SETAC/ICA Chris Lee Award

Presented to Justin Conley of North Carolina State University for his outstanding research contributions on the environmental behavior and bioaccumulation of selenium at the base of food webs, this award is sponsored by The International Copper Association and provides up to \$5,000 to a graduate student or recent graduate who has researched the fate and effects of metals in the environment.



#### SETAC/Procter & Gamble Fellowship for Doctoral Research in Environmental Science

Presented to Brett Blackwell, Texas Tech University, for his work, "Potential of the Wetland Macrophyte Bidens laevis L. as Biomonitor of Genotoxic Effects of the Insecticide Endosulfan," this fellowship is sponsored by The Procter & Gamble Company and provides \$15,000 for one year of PhD studies in environmental science.

#### Global Partners Capacity-Building Award

This award recognizes member volunteer service in capacity building in developing countries. The award was last presented in 2009 to Christina E. Cowan-Ellsberry, Diana Graham, Phil Jennings and C.J. (Kees) van Leeuven for developing and teaching an outstanding curriculum on risk assessment for SETAC's Africa Regional Training Workshop under the SAICM Quick Start Programme; the workshop was conducted in March in Dar es Salaam, Tanzania.

#### ET&C Best Student Paper Award

Presented to Carla Cherchi, Northeastern University, for her paper titled

"Impact of Nano Titanium Dioxide Exposure on Cellular Structure of Anabaena variabilis and Evidence of Internalization," this award is given annually to the best student paper published or accepted in SETAC's esteemed journal Environmental Toxicology and Chemistry during the past year.

In addition to these traditional awards, in 2010 SETAC created two new awards. The **SETAC Environmental Professional Award** is designed to recognize an individual's advancement and development as a professional, often early in his or her career, and ultimately may include many SETAC members whose association with the Society has been continuous and who are active in their field. The **SETAC Fellows Award** acknowledges the longer-term and significant scientific and science policy contributions of SETAC members to the sciences embraced by SETAC, including ecotoxicology, environmental chemistry, risk assessment and life cycle assessment. The hallmark of a SETAC Fellow is leadership within the professional and scientific arenas. SETAC Fellows will constitute a body that possesses institutional knowledge of the Society and thus can serve as a sounding board for the SETAC World Council.

# GLOBAL PARTNERS AND AFFILIATES

An ever-changing world requires innovation and advancement in science, often accomplished in the traditional scientific disciplines of toxicology, chemistry and risk assessment. SETAC members are helping to advance science in areas such as nanotechnology, green chemistry, sustainability and life cycle considerations. Our Global Partners and Global Partner Affiliates are actively engaged in helping SETAC build valuable partnerships to explore these emerging areas of science and to reinforce the overall effort to promote robust and sound scientific principles, especially in developing countries. With this support, Global Partners and Affiliates are ensuring that Environmental Quality Through Science® and SETAC's mission are heard around the world.

With a breadth of experience resulting from SETAC's unique tripartite relationship of government, business and academia, the Global Partners Council provides strategic thinking on both science and financial resources to the SETAC World Council and committees. In addition, the sponsorship of the Capacity-Building Award underscores the Global Partners' commitment to recognize excellence in scientific training and capacity building in developing countries, a contribution that will help SETAC meet the challenges facing environmental scientists and practitioners everywhere.

In 2011, twenty-eight Global Partners and Global Partner Affiliates

- Supported student and developing country membership dues to promote membership growth and build scientific capacity in developing countries;
- Helped underpin SETAC engagement in international environmental efforts and programs related to the UN and other intergovernmental activities; and
- Contributed expertise in elearning and training to strengthen efforts in capacity building, both within SETAC and as outreach tools.

#### **GLOBAL PARTNERS**

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### **GLOBAL AFFILIATES**

American Cleaning Institute

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Global Silicones Council

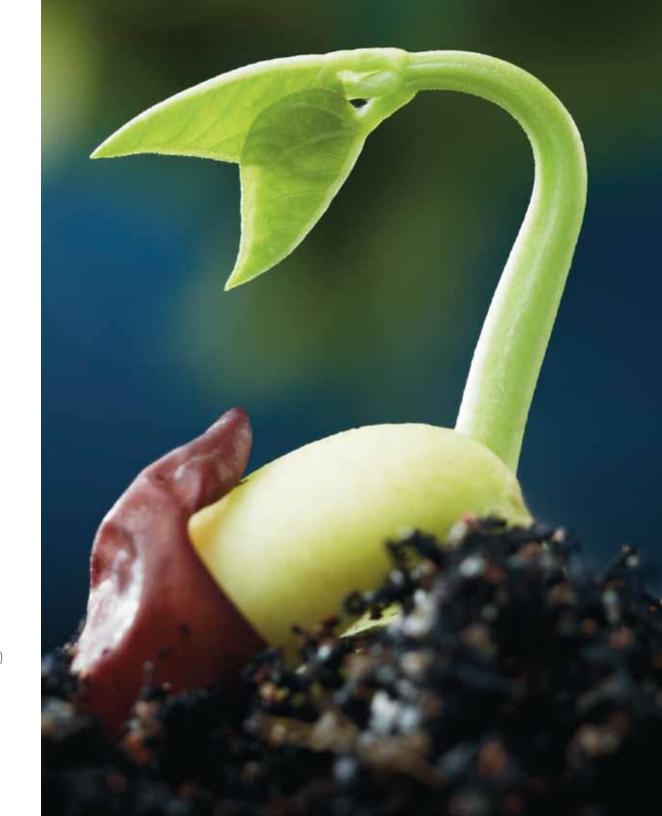
ILSI Health Environmental Sciences Institute (HESI)

International Copper Association

International Zinc Association

Research Institute for Fragrance Materials

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### GEOGRAPHIC UNIT SUSTAINING MEMBERS, AFFILIATES, AND PARTNERS

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American Petroleum Institute

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Alterra. The Netherlands

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# STUDENTS AND MENTORING

Recognizing that the students of today are the scientists of tomorrow, SETAC has made student participation and programs a priority. Students are active in meetings at all levels and in all geographic units, and the student community is represented at the geographic unit governing body–level in Europe and North America. SETAC students are known for their intellectual engagement and enthusiasm, and their special energy always enlivens SETAC annual meetings.

#### **EUROPE**

SETAC Europe's Student Advisory Council (SAC), chaired by Markus Brinkmann, together with the local organization committee chaired by Sabrina Peddinghaus and the scientific committee chaired by Dominic Kaiser, jointly organized the 2nd Young Environmental Scientists Meeting (YES-Meeting) from 28 February to 2 March 2011 at RWTH Aachen University, Germany. Ninety students from all over the world were invited—based on the scientific quality of their submitted abstracts—to give either a platform or a poster presentation in one of 7 sessions. The meeting included several mentoring sessions with senior SETAC member scientists aimed at enhancing students' presentation skills and providing guidance for career planning. The SAC met as well at the annual meeting in Milan, with activities including a mentor lunch and student assembly, while preparing for the 3rd YES meeting, scheduled for the World Congress in Berlin in May 2012.

Since May 2011, the SAC is composed of Annika Agatz, University of York, England; Grazia Barberio, ENEA, Italy; Markus Brinkmann, past-chair, RWTH Aachen University, Germany; Tilman Floehr, RWTH Aachen University, Germany; Dragan Jevtic, Jagiellonian University, Poland; Varja Knezevic, University of Novi Sad, Serbia; Tao Liu, Kalmar University, Sweden; Michael Melato, Cape Peninsula University, South Africa; Ola Westman, Örebro University, Sweden; and Jochen Zubrod, chair, University of Koblenz-Landau, Germany.

#### **NORTH AMERICA**

In 2011, the North America Student Advisory Committee (NASAC) planned some excellent student activities for the Boston annual meeting, started a Facebook group for students and also had some leadership changes.







At the Boston meeting, NASAC worked with the Student Activities Committee to host several student-oriented events, including two noontime seminars: "How to Successfully Network" and "How to Write Effective Grants." For the networking seminar, Ted Valenti, Aaron Roberts, Richard Frank, Lawrence Malizzi, Larry Kapustka and Melisaa Panger spoke about their experiences being a mentor and mentee, and offered tips on how to mentor successfully. During the grant seminar, Chris Ingersoll, John Giesy and Bryan Brooks discussed how to locate grant funding and presented tips for writing grants. Both seminars were well attended and interactive.

The Student/Mentor Dinner gave students the opportunity to practice their networking skills from the seminar and to hear career development advice from professionals in academia, government and business. A student social event drew a big crowd at McGreevy's, a local pub.

The winners of the 3rd annual student art contest were announced in Boston as well:

1st Place: a photo by Brad Glenn from Clemson University

2nd Place: a painting by Brianna Cassidy from University of South Carolina

3rd place: a photo by Emily Hooser from Oklahoma State University

The 2011 contest theme was "Navigating the Challenges of Environmental Science," and a record number of submissions were judged on their artistic quality as well as the art's relation to the theme.

At the end of 2011, NASAC voted to create a Facebook group to disseminate important information for students, to get feedback and input on events, and to be a forum for students to connect. The NASAC Facebook Page will be unveiled in Spring 2012.

During 2011 NASAC created and distributed two bi-annual newsletters showcasing chapter updates, membership changes, upcoming meetings, and socials and other events.

In November 2011, Jennifer Cole, Texas Tech University Institute of Environmental and Human Health, completed her term as vice chair. She is a member of the South Central Regional Chapter. Ashley Jessick, University of Nebraska Medical Center, continued her role as the NASAC chair. Ashley is a member of the Ozark-Prairie Regional Chapter. The new vice chair is Erica Anderson, a PhD candidate in Interdisciplinary Toxicology at the University of Florida.

#### LATIN AMERICA

There was a strong student contingent active at the SETAC Latin America meeting in Cumaná, and organizational activities are ongoing with the goal of establishing a working student organization for the geographic unit.

## FINANCIAL FACTS

The SETAC World Council and the SETAC geographic units operate as separate financial entities. This consolidated and unaudited summary of financial performance is provided for information only. SETAC invests in students, recent graduates and developing country members by subsidizing dues, student travel and meeting registration fees.

All figures expressed in thousands of U.S. dollars.

**NET OPERATING RESULTS** 

(39)

**TOTAL ASSETS** 

2,919

**TOTAL LIABILITES** 

1,481

**NET ASSETS** 

1,438

**EUROPE WORLD COUNCIL NORTH AMERICA** 1,875 1,295 1,548 **OPERATING REVENUES - 4,760** LATIN AMERICA/ ASIA PACIFIC **EUROPE NORTH AMERICA WORLD COUNCIL** 1,872 1,549 1,374 4 **OPERATING EXPENSES - 4,799 TECHNICAL PUBLICATIONS OTHER MEMBERSHIP DUES ANNUAL MEETINGS** ACTIVITES 354 **589** 198 2,574 1,045 **SOURCES OF REVENUES - 4,760 SALARIES & WAGES OTHER PUBLICATIONS ANNUAL MEETINGS** 1,830 1,589 **796 584** 

AREAS OF EXPENSES - 4,799

**OTHER** 

**42** 

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