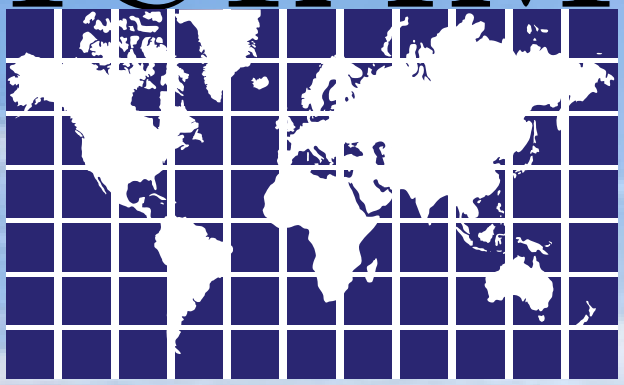
ICIAM



The ICIAM Newsletter
Vol. 1, No. 2, April 2013

The ICIAM newsletter was created to express the interests of our membership and partner organizations and the views expressed in this Newsletter are those of the authors and do not necessarily represent those of ICIAM or the Editorial team. We welcome articles from members and associations, both announcing events, on-site reports from events and industry news.
homepage: `www.iciam.org`

The ICIAM Newsletter

by Barbara Lee Keyfitz

The ICIAM officers are pleased to present the second issue of the ICIAM newsletter, soon to receive a new name (see the contest instructions in this issue). At the upcoming Board meeting in Beijing in May, we will ask for approval from the Board to continue to publish a newsletter in the name of ICIAM. We will ask the Board to designate C. Sean Bohun as Managing Editor (as appears already on the masthead) and to approve an editorial board, which will operate alongside Sean to ensure that the newsletter will adhere to accepted professional standards for publications of an organization like ICIAM. We are pleased that a number of member societies have already designated "reporters" who are making periodic reports on news of their societies that will interest ICIAM members. And we are beginning to assemble an individual subscriber database. We encourage readers, whether members of ICIAM member societies or not, to become subscribers.

The intended publication schedule will comprise one volume per year, with four issues, slated to appear on January 15, April 15, July 15 and October 15. The deadline for material to be included in each issue is the end of the preceding month: December 31, March 31, June 30 and September 30. The publication is "electronic-only" and, because of its size, will be distributed by means of a link that will be mailed to subscribers. The link will appear also on the ICIAM home page. ICIAM holds the copyright to all material published in the newsletter, but readers are encouraged to print copies for their own use and to share privately with the community. Permission to reprint articles should be sought from the editors. It is our intention to seek an ISSN number once the newsletter is established and has a permanent name.

As can be seen from the first two issues, the newsletter will serve in part to disseminate information about ICIAM itself: calls for nominations for prizes and awards, news of the upcoming Congress, and opportunities provided by organizations (currently CIMPA and ICSU) with which ICIAM is associated. In this issue, you will also find a summary of some important amendments to the by-laws now under consideration by the Board, a snapshot of the current functions of the ICIAM officers, and a report on the "Educational Interfaces Between Mathematics and Industry" project, which ICIAM undertook with ICMI. Beyond that, we hope to include in future newsletters

- A "letters to the editor" column, in which readers can respond to articles published in the newsletter, or air their thoughts and concerns on matters pertinent to ICIAM. It is recommended that letters be no longer than 300 words; longer submissions will be considered as possible articles.
- Reports on projects supported by the ICIAM developing countries fellowships.
- Topics for discussion at Board meetings. Some topics that have interested Board members recently include aspects of journal publication, the role of commercial, academic and society publishers, and alternatives to the current modes of publication, such as various flavors of open access; maintaining the integrity of scientific publications; and the use of metrics to evaluate individuals.
- Articles of general interest to the community.

We look forward to hearing from you.

Barbara Lee Keyfitz (bkeyfitz@math.ohio-state.edu) is the Dr Charles Saltzer Professor of Mathematics at the Ohio State University. She has a PhD from New York University, and works in partial differential equations. She is the current President of ICIAM.

Subscribing to the ICIAM Newsletter

The ICIAM Newsletter will appear quarterly, in electronic form, in January, April, July and October. Issues will be posted on the ICIAM Web Page at www.iciam.org/News. If you would like to be notified by e-mail when a new issue is available, please subscribe to the Newsletter. There is no charge for subscriptions. To subscribe or unsubscribe, visit the webpage given above, or go directly to groups.google.com/group/iciam-news.

What is the Name of this Newsletter? Competition Announcement

ICIAM's Newsletter needs a name, and the editors and officers wish to have an open competition to find one. Here are the contest rules:

1. Submit your suggestions by June 15 to Barbara Keyfitz (bkeyfitz@math.ohio-state.edu) or to any of the officers
2. You may submit as many entries as you wish
3. If you wish, you may attach a supporting statement or justification, but this is not necessary
4. Editors and reporters are welcome to submit entries, but
5. The judging panel for the competition will consist of those editors, reporters and officers who have not entered the competition, to avoid the appearance of conflicts of interest
6. The winning entry will be adopted as the name of the newsletter, from Issue #3 onward, and the inventor of the winning name will be acknowledged in Issue #3.

A Report on "Mathematics in Science & Technology" a Satellite Conference of ICM 2010

by A. H. Siddiqi

Introduction

The International Congress of Mathematicians, ICM, meets once every four years to discuss the most important results in mathematics. In 2010, the Congress met in Hyderabad. Built around that main meeting, a number of Satellite meetings were held on various sub-disciplines of mathematics. The Delhi meeting on "Mathematics in Science & Technology", one such Satellite meeting, was held under the joint sponsorship of the Indian Society of Industrial and Applied Mathematics (ISIAM) and Sharda University. The meeting was held on 15–17 of August, preceding the Hyderabad Congress. The Satellite meeting included a workshop on Inverse Methods and Wavelets.

Applied Mathematics

Applied Mathematics is not only about applying existing mathematics to problems of practical interest but also about inventing new mathematical tools and results that have practical consequences. Applied Mathematics has a vital role to play in diverse areas of engineering and in energy, environment, materials, geological and atmospheric sciences, biological sciences including medicine, as well as social sciences including economics. Mathematical modeling underlies a better understanding of such topical problems as climatic change, urbanization, ground water depletion, oil recovery, spread of infectious diseases, and constructing new structures and materials; in addition to traditional disciplines such as aeronautical, civil and mechanical engineering. At a time when the country is engaged in technological rejuvenation, applied mathematics has a vital role to play in India.

While there are excellent applied mathematicians in India, their number is not high, and the participation of the community in enhancing the technological base of the country is not yet fully effective. Meetings like this have the goal of improving these conditions. Also important are long-term efforts to improve the quality of applied mathematics—organizationally, institutionally and individually. This is the view of the organizers as well as of many who wish to see India prosper.

From left to right: Noore Zahra, Barbara Keyfitz, and Helge Holden attending "Mathematics in Science & Technology". —Image used with permission.

Inaugural Function

The conference was inaugurated by the political and legal luminary, the Honorable Mr. Salman Khurshid, External Affairs Minister Government of India. His speech explained the use of mathematics and showed appreciation for the role of the Indian Society of Industrial and Applied Mathematics (ISIAM) and an emerging institution, Sharda University. The Vice-Chancellor of Sharda University, Dr. R.P. Singh, highlighted the goals set by Sharda University for the development of science and technology. Visiting international applied mathematicians - Prof. Rolf Jeltsch, (President of the International Council for Industrial and Applied Mathematics (ICIAM)), Prof. Ian Sloan (Past President ICIAM), Prof. Barbara Lee Keyfitz (President Elect ICIAM), Prof. Douglas N. Arnold (President of the US organization Society of Industrial and Applied Mathematics (SIAM)), and Prof. Martin Golubitsky, Former President SIAM—also introduced the conference. The organizer of the conference, Prof A. H. Siddiqi (Secretary ISIAM) of Sharda University, welcomed the participants. Five distinguished Indian applied mathematicians - Professor Phoolan Prasad (Honorary Professor and Rammana Fellow India Institute of Sciences, Bangalore), Professor N. Rudraiah (Bangalore University), Professor U. B. Desai (Director, IIT Hyderabad, a distinguished electrical engineer), Professor S. Kesavan (Duty Director of Institute of Mathematics, Chennai) and Professor O. P. Bhutani (Former Dean Postgraduate Studies and Research IIT Delhi)—were also introduced.

The Dr. Zakir Husain Award instituted by Duty Society, AMU was presented to Prof. M. Zuhair Nashed, University Central Florida, in recognition of his contributions to the more accurate understanding of many real world problems. Prof. P. Manchanda of Guru Nanak Dev University presided over the opening program, and a vote of thanks was proposed by Prof. R. C. Singh of Sharda University. Professor K. R. Sreenivasan (Courant Institute of New York University and former Director ICTP, Trieste, Italy) gave a concluding address.

Participants and Lecturers

Applied mathematicians from all over the world came to the Delhi meeting, in part because it was timed to coincide with the annual ICIAM Board meeting, and to directly precede the ICM. Scientists from the US, Europe, Japan, Brazil, Turkey and other countries expounded their results in lectures intended to be accessible to young applied mathematicians in India. The problems they discussed ranged from nano-technology to optimization, from turbulent mixing to rainfall extremes, from cryptography to reward-risk analysis in portfolio processing to queuing theory.

Other Highlights of the Meeting

More than 100 delegates from different parts of India and abroad presented their research contributions alongside the 25 invited talks by senior scholars from India and abroad. A session devoted to optimization and applications was chaired by Prof. Dinesh Singh, Vice Chancellor Delhi University. The workshop on Inverse Problems and Wavelets included Prof. Peter Maass and Prof. M. Z. Nashed. Dr. Ms. Hulya Kodal Sevindir of Kocaeli University, Turkey also presented her joint work with Prof. A. H. Siddiqi and Prof. Zafer Aslan.

In Professor A.H. Siddiqi's academic career, which spans a period of more than four decades, he has been associated with some well-known institutions like the International Center of Theoretical Physics (ICTP, a UNESCO organization), Heidelberg University, Kaiserslautern University, McMaster University, King Fahad University of Petroleum and Minerals, and Aligarh Muslim University. He has guided more than two dozen Doctoral Degree students. He has authored 7 books and edited 8 proceedings of international conferences. Additionally, he has published more than 100 research papers.

Changes to the ICIAM By-Laws

by Barbara Lee Keyfitz

"Good fences make good neighbors", and good by-laws are an important element in holding an organization together by marking the limits of the permissible and impermissible. The ICIAM by-laws date from 1994, when the organization was called CICIAM, and there have been many amendments since then. The current version is posted on the ICIAM website, accessible from the home page. One thing that appears not to have changed from the inception of the organization is the principle that the smallest societies (both full and associate members) do not have a vote in the affairs of ICIAM. These societies have, nonetheless, contributed in important ways to ICIAM. To cite only a couple of examples, the Swiss Mathematical Society was the host of ICIAM 2007, and the Association for Women in Mathematics was one of the originators of the Olga Taussky-Todd Lecture.

It is a fact that attendance by small member societies is also inconsistent. Some of that is surely due to simple budget considerations, as small societies have smaller budgets, and travel to international meetings can be a major commitment. But in fact all our members operate under budgetary constraints, and it can be difficult to justify to one's Board why one should travel halfway around the world to be an "observer". Over several Board meetings, now, the Board has expressed a desire to see a membership structure that would give every member a vote, and over the past year a small committee set up by the Board has come up with a plan to do this. That plan has been formulated as an amendment to the by-laws, and it will be discussed and voted upon by the Board at the upcoming meeting in Beijing, May 11.

The committee, whose members represent societies of all sizes, both full and associate members, went further than that, enunciating the principle that voting power should be proportional to dues payment. Under the current dues structure, this would mean that Large Full members would have four votes, Medium Full and Large Associate members two, and Small members, whether Full or Associate, a single vote. The officers in fact favored this solution, but the committee, which had the final word on the subject, has voted narrowly (3/2) for a ratio of 6:3:1, with the relative size of the dues adjusted accordingly. There are arguments in favor of both positions; the majority on the committee preferred to see a more gradual change in the voting power of small societies.

Following guidelines supported by the Board in previous statements, the amended by-laws will preserve the number of representatives each society may send to a Board meeting. In practice, that is not a limitation, as guests have always been welcomed at meetings. A more delicate question concerns how a society's six or four votes are to be cast, if a society is entitled to send two representatives. Currently, a representative carries one vote, so that a Large Full member must send two delegates if it wishes to exercise its full voting power. Overall, the committee feels that the simplest solution to this question is to allow one representative to cast all the votes for their society. On the other hand, the committee (and the officers) felt that the use of "proxy voting", in which a representative for one society also serves as a representative for a second society, might be a serious problem now that every society has a vote, and this should not be allowed. One argues that a purpose of this amendment is to encourage all societies to attend Board meetings and participate in the discussion, and this purpose is defeated if societies do not need to be present to vote.

In presenting this amendment, the committee is optimistic that it will make ICIAM more inclusive and more representative of applied mathematics world-wide, and that the participation of more groups will bring fresh ideas and projects to ICIAM.

The members of the committee, and the societies they represented, were

I. David Abrahams (IMA)
Alain Damlamian (SMAI)
Irene Fonseca (SIAM)
Michael Guenther (ECMI)
Jill Pipher (AWM)
Domingo Tarzia (ASAMACI).

I chaired the committee and served as a non-voting member. On behalf of ICIAM, I want to thank all the members for their work.

Workshop on Applications of Mathematics to Industry Attracts Visitors from Abroad

by David Marques Pastrelo

The following is a translation of an article published in the newspaper A Folha, Sao Carlos, Brazil, December 16, 2012.

On Wednesday December 12, 2012, the Institute of Mathematics and Computer Science (ICMC), of the University of São Paulo (USP) in São Carlos, Brazil held a Workshop on Mathematics in Industry, an event that aimed to showcase some practical applications of mathematics to industry, and which was attended by some of the world's leading authorities in this area.

The workshop was opened by José Carlos Maldonado, director of ICMC. Following that, José Alberto Cuminato, coordinator of the Center for Mathematical Sciences Applied to Industry (CeMEAI), and organizer of the workshop, introduced the first speaker, Barbara Keyfitz, Ohio State University, USA.

She spoke on applications of partial differential equations to shock waves in gas dynamics and to chromatography. Then, Vanderlei Bagnato, professor at the Institute of Physics of São Carlos (IFSC) and director of the USP Innovation Agency, presented some of the latest advances in Brazilian science and the contribution of University of São Paulo to them. Bagnato said that USP has managed to achieve a level of excellence in science research, but that this still is not enough. "We live in a time when doing research is not good enough. We need to do science with a thought to how this technological innovation can benefit the people and the country," he said.

Mario Primicerio, researcher at the University of Florence in Italy, spoke next. One of the leading experts in the field of industrial application of mathematics, Primicerio addressed the importance of mathematics in various aspects of chemistry. As an example he cited his research in the use of acids in marble cutting. He explained that, in chemical reactions, the use of mathematics is huge and that current techniques can measure accurately the quantities of elements used. "Basically this is a very old technique, used since the times of the Roman Empire. Currently, however, we know exactly the amount that will be used and what will result from it."

In the next lecture, Ernesto Birgin, from the Institute of Mathematics and Statistics (IME) USP, spoke about the development of optimization software. He highlighted the challenges involved in the development and maintenance of open source software. After lunch, the first speaker was Weldon Lodwick, from the University of Denver, Colorado, USA. In his presentation, he focused on how to bring real problems from industry to the attention of applied mathematicians and into educational institutions. "This is a technique for preparing graduate and postgraduate students from the area of applied mathematics to face real problems that they will encounter in the job market," he said.

The event continued with the presentation of Mario Gazziro, from the Department of Computer Science of ICMC-USP. He spoke about a project, Implantable Neural Interfaces, developed by ICMC in partnership with the University of South Florida, USA, IBM and other multinational institutions in Brazil. This research has the goal of developing a brain-computer interface using wireless biocompatible material. "The project allows a secure access to the human motor cortex. Results show how many electrodes can be implanted in the brain, with some level of security," he concluded.

Julio Stern, also from IME-USP, spoke about consulting for industry, and for commercial and financial enterprises. "It was a great challenge for me. The applied mathematics in these projects was interesting", he said, "Especially for financial markets, where Brazilian regulations differ quite substantially from other countries."

Following that, Guilherme Ferreira Martins, from the company Dynamis Applied Mechanics, spoke about the Rotary Kiln, a heavy rotary machine used in the mineral processing industry, especially in the manufacture of cement. "The heat input to the process is based on the combustion of various fuels. Therefore, within the rotary kiln one can identify many physical and chemical processes that can be modeled mathematically, and thus one can simulate the equipment under different operating conditions."

The event closed with another statement by Prof. Cuminato. He observed that the event exceeded expectations in all aspects, notably because, besides having presentations by renowned researchers from various fields, it had in addition the presence of professionals from industry. "We have tried to show that it is possible to solve practical problems with what we study." Cuminato also stressed aspects related to the political and administrative environment for research applied to industry in Brazil. Next year, he hopes to organize an event with workshops of longer duration and presentations for specific audiences from industry and academia.

More information: Center for Mathematical Sciences Applied to Industry www.cemeai.icmc.usp.br

ICIAM 2015: Call for Proposals of Thematic and Industrial Minisymposia

by Scientific Program Committee of ICIAM 2015

Dear colleagues:

The Scientific Program Committee (SPC) of ICIAM 2015 is now in the stage of identifying active and important areas in applied, industrial and computational mathematics, and selecting thematic and industrial minisymposia as well as possible candidates of the organizers of the minisymposia.
This is an open call for proposals of thematic and industrial minisymposia (and possible organizers) to be presented at the ICIAM 2015 in Beijing. Please send your proposals to the secretary of the SPC Miss Jie Zhang (jiezhang@math.tsinghua.edu.cn) and carbon copy (cc) to the Chairman of the SPC Prof. Zhi-Ming Ma (mazm@amt.ac.cn) before the end of September 2013.
The SPC will solicit and select thematic and industrial minisymposia from the proposals. The number of selected thematic and industrial minisymposia will depend on the situation (in ICIAM 2011 there were 17 thematic minisymposia and 3 industrial minisymposia).
In the next stage, the Organizing Committee will have a more general open call for proposals of contributed minisymposia. The proposals in this stage which are not in the list of selected ones may be considered as proposals in the next stage.

Workshop on Mathematics of Climate Change, Related Hazards and Risks

July 29–Aug 2nd, CIMAT, Guanajuato, Mexico. This workshop, which is organized as part of the global program

Mathematics of Planet Earth 2013

and as a satellite of the

2013 Mathematical Congress of the Americas

will bring together about 40 early career scientists, mainly from Central and Southern America, and nine distinguished scientists, each of whom will give several lectures on chosen topics. The workshop format will provide ample time for personal and group discussions and topical round tables to facilitate networking across the central themes of Natural Hazards research.
The workshop is sponsored by the International Mathematical Union, the International Union of Theoretical and Applied Mechanics, the International Union of Geodesy and Geophysics, the International Council for Industrial and Applied Mechanics, and by the Centro de Investigación en Matemáticas. Financial support has been obtained from The International Council of Science (ICSU) Regional Office for Latin America and the Caribbean, and two interdisciplinary bodies of ICSU, namely IRDR (Integrated Research on Disaster Risk) and WCRP (World Climate Research Programme), from the US National Academy of Sciences, from the Academia Mexicana de Ciencias, and from ICIAM in the form of ICIAM Fellowships. Organizers: José Antonio de la Peña (CIMAT), Christiane Rousseau (IMU), Susan Friedlander (IMU), Ilya Zaliapin (IUGG) and Paul F. Linden (IUTAM).
The website is now ready to receive applications at:

www.mca2013.org/en/programme/satelite-activities/workshop-on-mathematics-of-climate-change.html

The deadline for applications is April 30, 2013. Late applications will be considered as long as funding remains.

See poster on page 14 of this newsletter.

US National Research Council Issues Report on the Mathematical Sciences

The report "The Mathematical Sciences in 2025" was released by the National Academies Press in January 2013. This is the first National Academies study to take a broad look at the developments and trends across the breadth of the mathematical sciences. It was funded by the U.S. National Science Foundation (NSF). The study was organized by the Board of Mathematical Sciences and Their Applications (BMSA), the standing National Research Council (NRC) board for mathematics. The study committee was led by its Chair, Thomas E. Everhart (California Institute of Technology), and Vice Chair, Mark L. Green (University of California, Los Angeles). It also produced, with the help of writer Dana MacKenzie, the report "Fueling Innovation and Discovery: The Mathematical Sciences in the 21st Century", which was released by the National Academies Press in July 2012. This report presents to general readers some recent advances in the mathematical sciences and some advances enabled by mathematical sciences that were drawn from the study committee's assessment. These and other BMSA titles can be downloaded free at www.nap.edu/moretitles.php?org=BMSA

VII ITLA 2012

by Domingo A. Tarzia

On December 17–21, 2012, ASAMACI (Asociación Argentina de Matemática Aplicada, Computacional e Industrial) co-hosted, together with AR-SIAM (Argentinean Section of SIAM - Society for Industrial and Applied Mathematics, USA), SIMAI (Società Italiana di Matematica Applicata e Industriale - Italy) and the Department of Mathematics of FCE-Universidad Austral Rosario, the Seventh Italian - Latin American Conference on Industrial and Applied Mathematics (VII ITLA 2012), which was held in the city of Rosario, Santa Fe, Argentina.

ITLA-Rosario, December 17, 2012. —Image used with permission.

The VII ITLA 2012 Conference was sponsored by ANPCyT (National Agency for the Promotion of Science and Technology of Argentina), ICIAM (the International Council for Industrial and Applied Mathematics), the Secretary of Science and Technology (State of Santa Fe, Argentina) and the Italian Embassy in Buenos Aires. The financial support allowed partial sponsorship of 56 participants.

The ITLA series are periodic meetings which have been co-organized collaboratively by Latin American and Italian researchers since 1995, serving as a bridge for collaboration between European and Latin American researchers working in Applied Mathematics. Throughout its consecutive editions, ITLA has served as a strong platform for discussions and mutual collaboration in several new research areas in Industrial and Applied Mathematics. The previous editions of ITLA were held in Porto Alegre - Brazil (I ITLA, January 1995), Rome - Italy (II ITLA, January 1997), Río de Janeiro - Brazil (III ITLA - November 1999), Trujillo - Peru (III ITLA - December 2004), Florence - Italy (V ITLA - July 2007) and Quito - Ecuador (VI ITLA - September 2009). This is the first time that ITLA has been held in Argentina. This year's event was, once again, a big success. We were very excited to welcome a number of prominent mathematicians from different countries, including Argentina, Brazil, Chile, Colombia, Ecuador, Italy, Peru, Switzerland, the United Kingdom and the United States. In total, over a hundred researchers, academics, graduate students, senior undergraduate students, and post-doctoral fellows studying Applied Mathematics and other branches of Science attended the Conference, with eighty presentations: thirty-eight plenary lectures and forty-two contributed presentations, plus three short courses given by Mario Primicerio, Paolo Marcellini and Paolo Podio-Guidugli, all from Italy. The main areas addressed by ITLA include, although they are not limited to, Nonlinear Analysis and

Applications, Numerical Analysis, Biomathematics, Ordinary Differential Equations and Applications, Partial Differential Equations and Applications, Continuum Mechanics and Applications, Optimization, Optimal Control and Applications, and Inverse Problems and Applications.

The plenary lectures were given by Prof. Marco Calahorrano (Ecuador), Prof. Gabriel Cárcamo (Chile), Prof. José Carcione (Italy), Prof. Julio Ruiz Claeyssen (Brazil), Prof. José A. Cuminato (Brazil), Prof. Guillermo Durán (Argentina), Prof. Javier Etcheverry (Argentina), Prof. Analía Gastón (Argentina), Prof. Pablo Jacovkis (Argentina), Prof. Rolf Jeltsch (Switzerland), Prof. Barbara Lee Keyfitz (USA), Prof. Pablo Lotito (Argentina), Prof. María Cristina Maciel (Argentina), Prof. Paolo Marcellini (Italy), Prof. Elvira Mascolo (Italy), Prof. José Luis Menaldi (USA), Prof. Fabio Milner (USA), Prof. Jaime Ortega (Chile), Prof. Paolo Podio-Guidugli (Italy), Prof. Giovanni Porru (Italy), Prof. Sergio Preidikman (Argentina), Prof. Mario Primicerio (Italy), Prof. Héctor Ramirez-Cabrera (Chile), Prof. Juan C. Reginato (Argentina), Prof. Fabio Rosso (Italy), Prof. Diana Rubio (Argentina), Prof. Obidio Rubio (Peru), Prof. Juan Santos (Argentina), Prof. Andrey Sarychev (Italy), Prof. Eduardo Serrano (Argentina), Prof. Geraldo Nunes Silva (Brazil), Prof. Rubén D. Spies (Argentina), Prof. Domingo A. Tarzia (Argentina), Prof. Cristina V. Turner (Argentina), Prof. Stella Vernier Piro (Italy), Prof. Vincenzo Vespri (Italy) and Prof. Adrian Will (Argentina).

The organizers are confident that, once again, ITLA has provided a rich ground for the discussion and enhancement of Applied Mathematics and for the promotion of Applied Mathematics in Science, Engineering, Computational Science, Industry and Technology, in the whole Latin American region.

Finally, we find it important to point out that during this Conference, the first steps were taken towards the creation of CLAMAI (the Latin America Committee for Industrial and Applied Mathematics) and the organization of the First Latin America Congress on Industrial and Applied Mathematics, in Asuncion, Paraguay in early November 2014.

Domingo A. Tarzia received his PhD (1979) and Habilitation (1991) in Mathematics from Pierre et Marie Curie University (Univ. Paris VI, France). He also holds a Magister in Finance from Rosario University (Argentina), 2010. He has been a research director at CONICET since 1983 and since 1991 has worked at Austral University (Rosario, Argentina) where he is the chair of the Mathematics Department. His research interests include the study of free boundary problems for the heat equation, especially by variational inequalities and integral equations, and particularly by obtaining explicit solutions; and optimal control problems for PDE. He is the president of ASAMACI (Asociación Argentina de Matemática Aplicada, Computacional e Industrial) and vice-president of AR-SIAM (Argentinean Section of SIAM).

2015 CIMPA Research Schools Call for Projects

The aim of the International Centre for Pure and Applied Mathematics (CIMPA) is to promote international cooperation in higher education and research in mathematics and their interactions, as well as related subjects, for the benefit of developing countries. Our action concentrates at the places where mathematics emerges and develops, and where a research project is possible.
CIMPA is a UNESCO centre based in Nice, financed by France, Switzerland, Norway and Spain, counting with the support of the University of Nice Sophia-Antipolis.
We organize research schools of about two weeks in developing countries. The purpose of these schools is to contribute to the research training of the new generation of mathematicians, women and men.
The Scientific Council and the Steering Council of CIMPA evaluate the projects and select the best and most appropriate. The research schools are organized locally with the help of CIMPA. CIMPA's financial contribution is essentially for young mathematicians from neighbouring countries to be able to attend the research school. CIMPA can help with obtaining funds from other sources. Additional and essential information can be found in the roadmap (available on the web site of CIMPA). You can also write to CIMPA for further information.

Research schools call for projects begins on **March 1st, 2013**. The application form is available on the CIMPA website

www.cimpa-icpam.org/spip.php?article154

and you may also write to mailto:cimpa@unice.fr. The deadline for a (non-mandatory) pre-proposal is **June 15, 2013**. The complete proposal is due **October 1, 2013**. Proposals related to applications of mathematics are especially welcome.

Educational Interfaces between Mathematics and Industry (EIMI): the 20th ICMI Study book to appear in 2013

by Alain Damlamian, José-Francisco Rodrigues and Rudolf Strässer

At the ICIAM Congress in Zurich (July 17–20, 2007), the President of the Portuguese National Committee of Mathematics (CNM) made a formal proposal to the ICIAM Board for a new ICMI Study titled "Educational Interfaces between Mathematics and Industry". He had already approached ICMI regarding it and hoped for joint support. The ICIAM Board accepted the proposal enthusiastically. This was how the ICMI-Study 20 started.

Several other people and institutions felt the need for such a Study, in particular, as a consequence of a recent OECD report on Mathematics and Industry. So, ICMI nominated Rudolf Sträßer as co-chair while ICIAM proposed Alain Damlamian. José Francisco Rodrigues joined the team as organiser of the Study Conference.

This was the beginning of a very interesting adventure. It started with meetings of the International Programme Committee in Óbidos, sponsored by the Centro Internacional de Matemática (CIM) (in October 2008, to draft the Discussion Document for the Study) and in Paris (in November 2009, to plan the Study Conference). The Study Conference itself, originally planned in Lisbon in late April 2010, had to be postponed to October 2010 because of the serious travel disruptions provoked by the Icelandic volcano eruption. There was also a follow-up conference in Macau (in November 2011). The contributions to the Study Conference are freely available at www.cim.pt/files/proceedings_eimi_2010.pdf

These were the main steps in the EIMI-ICMI study, followed by the writing of the final report which is to appear this year as a book with Springer, like other ICMI studies.

The book contains the text of five plenary sessions, the report of the six Working Groups (on Education/training with industry participation, University & academic technical/vocational education, Education in Schools, Mathematics-Industry Communication, Technology issues, and The mathematics-industry interface). It also includes more than thirty papers on various aspects of the subject.

A concluding report in the Study Book identifies major results and open questions related to the industrial and societal use of mathematics. The main issues are the understanding of mathematics, the difficulties of communication between different communities like the workplace and education, differences in time lines, goals, and ways to learn, the roles of boundary objects and black boxes within the interaction in and between these communities, and the role of modelling activities in the educational interfaces between mathematics and industry.

Most interesting, perhaps, is the experiment in communications which this study has also been, since it brought together two communities which are quite distinct and which each has its own language. At the level of the editors of the book, it was very successful. It is our hope that this report will also be helpful to establish long lasting connections between these two communities.

José Francisco Rodrigues is professor of mathematics at the University of Lisbon, Portugal. His research is on Nonlinear Partial Differential Equations and Free Boundary Problems, but he also has other interests in Communication of Mathematics. He was the President of the National Portuguese Mathematical Committee at the IMU (2002–2010) and the Director of the Centro Internacional de Matemática from 2008–2011.

Rudolf Sträßer is now professor emeritus of Giessen University, where he taught and researched Didactics of Mathematics (Mathematics Education). Before, he has been professor in Lulea, Klagenfurt and Kassel. His research is focussed on technology use in Mathematics (especially: Geometry) teaching/learning and Mathematics and its use in vocational, industrial contexts.

Alain Damlamian is professor emeritus at the University of Paris East (UPEC). He previously held positions at the Université Paris-Sud and the Université Pierre et Marie Curie. His research is on Nonlinear Analysis and Partial Differential Equations, concentrating most recently on Homogenization theory. He was Secretary of ICIAM from 1999 to 2007.

News from SEMA–SeMA Journal

by Sergio Amat

We have the pleasure to let you know that an agreement has been signed recently and, starting in January 2013, our journal will be published by Springer. The full journal title is *SeMA Journal*.

This journal is sponsored by our society. Its main aim is to publish papers containing high level achievements in applied mathematics, understood in a broad sense. In this respect, theoretical as well as numerical results, and also their practical applications, are welcome. There are mainly three kinds of papers in this journal: first, papers containing original results; then, review papers, where specialists are invited to present their own work in a pedagogical style; finally, papers directly related to applications in Industry, Finance and other Sciences. All papers are reviewed by (one or two) anonymous referees before publication. There is also a member of the Editorial Board in charge (hence, for each submission, the minimal number of specialized referees is two).

In some sense, this is a singular journal in applied mathematics, since it provides information on a very wide variety of mathematical subjects, techniques and results without forgetting the applications that can be found below and taking care of the presentation. In accordance with the objectives of SeMA, the style of the journal is designed to make it useful to all kinds of people concerned with applied mathematics.

The current composition of the Editorial Board can be found on the web page of the SeMA journal: www.springer.com/mathematics/journal/40324 The web page of SEMA is www.sema.org.es/web/index.php

Sergio Amat is professor of Applied Mathematics at "Univ. Politecnica de Cartagena", Spain. and he is a member of the Executive Committee of Spanish Society of Applied Mathematics (SeMA) from 1998. In addition he belongs to the Editorial Board of SeMA Journal. His research interest is Numerical Analysis.

Preparation for ICIAM2015 Progressing Smoothly

The Eighth International Congress of Industrial and Applied Mathematics (ICIAM2015) will take place from August 10–14, 2015 in Beijing, China. It is expected that over 3000 industrial and applied mathematicians will gather together to report recent progresses, to witness the announcements of important prizes, and to explore the future directions of industrial and applied mathematics.

The program of ICIAM2015 includes prize lectures, invited lectures, thematic minisymposia, industrial minisymposia, contributed minisymposia, poster sessions, embedded and satellite meetings, public outreach sessions, and exhibits. During the Congress, social and tourism activities will also be organized.

ICIAM2015 will be held in the China National Convention Center (CNCC) located in Beijing's Olympic Green, adjacent to the main stadium of the 2008 Beijing Olympic Games—the National Stadium (Bird's Nest). To expand the Congress' influence, main information of the Congress and invited lectures will be collected in the post-conference proceedings. Springer will publish an issue of Intelligencer to introduce industrial and applied mathematics in China as well as local information about Beijing, which will be given to all participants of the Congress.

Up to now, the preparation work for ICIAM2015 is progressing smoothly. The Scientific Program Committee (SPC) led by Zhiming Ma has been working hard since early 2012, and will determine a preliminary list of invited speakers of ICIAM2015 in April 2013. The Organizing Committee, led by Congress Director Lei Guo, consists of nine sub-committees including Academic, Exhibition, Finance, Fundraising, ICIAM Liaison, Industry and Promotion, Local Arrangements, Publication and Publicity, which have begun to work and made significant progress.

The Chinese mathematical community has joined forces to support the organization of ICIAM 2015. The Congress is mainly organized by the China Society for Industrial and Applied Mathematics (CSIAM), and co-organized by the Chinese Mathematical Society (CMS), the Operations Research Society of China (ORSC), the Chinese Computational Mathematical Society (CCMS), and the Chinese Association for Applied

Statistics (CAAS). The National Natural Science Foundation of China has provided partial financial support for the organization of the Congress. The National Center for Mathematics and Interdisciplinary Sciences, where the Congress secretariat is located, has also provided partial financial and manpower support for the organization of the Congress.

ICIAM2015 has received support from academic societies of other countries and SIAM has decided to cancel its 2015 annual meeting to support the organization of ICIAM2015 with East Asian SIAM expressing its intention to hold its 2015 annual meeting as a satellite meeting of ICIAM2015. The Association for Women in Mathematics (AWM) will have its Kovalevsky Lecture delivered at ICIAM2015.

It is expected that with joint efforts, the Eighth International Congress on Industrial and Applied Mathematics will be successfully organized. www.iciam2015.cn

Call for nominations for ICIAM Prizes for 2015

by ICIAM Prize Committee

The ICIAM Prize Committee for 2015 calls for nominations for the five ICIAM Prizes to be awarded in 2015. Each ICIAM Prize has its own special character, but each one is truly international in character. Nominations are therefore welcomed from every part of the world. A nomination should take into account the specifications for a particular prize (see www.iciam.org/council/PrizeDescriptions.pdf), and should contain the following information:

- Full name and address of person nominated;
- Web home page if any;
- Name of particular ICIAM Prize;
- Proposed citation (concise statement about the outstanding contribution in fewer than 250 words);
- Justification for nomination (cite nominator's reason for considering candidate to be deserving, including explanations of the scientific and practical influence of the candidate's work and publications);
- CV of the nominee;
- Name and contact details of the proposer.

The deadline for nominations is 31 October 2013. Nominations should be sent to the President of ICIAM, Barbara Keyfitz, preferably in electronic form. Nominations will be acknowledged.

ICIAM Prize committee:
Committee chair: Barbara Keyfitz; Donatella Marini (chair of Collatz Prize Subcommittee) Felix Otto (chair of Lagrange Prize Subcommittee) Pam Cook (chair of Maxwell Prize Subcommittee) Takashi Kako (chair of Pioneer Prize Subcommittee) Philippe Ciarlet (chair of Su Buchin Prize Subcommittee)

ICIAM, the International Council for Industrial and Applied Mathematics, is the world organization for applied mathematics and computational science. Its members are mathematical sciences societies based in more than 20 countries. For more information, see the Council's web page at www.iciam.org.

Barbara Lee Keyfitz
President of ICIAM

ICIAM's Officers

by Barbara Lee Keyfitz

ICIAM, by statute, has a President, a Secretary and a Treasurer. At any time, it has either a President-Elect or a Past-President, and it can have up to two Officers-at-Large. Collectively, the officers act as a sort of executive committee for ICIAM. While all policy decisions are made by the Board at its annual meeting, many day-to-day decisions are made by the officers, and the board has delegated a certain amount of business to the officers. Some of ICIAM's work is carried out almost entirely by the President and other officers. For example, setting up the prize committees and the Olga Taussky-Todd Lecture committee is the task of the President, as is oversight of preparations for the next ICIAM Congress. Carrying out site visits for prospective congresses is one duty of the officers. Recently, the Board has delegated to the officers the decision for how to spend the money allotted to help applied mathematicians in developing countries to attend conferences. Administering these grants, which involves authorizing payment, explaining the rules, and collecting reports on the activity, falls to the Secretary. Collecting dues, authorizing expenditures, and communicating with the SIAM office that manages ICIAM's funds, is done by

the Treasurer. Because ICIAM's budget does not support any paid staff, the Secretary is the keeper of records—note-taker, scribe, and distributor of communications to officers and to the Board.

Other tasks for which the officers have taken responsibility include preparing applications for membership to take to the Board; we have a membership committee chaired by one of the Members-at-Large. Some of ICIAM's activities are almost invisible until one becomes an officer. Who knew, for example, that the domain name, iciam.org, needed to be monitored and renewed annually? The ICIAM website is capably maintained by a webmaster, who until last year was a volunteer but is now paid a nominal consulting fee. Some of our duties are in transition: At the moment, the officers collectively act as an editorial board for the new newsletter, but we expect the Board to nominate an Editorial Board shortly. In a similar vein, for ICIAM to realize the potential of our membership in ICSU, we will recommend a committee dedicated to that activity.

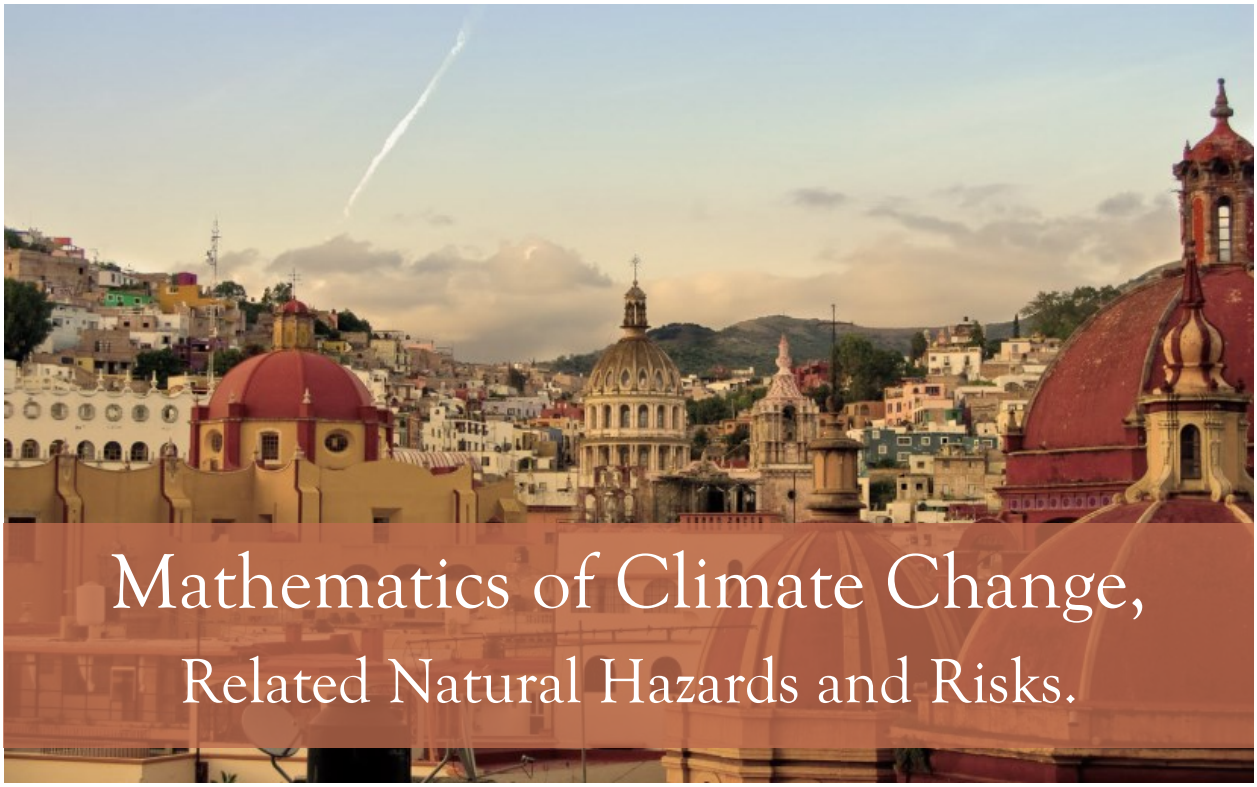
Barbara Keyfitz, the current President; Alistair Fitt, the Secretary; Rolf Jeltsch, Past-President, and, on the right, Mario Primicerio, Member-at-Large. —Image used with permission.

Most of the officers' work is carried out by e-mail, but there is always one face-to-face meeting between the Board meetings. This year, a subset of the officers met in South America in December, in connection with one of the site visits. The full officers' meeting was held in Zurich in March, with five of the six officers attending in person, and the sixth joined by video-conference, using the facilities of ETH. In addition, we had a SKYPE meeting in November. As we are scattered over six countries on four continents, we are seldom all awake at the same time, but by the same token as a group we are never asleep.

Barbara Keyfitz, the current President; Alistair Fitt, the Secretary; Rolf Jeltsch, Past-President, and, on the right, Tom Mitsui, Member-at-Large. —Image used with permission.

Over time, ICIAM has benefited from an outstanding collection of talented, dedicated and loyal officers. The current officers are pictured in these photographs. The first two show me, Barbara Keyfitz, the current President; Alistair Fitt, the Secretary; Rolf Jeltsch, Past-President, and, on the right, Mario Primicerio, Member-at-Large (first picture), and Tom Mitsui, Member-at-Large (second picture). These were taken at our Officers Meeting in Zurich—as we were meeting on a weekend, there was no outside person to take the picture. In the third picture is Jose Alberto Cuminato, the Treasurer, who attended the meeting by computer, as shown.

Jose Alberto Cuminato attending by computer. —Image used with permission.



Mathematics of Climate Change,
Related Natural Hazards and Risks.

Centro de Investigación en Matemáticas (CIMAT)
Guanajuato, Mexico
July 29 – August 2, 2013

Invited Speakers

• **Graciela Canziani**	Universidad Nacional del Centro de la Provincia de Buenos Aires, Argentina
• **Susan Cutter**	University of South Carolina, USA
• **Oscar Velasco Fuentes**	Centro de Investigación Científica y de Educación Superior de Ensenada, Baja California, México
• **Michael Ghil**	École Normale Supérieure, Paris, France
• **Eugenia Kalnay**	University of Maryland, College Park, USA
• **Carlos R. Mechoso**	University of California Los Angeles, USA
• **George Philander**	Princeton University, USA
• **Bala Rajaratnam**	Stanford University, USA
• **Eli Tziperman**	Harvard University, USA

ICSU

Applications to participate are welcome. Details can be found at www.mca2013.org

Partial support is available for selected early career researchers.

ICIAM CIMAT MCA2013 MPE2013 IMU IUGG IUTAM

About ICIAM

The International Council for Industrial and Applied Mathematics (ICIAM) is a worldwide organisation for professional applied mathematics societies. Its members are national and regional societies dedicated to applied and industrial mathematics, and other societies with a significant interest in industrial or applied mathematics.

The Council works

- to promote industrial and applied mathematics globally;
- to promote interactions between member societies;
- to promote the goals of these member societies;

and to coordinate planning for the ICIAM Congresses, held every four years, on industrial and applied mathematics.

ICIAM is governed by a Board comprising representatives of its member societies. Programs run by ICIAM, and the bylaws of the organization, can be found on the ICIAM web page, www.iciam.org.

The Full Members and their representatives
ANZIAM (Australia and New Zealand Industrial and Applied Mathematics): Ian H. Sloan
ASAMACI (Asociación Argentina de Matemática Aplicada Computacional e Industrial): Eduardo Adrián Santillan Marcus
CAIMS-SCMAI (Canadian Applied and Industrial Mathematics Society, Société Canadienne de Mathématiques Appliquées et Industrielles): Ian Frigaard
CSCM (Chinese Society for Computational Mathematics): Zhiming Chen
CSIAM (China Society for Industrial and Applied Mathematics): Li Daqian (Li Ta-tsien) and Ya-xiang Yuan
ECMI (European Consortium for Mathematics in Industry): Michael Günther
ESMTB (European Society for Mathematical and Theoretical Biology): Vincenzo Capasso
IMA (Institute of Mathematics and its Applications): Iain S. Duff and David Abrahams
ISIAM (Indian Society of Industrial and Applied Mathematics): Abul Hasan Siddiqi and Pammy Manchanda
GAMM (Gesellschaft für Angewandte Mathematik und Mechanik): Volker Mehrmann and Stefan Müller
JSIAM (Japan Society for Industrial and Applied Mathematics): Shin'ichi Oishi and Hiroshi Kokubu
KSIAM (Korean Society for Industrial and Applied Mathematics): Chang Ock Lee
MOS (Mathematical Optimization Society (formerly Mathematical Programming Society)): Philippe Toint
NORTIM (Nordiska föreningen för Tillämpad och Industriell Mathematik): Helge Holden
ROMAI (Societatea Română de Matematică Aplicată și Industrială): Costica Morosanu
SBMAC (Sociedade Brasiliera de Matemática Aplicada e Computacional): Helena J. Nussenzveig Lopes
SEMA (Sociedad Española de Matematica Aplicada): Luis Vega González
SIAM (Society for Industrial and Applied Mathematics): Sven Leyffer and Nick Trefethen
SIMAI (Società Italiana di Matematica Applicata e Industriale): Alessandro Speranza and Nicola Bellomo
SMAI (Société de Mathématiques Appliquées et Industrielles): Maria J. Esteban and Alain Damlamian
SPMAC (Sociedad Peruana de Matemática Aplicada y Computacional): Obidio Rubio Mercedes
VSAM (Vietnamese Society for Applications of Mathematics): Lê Hùng Són

The Associate Members and their representatives
AMS (American Mathematical Society): Don McClure
AWM (Association for Women in Mathematics): Jill Pipher
ChinaMS (Chinese Mathematical Society): Zhi Ming Ma
CMS-SMC (Canadian Mathematical Society, Société Canadienne de Mathématiques): Elena Braverman
EMS (European Mathematical Society): Franco Brezzi
IMS (Institute of Mathematical Statistics): Hans Rudolf Künsch
IMU (Israel Mathematical Union): Edriss S. Titi
LMS (London Mathematical Society): Stephen Huggett
MSJ (Mathematical Society of Japan): Yoichi Miyaoka
ÖMG (Österreichische Mathematische Gesellschaft): Alexander Ostermann
PTM (Polskie Towarzystwo Matematyczne (Polish Mathematical Society)): Łukasz Stettner
SingMS (Singapore Mathematical Society): Weizhu Bao
SMF (Société Mathématique de France): Bernard Helffer
SMG (Schweizerische Mathematische Gesellschaft - Société Mathématique Suisse - Swiss Mathematical Society): Jean-Paul Berrut

The current officers of ICIAM
President: Barbara Lee Keyfitz, USA
Past-President: Rolf Jeltsch, Switzerland
Secretary: Alistair Fitt, UK
Treasurer: Jose Alberto Cuminato, Brazil
Members-at-Large: Mario Primicerio, Italy and Taketomo (Tom) Mitsui, Japan

ICIAM 2015

ICIAM 2015 program:

- Awarding ceremony of ICIAM prizes
- Award lectures of ICIAM, SIAM, AWM
- Invited lectures
- Thematic minisymposia
- Industrial minisymposia
- Contributed minisymposia
- Contributed papers
- Poster sessions
- Embedded and satellite meetings
- Public outreach sessions
- Exhibits
- Social events

August 10-14, 2015, Beijing, China

http://www.iciam2015.cn/