
Mathematics Calendar

Please submit conference information for the Mathematics Calendar through the Mathematics Calendar submission form at <http://www.ams.org/cgi-bin/mathcal-submit.pl>. The most comprehensive and up-to-date Mathematics Calendar information is available on the AMS website at <http://www.ams.org/mathcal/>.

April 2009

* 2-4 **IMA Special Workshop: Career Options for Women in Mathematical Sciences**, Institute for Mathematics and its Applications (IMA), University of Minnesota, Minneapolis, Minnesota.

Description: This workshop aims to familiarize women in the mathematical sciences with professional opportunities in industry and government labs and to help them thrive in these fields. There will also be a special session to discuss principles of negotiation, developing "best alternatives to a negotiated agreement", and understanding your negotiating style. Case practices, particularly job interview scenarios will be used to illustrate the principles presented in the workshop. The audience is graduate students and Ph.D.'s in the early stages of their post-graduate careers. Researchers at any stage of their careers will also find it valuable. Speakers, panelists, and discussion leaders are women in research and management positions in industry and government labs as well as women in academia who have strong ties with industry. Participants are encouraged to present a poster on their research. Sponsored by the at the University of Minnesota and the Association for Women in Mathematics (AWM).

Information: <http://www.ima.umn.edu/2008-2009/SW4.2-4.09/>.

* 8-12 **Polynomial Computer Algebra '2009**, The Euler International Mathematical Institute, St. Petersburg, Russia.

Description: The Conference will be devoted to modern polynomial algorithms in computer algebra which are gaining importance in

various applications of science as well as in fundamental researches. The following topics are in the scope of the Conference: Groebner bases, Combinatorics of monomial orderings, Differential bases, Involutive algorithms, Computational algebraic geometry, D-modules, Polynomial differential operators, Parallelization of algorithms, Quantum computing, Cryptography, Tropical manifolds, Matrix algorithms, Complexity of algorithms and others.

Information: <http://www.pdmi.ras.ru/EIMI/2009/pca/>.

* 27-May 2 **Master-class in Geometry (Surface group representations, hyperbolic geometry, and Teichmüller theory)**, Institut de Recherche Mathématique Avancée, University of Strasbourg, France.

Description: The master-class consists of 5 courses of 5 hours each, given by Vladimir Fock, Frank Herrlich, Juïen Marché, Sergei Matveev, and Carlo Petronio. The subject is geometry and topology in low dimensions, with particular attention given to surface group representations, hyperbolic geometry, and Teichmüller theory. The master-class is addressed to graduate students and [D]researchers in Geometry and topology. In addition to the courses, there will be a series of survey talks on geometry and topology in low-dimensions. Graduate students are welcome. Registration is required, and it is free of charge. It can be done through through the URL link. Room reservation can be asked through the same link.

Information: <http://www-irma.u-strasbg.fr/article770.html>.

This section contains announcements of meetings and conferences of interest to some segment of the mathematical public, including ad hoc, local, or regional meetings, and meetings and symposia devoted to specialized topics, as well as announcements of regularly scheduled meetings of national or international mathematical organizations. A complete list of meetings of the Society can be found on the last page of each issue.

An announcement will be published in the *Notices* if it contains a call for papers and specifies the place, date, subject (when applicable), and the speakers; a second announcement will be published only if there are changes or necessary additional information. Once an announcement has appeared, the event will be briefly noted in every third issue until it has been held and a reference will be given in parentheses to the month, year, and page of the issue in which the complete information appeared. Asterisks (*) mark those announcements containing new or revised information.

In general, announcements of meetings and conferences carry only the date, title of meeting, place of meeting, names of speakers (or sometimes a general statement on the program), deadlines for abstracts or contributed papers, and source of further information. If there is any application deadline with respect to participation in the meeting, this fact should be noted. All communications on meetings and conferences

in the mathematical sciences should be sent to the Editor of the *Notices* in care of the American Mathematical Society in Providence or electronically to notices@ams.org or mathcal@ams.org.

In order to allow participants to arrange their travel plans, organizers of meetings are urged to submit information for these listings early enough to allow them to appear in more than one issue of the *Notices* prior to the meeting in question. To achieve this, listings should be received in Providence **eight months** prior to the scheduled date of the meeting.

The complete listing of the Mathematics Calendar will be published only in the September issue of the *Notices*. The March, June/July, and December issues will include, along with new announcements, references to any previously announced meetings and conferences occurring within the twelve-month period following the month of those issues. New information about meetings and conferences that will occur later than the twelve-month period will be announced once in full and will not be repeated until the date of the conference or meeting falls within the twelve-month period.

The Mathematics Calendar, as well as Meetings and Conferences of the AMS, is now available electronically through the AMS website on the World Wide Web. To access the AMS website, use the URL: <http://www.ams.org/>.

* 29–May 1 **Simons Lectures in Mathematics**, Massachusetts Institute of Technology (MIT), Cambridge, Massachusetts.

Lecturer: Étienne Ghys (CNRS-École Normale Supérieure de Lyon) will give 3 lectures on “Dynamics in Dimension 3”: Asymptotic invariants for flows, Right-handed vector fields, and The Rademacher function. Lectures at 4:30 p.m., each preceded by a reception at 4:00 p.m.

May 2009

* 4–6 **Simons Lectures in Mathematics**, Massachusetts Institute of Technology (MIT), Cambridge, Massachusetts.

Lecturer: Robert Schapire (Princeton University) will give 3 lectures on “The Boosting Approach to Machine Learning: Foundations, Perspectives, Applications” (The AdaBoost algorithm its analysis; Boosting and how to play repeated games; and Boosting, optimization and maximum entropy). Lectures at 4:30 p.m., each preceded by a reception at 4:00 p.m.

* 14–16 **Variational and Topological Methods and Water Waves**, University of Bath, Bath, United Kingdom.

Description: This workshop addresses nonlinear aspects of PDE theory using variational and topological methods. While there are manifold applications of these modern analytical tools, the topic of water waves will provide a focus, and present an opportunity for mathematicians with a variety of backgrounds, including nonlinear functional analysis, topological degree theory, bifurcation theory, and Hamiltonian systems, to meet and review developments. Participants at all levels are welcome, including research students.

Speakers: Boris Buoni (Lausanne), Walter Craig (Hamilton), Norman Dancer (Sydney), Gerard Iooss (Nice), Bryce McLeod (Oxford), Louis Nirenberg (New York), Pavel Plotnikov (Novosibirsk), Eugene Shargorodsky (London), Paul Rabinowitz (Madison), Charles Stuart (Lausanne), Neil Trudinger (Canberra), David Williams (Swansea). This is an EPSRC-funded workshop celebrating the 60th birthday of John Toland.

Information: <http://www.bath.ac.uk/math-sci/events/waves2009>.

* 18–21 **Mathematical Modeling in the Medical Sciences, in conjunction with the 24th Annual Shanks Lecture**, Department of Mathematics, Vanderbilt University, Nashville, Tennessee.

Description: Biomathematics encompasses the application of mathematical methods to the study of living organisms. Mathematics plays an essential role in understanding biological systems on many different scales of both size and time. For example, we can model biological processes at various scales: (1) molecular, sub-cellular, cellular, tissue, organism, and population; and (2) milliseconds, seconds, minutes, hours, days, and years. Mathematics has a rich history as a tool for biologists. More recently, mathematics has found applications in the medical sciences, both in the basic sciences of medicine and in patient care. The 24th Shanks Conference is a forum for all areas of biomathematics, but speakers have been invited from the special interest areas: Models of cancer growth; models of epidemics and infection; models of physiologic systems and clinical practice; and medical imaging. The featured Shanks Lecturer is Nicola Bellomo of Politecnico Torino.

Information: <http://www.math.vanderbilt.edu/~shanks2009>.

* 18–22 **IMA Workshop: Molecular Simulations: Algorithms, Analysis, and Applications**, Institute for Mathematics and its Applications (IMA), University of Minnesota, Minneapolis, Minnesota.

Description: This workshop will bring together mathematicians, chemists, physicists, biologists and researchers from other disciplines whose work pertains to statistical mechanics and molecular dynamics used in simulations of biomolecular, chemical, and liquid or solid state systems. We will consider key aspects of molecular simulations: numerical algorithms, mathematical analysis and applications—paying special attention to problems that call for new methodologies or mathematics. Relevant topics include sampling methods, methods

for free energy calculation, reaction pathways and reaction rates, long-time integration, geometric integrators, trajectory analysis, stochastic and Monte Carlo methods, and Car-Parrinello dynamics. Numerical methodologies, mathematical theory, and applications will be discussed.

Information: <http://www.ima.umn.edu/2008-2009/W5.18-22.09/>.

* 23–26 **IMST 2009/FIM 17**, University of West Bohemia, Plzen, Czech Republic.

Description: Department of Mathematics, University of West Bohemia will be hosting the 17th annual conference of the Forum for Interdisciplinary Mathematics (FIM) titled “International Conference on Interdisciplinary Mathematical & Statistical Techniques”. Earlier recent conferences have been held in Australia, China, Portugal, India, and various universities in the USA. The academic activities of the conference will primarily focus on the following areas of mathematical and statistical sciences: combinatorics and graph theory, functional analysis, differential equations, Bayesian statistics, bioinformatics, biostatistics, design and analysis of experiments, and multivariate analysis. However, presentations in other areas of mathematical and statistical sciences are also welcome. Special section devoted to undergraduates is planned.

Information: <http://www.kma.zcu.cz/IMST2009>.

* 24–25 **The Second Graduate Research Conference in Algebra and Representation Theory**, Kansas State University, Manhattan, Kansas.

Description: Graduate students are invited to participate in The Second Graduate Research Conference in Algebra and Representation Theory. The conference will feature two invited lectures given by the world renowned experts: Alexandre Kirillov (University of Pennsylvania); York Sommerhauser (University of South Alabama). We expect to provide partial support for travel and accommodation. Detailed information about support, speakers, and participants will be announced soon on the conference homepage. Women and minorities are especially encouraged to apply for participation.

Information: http://www.math.ksu.edu/main/events/grad_conf_2009.

* 25–27 **Young Scientists Conference: Actual Problems of Mechanics and Mathematics in memory of academician Ya. S. Pidstryhach**, Pidstryhach Institute for Applied Problems of Mechanics and Mathematics, Lviv, Ukraine.

Description: The objective of the conference is to provide a forum of distinguished and young researchers, who are involved in applied mathematics and mechanics in order to stimulate the development of young scientists and to increase their level by means of live communication, listening to lectures of senior colleagues, and presenting their own results. The scientific program will consist of plenary sessions featuring invited lectures by distinguished speakers and sectional sessions with oral presentation of the contributed papers mainly by young scientists.

Information: <http://www.iapmm.lviv.ua/chyt2009>.

* 25–29 **Conference on Topological Field Theory**, Northwestern University, Evanston, Illinois.

Description: There will be a workshop intended primarily for graduate students and others new to the field during the preceding week. The speaker list is on the conference web site and will be updated there. The organizers are Kevin Costello, Ezra Getzler, and Paul Goerss. Both the conference and the workshop will be supported by the National Science Foundation and Northwestern University. If you’d like support, please contact the organizers by February 20, 2009. Priority will go to those who respond early.

Information: <http://www.math.northwestern.edu/~pgoerss/tftemphasis/>.

* 25–29 **Eigenvalue and Saturation Problems for Reductive Groups**, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina.

Description: There were be survey talks (morning sessions) and research talks (afternoons) to consider recent advances in the eigenvalue and saturation problems for reductive groups and its relations to invariant theory and combinatorics; generalizations of the Horn and saturation conjectures; quiver theory and generalized theta functions on algebraic curves.

Speakers: P. Belkale, M. Kapovich, S. Kumar, K. Purbhoo, N. Ressayre, T. Abe, A. Boysal, C. Chindris, T. Haines, L. Mihalcea, J. Millson, R. Sjamaar.

Conference Support: The conference is supported through the FRG project 0554247 from the NSF. There will be some funds available for graduate students and post docs. To ask for support, send your request along with your vitae to the conference secretary Lee Trimble (trimble@email.unc.edu).

* 27–29 **Dynamical System Modeling and Stability Investigation**, The Department of Complex System Modeling, Faculty of Cybernetics, Kyiv Taras Shevchenko National University, Kyiv, Ukraine.

Description: 1. Mathematical methods of system investigation 2. Mathematical modeling of processes 3. Modeling and investigation of processes in mechanics 4. Mathematical methods of control and optimization 5. Logic-mathematical methods of modeling.

Information: <http://dsmsi.univ.kiev.ua>.

* 27–31 **Fields Institute Workshop on Geometry Related to the Langlands Programme**, University of Ottawa, Ottawa, Canada.

Description: The theme of this workshop is the exploration of some of the geometric ideas appearing in recent advances in the Langlands programme, with an emphasis on results which apply to both function fields and number fields. The workshop begins with three mini-courses, aimed towards advanced graduate students and non-specialists: on perverse sheaves and character sheaves (by Anne-Marie Aubert, CNRS), on the Jacquet-Langlands correspondence (by Ioan Badulescu, Montpellier II), and on recent successful approaches to the Fundamental Lemma (by Pierre-Henri Chaudouard, CNRS). The workshop will conclude with a two-day conference, featuring research talks picking up on the themes of the mini-courses.

Information: <http://www.fields.utoronto.ca/programs/scientific/08-09/Langlands/>.

June 2009

* 1–5 **i-MATH School on Derived Algebraic Geometry**, University Institute for Fundamental Physics and Mathematics (IUFFyM), University of Salamanca, Spain.

Description: The workshop is devoted to a brand new geometry which includes aspects of the traditional algebraic geometry of schemes and stacks, higher homotopy theory, and derived and infinity categories. Important applications of derived algebraic geometry to intersection theory and integral functors will be also considered, keeping an eye on their influence in string theory.

Information: <http://mukai.fis.usal.es/~ruiperez/Workshop09/Welcome.html>.

* 1–October 31 **i-MATH Trimester on Derived Algebraic Geometry**, University Institute for Fundamental Physics and Mathematics (IUFFyM), University of Salamanca, Spain.

Description: This is a special trimester (June to October 2009) devoted to Derived Algebraic Geometry, applications and related fields, which will take place in the University Institute for Fundamental Physics and Mathematics, IUFFyM (University of Salamanca). Among the activities, there will be visits (one week to one month) of researchers in the field and a School (June 1–5).

Information: http://mukai.fis.usal.es/~ruiperez/Workshop09/i-MATH_Trimester_on_DGA.html.

* 8–12 **Recursion structures in topological string theory and enumerative geometry**, American Institute of Mathematics, Palo Alto, California.

Description: This workshop, sponsored by AIM and the NSF, will be devoted to the study of a newly discovered recursion structure in topological string theory and its applications to Gromov-Witten theory and enumerative geometry.

Information: <http://www.aimath.org/ARCC/workshops/recursionstruct.html>.

* 8–13 **Disordered Systems: Spin Glasses**, Centre de recherches mathématiques, Université de Montréal, Pavillon André-Aisenstadt, 2920, Chemin de la tour, 5th floor, Montréal, Québec, H3T 1J4, Canada.

Description: The modelling and mathematical analysis of disordered spin systems has proven to be among the most fascinating fields of statistical mechanics over the last 25 years. A fundamental difficulty in these models is the extremely complicated many-valley structure of the energy landscape. Even the seemingly simple mean-field model, introduced by Sherrington and Kirkpatrick, turned out to have an amazingly rich mathematical structure. Only recently, there has been a growing mathematical understanding of mean-field spin glasses, but many questions—some of which transcend the original physical questions—remain unsolved.

Information: http://www.crm.umontreal.ca/Spin09/index_e.shtml.

* 14–18 **QTRF5 - Quantum Theory: Reconsideration of Foundations-5**, Vaxjo University, Vaxjo, Sweden.

Description: This conference is devoted to quantum foundations, probability, geometry, gravity and applications of the mathematical formalism of QM to macroscopic phenomena—cognitive science, psychology, economy. During previous conferences we were fortunate to have physicists (theorists as well as experimentalists), mathematicians, and several philosophers interested in foundations of quantum theory. Fundamental questions of quantum mechanics, especially information theory, quantum computing, cryptography, and teleportation have continued to be central topics this year.

Information: <http://www.vxu.se/msi/konferens/QTRF5/>.

* 14–20 **The Interplay of Algebra and Geometry**, Cortona, Italy.

Description: The one-week conference “The Interplay of Algebra and Geometry”, which is being organized to honor the 60th birthday of Prof. Corrado De Concini, intends to present some of the most important and recent developments in the following fields: Complete symmetric varieties and wonderful compactifications; Models of subspace arrangements and box splines; Quantum groups; Representation theory and Invariant theory; Cohomology of Artin and braid groups.

Scientific Committee: Enrico Arbarello, Sapienza Università di Roma; Victor Kac, MIT; Claudio Procesi, Sapienza Università di Roma; Marc Rosso, ENS, Paris; Mario Salvetti, Università di Pisa.

Organizing Committee: Nicoletta Cantarini, Università di Padova; Giovanni Gaiffi, Università di Pisa; Paolo Papi, Sapienza Università di Roma.

Information: <http://www.dm.unipi.it/cortona2009>.

* 15–18 **Workshop on Electromagnetic Inverse Problems**, University of Manchester, Manchester, United Kingdom.

Description: This workshop on electromagnetic inverse problems coincides with the annual meeting on Biomedical Applications of Electrical Impedance Tomography, and is intended to bring together specialists in the mathematics of EIT and related inverse problems with those working not only on medical applications but also other areas including geophysics, process monitoring, archaeology, landmine detection and non-destructive testing. We will also aim to promote collaboration with those working in electrosensing in the animal kingdom (notably weakly electric fish).

Speakers include: Gunther Uhlmann, Victor Isakov, Habib Ammari and Mike Nelson.

Information: <http://www.maths.manchester.ac.uk/eit2009/>.

- * 15-20 **Strobl09 Conference on Time-Frequency**, Conference center "BIFEB" Strobl, Salzburg, Austria.

Description: This is a general conference on mathematical and computational aspects of harmonic analysis and time-frequency analysis and will take place in the congenial and productive atmosphere of the town of Strobl near Salzburg, Austria.

Topics: Time-frequency analysis, pseudodifferential operators, wireless communications and time-varying systems, compressed sensing and sparsity, sampling theory, signal transforms and wavelet theory, functions spaces.

Organizers: Hans G. Feichtinger, K. Groechenig.

Deadline for registration and submission of abstracts: April 15, 2009.

Information: <http://nuhag.eu/strobl09>.

- * 15-26 **IMA New Directions Short Course: Applied Algebraic Topology**, Institute for Mathematics and its Applications (IMA), University of Minnesota, Minneapolis, Minnesota.

Description: IMA will host an intensive short course designed to efficiently provide researchers in the mathematical sciences and related disciplines; the basic knowledge prerequisite to undertake research in applied algebraic topology. The course will be taught by Gunnar Carlsson, Department of Mathematics, Stanford University, and Robert Ghrist, Department of Electrical and Systems Engineering, Department of Mathematics, University of Pennsylvania. The primary audience for the course is mathematics faculty. No prior background in applied algebraic topology is expected.

Information: <http://www.ima.umn.edu/2008-2009/ND6.15-26.09/>.

- * 15-July 3 **IMA PI Summer Program for Graduate Students: The Mathematics of Inverse Problems**, University of Delaware, Newark, Delaware.

Description: The course will concentrate on The Mathematics of Inverse Problems. Inverse problems is a fast-growing area involving a broad range of disciplines from the most abstract and pure mathematics to practical engineering. The 2009 summer program on inverse problems covers three different types of inverse problems: inverse problems for hyperbolic PDE's, inverse scattering in the frequency domain, and variational inverse problems. The program will cover the techniques used to tackle problems at the cutting edge of mathematical research in each of these areas. This is a unique and timely synthesis of disciplines that will position future researchers for the next step in inverse scattering from waves that, we believe, will combine variational methods with direct qualitative techniques.

Information: <http://www.ima.umn.edu/2008-2009/PISG6.15-7.3.09/>.

- * 22-26 **Topology of Algebraic Varieties**, Jaca, Spain.

Description: This five day conference is in honor of Anatoly Libgober's 60th birthday. Main topics are: the topology of algebraic varieties, and relations between knot theory, algebraic geometry and mathematical physics. In addition to the 26 invited plenary speakers, we are soliciting applications for posters and short communications. Deadlines and further information can be found on the conference homepage. Students and postdocs may request NSF travel support by writing to one of the organizers.

Information: <http://www.math.uic.edu/~jaca2009/>.

- * 22-29 **The Poetry of Analysis (Conference in honour of Antonio Córdoba on the occasion of his 60th birthday)**, Colegio Mayor Juan Luis Vives, Madrid, Spain.

Description: This international meeting is a celebration both of the outstanding mathematical career of Prof. Antonio Córdoba and of his contribution to the development of mathematics in Spain. As an expression of our gratitude to Prof. Córdoba we have organized a group of exceptional speakers for this conference. The talks will focus on

the latest advances in several areas emphasizing "multidisciplinarity", the art which Antonio mastered when there was not even a term for it, to the great benefit of his students and collaborators. On behalf of all of them: Thank you, Antonio!

Information: <http://www.uam.es/gruposinv/ntatuum/cordoba/index.html>.

- * 23-26 **Sixth Annual International Symposium on Voronoi Diagrams in Science and Engineering (ISVD 2009)**, Technical University of Denmark, Kongens Lyngby, Denmark.

Description: The International Symposium on Voronoi Diagrams in Science and Engineering (ISVD) is the premier conference on Voronoi diagrams and their applications to many different scientific and engineering disciplines to solve real-world problems. Authors are invited to submit papers (up to 10 pages) describing original research related to the following topics: Mathematical aspects of Voronoi diagrams and Delaunay graphs, Generalizations of Voronoi diagrams and Delaunay graphs, Algorithms and implementation of Voronoi diagrams/Delaunay graphs, Applications of Voronoi Diagrams in bioinformatics; biology/ecology; computer science: computer graphics, image reconstruction and analysis, surface reconstruction, robotics and spatial databases; crystallography/material science; electronics (VLSI); geography; geomatics: geographic information systems, photogrammetry, and remote sensing; physics, chemistry and sustainable energies. There will be a special session devoted to bioinformatics.

Information: <http://www.imm.dtu.dk/ISVD>.

- * 28-July 3 **Affine Isometric Actions of Discrete Groups**, The Centro Stefano Franscini, Zurich, Switzerland.

Description: The study of affine isometric actions of groups on Hilbert or Banach spaces opens a new chapter in the theory of group representations, with connections to rigidity, ergodic theory, geometric group theory, and metric geometry. The aim of this conference, the first ever dedicated to this young subject, is to bring together young and confirmed experts in order to present new results and methods, isolate key problems in the field, and discuss future applications (e.g., possibly in theoretical computer science).

Information: <http://www.unige.ch/math/folks/arjantse/ascona09/>.

- * 29-July 3 **Workshop on Stochastic Analysis and Finance**, City University of Hong Kong, Kowloon, Hong Kong.

Description: The workshop aims to foster communication and dissemination or recent results among researchers in stochastic analysis and mathematical finance.

Information: <http://www6.cityu.edu.hk/ma/wsaf09/>.

- * 29-July 31 **Special Program: IMA Interdisciplinary Research Experience for Undergraduates**, Institute for Mathematics and its Applications (IMA), University of Minnesota, Minneapolis, Minnesota.

Description: The IMA summer REU gives students an experience in working on an interdisciplinary project involving mathematics. Students will work in teams of three with a faculty advisor and a post-doctoral mentor. This is a hands-on experience. There will be a few formal lectures. However, students will spend most of their time doing actual research. Students are expected to produce a poster and a publication-quality written report, and to give an oral presentation by the end of the 5-week period.

Information: <http://www.ima.umn.edu/2008-2009/SW6.29-7.31.09/>.

July 2009

- * 1-3 **International Conference on Design Theory and Applications**, National University of Ireland, Galway, Ireland.

Description: The conference will celebrate the 50th birthday of Dr. Warwick de Launey, and his many achievements in design theory. The broad theme of the conference is all areas of design theory, especially Hadamard matrices and their generalizations. Talks dealing with (i) applications of design theory, and (ii) computational aspects

of design theory, are particularly encouraged and welcome. Referred articles will be published post-proceedings in a special issue of Cryptography and Communications: Discrete structures, Boolean functions and sequences.

Organizing Committee: Viíctor Álvarez, Universidad de Sevilla, Spain; Dane Flannery, National University of Ireland, Galway; Kathy Horadam, RMIT University, Australia.

Information: <http://larmor.nuigalway.ie/~detinko/DeSign.htm>

- * 10-12 **Ninth International Conference on Mathematical Knowledge Management**, Grand Bend, Ontario, Canada.

Description: Mathematical Knowledge Management is the field at the intersection of mathematics, computer science, library science and scientific publishing. Its development is driven by on the one hand new technological possibilities which computer science, the Internet, and intelligent knowledge processing offer, and on the other hand the increasing demand by engineers and scientists for new techniques for producing, transmitting, consuming, and managing sophisticated mathematical knowledge.

Information: <http://www.orcca.on.ca/conferences/cicm09/mkm09>.

- * 13-31 **IMA Summer Program: Nonlinear Conservation Laws and Applications**, Institute for Mathematics and its Applications (IMA), University of Minnesota, Minneapolis, Minnesota.

Description: The first week of the program will be largely devoted to tutorial sessions and general survey lectures. These will be targeted at young researchers and Ph.D. students who know only some basic facts on the subject and want to get familiar with the main lines of current research. The following two weeks will contain more specialized research talks with one or two themes each day. These talks will be intermixed with discussions, pointing out the most promising areas for further research. We plan to overlap themes in several areas to stimulate interaction between different groups. The second week will focus more on the theoretical aspects, and the third week on applications and numerical methods.

Information: <http://www.ima.umn.edu/2008-2009/SP7.13-31.09/>.

August 2009

- * 3-7 **Chern-Simons Gauge Theory: 20 years after**, Max Planck Institute for Mathematics, Bonn, Germany.

Description: Chern-Simons theory has developed in several different directions since its relation to knot theory was discovered by Witten 20 years ago. On the one hand, there have been several advances in understanding the TQFT approach to his 3-manifold invariants and the semiclassical approximation, as well as in treating the Feynman path integral version rigorously using stochastic analysis. On the other hand, Witten's seminal work initiated lots of interesting questions and results in knot theory and geometric topology, as well as the development of entirely new fields. The workshop will bring together researchers working in geometric topology, stochastic analysis and mathematical physics with a particular interest in Chern-Simons theory. The schedule will include a limited number of one-hour talks, as well as additional time for problem sessions, informal discussion, and social events. The final schedule will be announced in advance of the workshop and posted on this website.

Information: http://www.hausdorff-center.uni-bonn.de/event/2009/gauge_theory/.

- * 3-8 **7th Pan African Congress of Mathematicians (PACOM) 2009**, Yamoussoukro, Ivory Coast.

Description: All interested mathematicians are invited and will find attached here the First Announcement. The Local Organizing Committee of PACOM 2009 would be grateful to you if you could widely circulate this information through the universities and institutions of high education in your respective countries.

Information: Professor Etienne Desquith; email: desquith@hotmail.com; phone: (+225) 01 33 78 28.

- * 4-10 **International Conference of Mathematical Sciences (ICMS Istanbul 2009)**, Maltepe University, Marmara Egitim Koyu, TR 34857 Maltepe, Istanbul, Turkey.

Description: The aim of this conference to see ongoing developments in mathematical sciences and computer sciences, and make scientists get together to discuss relevant subjects to have new ideas, present current published or unpublished results, and prepare new manuscripts.

Information: <http://mathsciencesconf.maltepe.edu.tr/>.

- * 9-14 **Model Theory: ESF Mathematics Conference in Partnership with EMS and ERCOM**, Mathematical Research and Conference Center, Bedlewo, Poland.

Description: Model theory is a branch of mathematical logic dealing with mathematical structures (models). Model theory is traditionally divided into two—parts pure and applied. Pure model theory studies abstract properties of first order theories, and derives structure theorems for their models. Originally, a good description of models was available only for so-called superstable theories, which is quite a restricted class. Nowadays, there is a great progress in extending the methods and results of pure model theory to wider and wider classes of theories (e.g., dependent, simple). There are also interesting new connections between pure model theory and descriptive set theory.

Information: Learn more at: <http://www.esf.org/conferences/09305>.

- * 9-22 **Summer School: Structures in Lie Representation Theory, Crystals, Derived Functors, Harish-Chandra Modules, Invariants, Quivers**, Jacobs University, Bremen, Germany.

Description: The root system of E_6 projected from 6 dimensions down to 2—courtesy of J. Stembridge. Root diagram of B_5 given a weight triangularization—courtesy of A. Joseph. Root diagram of A_6 given a weight triangularization cocourtesy of A. Joseph.

Courses: Mini-courses are given by Michel Brion (Grenoble), Maria Gorelik (Rehovot), Anthony Joseph (Rehovot), Alexander Premet (Manchester), Claus Michael Ringel (Bielefeld), Vera Serganova (Berkeley), Wolfgang Soergel (Freiburg), Gregg Zuckerman (New Haven).

Information: Additional information can be obtained from Ivan Penkov, School of Engineering and Science, Jacobs University, Bremen, Germany; email: i.penkov@jacobs-university.de. The Summer School is funded by the Volkswagen Foundation.

- * 15 **Workshop on Logical Aspects of Fault Tolerance (LAFT) co-located with LICS 2009**, University of California, Los Angeles, California.

Description: We are soliciting papers on logical aspects of fault tolerance. The concept of “fault” underlies essentially all computational systems that have any goal. Loosely speaking, a fault is an unintended event that can have an unintended effect on the attainment of that goal. “Fault tolerance” is the term given to a system's ability to cope in some way with a fault, either inherently or through design. Fault tolerance has been studied for its application to circuits, and then branching out to distributed systems and more recently to quantum computers, where the concern with fault tolerance is almost the paramount issue. The relevance to biological computation is also obvious. Papers must be concerned with the logic of fault tolerance, not simply fault tolerance.

Important Dates: Papers due: April 17, 2009. Notification: May 22, 2009. Final papers: July 10, 2009. Workshop: August 15, 2009. Please send all workshop correspondence, including submissions, to: marcus@aero.org.

Information: <http://www.aero.org/support/laft>.

- * 31-September 4 **GF2009 International Conference on Generalized Functions**, University of Vienna, Vienna, Austria.

Description: This conference continues a long-standing tradition of international conferences on generalized functions gathering

researchers working in all branches of “generalized functions”. As seen with the past few conferences held in Guadeloupe (France, 2000), Novi Sad (Serbia, 2004) and Bedlewo (Poland, 2007) the spectrum of interrelations with other fields of mathematics and applications has been steadily increasing. Following this development, GF2009 aims at a broad coverage of research in generalized functions (distribution theory, algebras of generalized functions), linear and nonlinear PDE (solvability, regularity, applied analysis), harmonic analysis (modulation spaces, time-frequency analysis and pseudodifferential operators), and applications in geometry ((non-)linear distributional geometry) and mathematical physics (general relativity, mathematical geophysics).

Information: <http://www.mat.univie.ac.at/~gf2009/>.

* 31-September 6 **International School on Geometry and Quantization**, Mathematics Research Unit, University of Luxembourg, Luxembourg.

Topics: Topics concentrate on algebraic-geometric and complex-analytic-geometric aspects of quantization. Leading experts in the field will give introductory courses on: Quantization of moduli spaces of bundles and the mapping class group, Stratified Kähler spaces, Quantization of universal Teichmüller space, Geometry of loop spaces, Quantum integrable systems and Langlands program, Introduction to geometric asymptotic analysis, and Geometric quantization and heat kernel methods. The school is aiming for young researchers intending to enter these exciting fields of research. Immediately after the school there will be a one week international conference GEOQUANT on the same topics.

Lecturers: Andersen, Jorgen, Aarhus, Denmark; Huebschmann, Johannes, Lille, France; Sergeev, Armen, Moscow, Russia; Talalaev, Dmitry, Moscow, Russia; Tate, Tatsuja, Nagoya; Japan; Wurzbacher, Tilmann, Metz, France; Zhang, Weiping, Nankai, China.

Information: <http://math.uni.lu/geoquant/school>.

September 2009

* 7-8 **CETL-MSOR Conference 2009**, Open University, Milton Keynes, England.

Description: The Maths, Stats & OR Network will be running its fourth annual learning and teaching conference in conjunction with the related Centres of Excellence in Teaching and Learning (CETLs). The 2009 conference will be hosted by the Centre for Open Learning of Mathematics, Science, Computing and Technology (COLMSCT). The aim of this conference is to promote, explore, and disseminate emerging good practice and research findings in mathematics and statistics support, teaching, learning, and assessment.

Information: <http://mathstore.ac.uk/index.php?pid=253>.

* 7-11 **Third International Conference on Geometry and Quantization GEOQUANT**, Mathematics Research Unit, University of Luxembourg, Luxembourg.

Topics: The scientific program of the conference is concentrated around the following main topics: algebraic-geometric and complex-analytic-geometric aspects of quantization; geometric quantization and moduli space problems; asymptotic geometric analysis; infinite-dimensional geometry; relations with modern theoretical physics.

Speakers (preliminary list): Andersen, Jorgen, Aarhus (TBC); Charles, Laurent, Paris; Domrin, Andrei, Moscow; Englis, Mirek, Prague; Foth, Tatyana, Western Ontario; Fujita, Hajime, Tokyo; Gorodentsev, Alexey, Moscow; Huebschmann, Johannes, Lille; Kaledin, Dmitry, Moscow (TBC); Karabegov, Alexander, Abilene; Kobayashi, Ryoishi, Nagoya; Mano, Toshiyuki, Kyoto; Marinescu, George, K[∞]In; Natanzon, Sergey, Moscow; Nohara, Yuichi, Nagoya; Osipov, Denis, Moscow; Paoletti, Robert, Milano; Talalaev, Dmitry, Moscow; Tate, Tatsuja, Nagoya; Trechev, Dmitry, Moscow; Tyurin, Nikolai, Dubna; Ueno, Kenji, Kyoto; Upmeier, Harald, Marburg; Zhang, Weiping, Nankai, China.

Information: <http://math.uni.lu/geoquant>.

* 14-18 **IMA Workshop: Flowing Complex Fluids: Rheological Measurements and Constitutive Modeling**, Institute for Mathematics and its Applications (IMA), University of Minnesota, Minneapolis, Minnesota.

Description: Fluids with nontrivial small-scale inhomogeneities (microstructure) include suspensions, emulsions, foams, polymer melts and solutions, surfactant solutions and liquid crystals. Flows of these complex fluids display features that are not found in simple fluids, including interfacial and bulk instabilities, texture formation and evolution and other novel flow phenomena that all can be traced back to the influence the fluid microstructure has on the stresses that develop within the flow. This workshop will focus on the experimental motivation and the constitutive modeling of complex fluids at all scales. Topics to be discussed include modeling from microscopic to mesoscopic to macroscopic, closures, constitutive model predictions including shear thinning and thickening regimes, inhomogeneities in flow including transient and steady state shearbanding, and shear induced phase transitions.

Information: <http://www.ima.umn.edu/2009-2010/W9.14-18.09/>.

* 21-25 **Convex algebraic geometry, optimization and applications**, American Institute of Mathematics, Palo Alto, California.

Description: This workshop, sponsored by AIM and the NSF, will be devoted to the study of “Convex Algebraic Geometry” and some of its numerous applications.

Information: <http://aimath.org/ARCC/workshops/convexalggeom.html>.

* 24-30 **6th International Conference on Functional Analysis and Approximation Theory -FAAT 2009**, Acquafredda di Maratea, Italy.

Description: The meeting will be devoted to some significant aspects of contemporary mathematical research on functional analysis, operator theory and approximation theory including the applications of these fields in other areas such as partial differential equations, integral equations, numerical analysis. It is expected that the Proceedings of the Conference will be published.

Plenary speakers: J. Appell (Würzburg), G. Godefroy (Paris), N. Jacob (Swansea), M. Kato (Kitakyushu), L. Maligranda (Lulea), F. Marcellan (Madrid), G. Milovanovic (Serbia), G. Monegato (Torino), B. de Pagter (Delft), L.E. Persson (Lulea), D. Potts (Chemnitz), I. Raai (Cluj-Napoca), B. Silbermann (Chemnitz), V. Totik (Szeged), J. Szabados (Budapest), P. Vertesi (Budapest).

Organizing Committee: F. Altomare, A. Attalienti, M. Campiti, M. Cappelletti Montano, L. D’Ambrosio, M. C. De Bonis, S. Diomedea, V. Leonessa, G. Mastroianni, D. Occorsio, M. G. Russo.

Information: <http://www.dm.uniba.it/faat2009>; email: faat2009@dm.uniba.it.

October 2009

* 12-16 **IMA Workshop: Flowing Complex Fluids: Fluid Mechanics-Interaction of Microstructure and Flow**, Institute for Mathematics and its Applications (IMA), University of Minnesota, Minneapolis, Minnesota.

Description: Fluids with nontrivial small-scale inhomogeneities (microstructure) include suspensions, emulsions, foams, polymer melts and solutions, surfactant solutions and liquid crystals. Flows of these complex fluids display features that are not found in simple fluids, including interfacial and bulk instabilities, texture formation and evolution and other novel flow phenomena that all can be traced back to the influence the fluid microstructure has on the stresses that develop within the flow. This workshop focuses on these fluid mechanical phenomena and their origins in the complex nature of the fluid. Topics include free surface flows and extensional rheometry, instabilities and flow induced phase transitions, turbulence and drag reduction in polymer and surfactant solutions, coating and extrusion, some microfluidic flows of complex fluids, and multiscale computational methods.

Information: <http://www.ima.umn.edu/2009-2010/W10.12-16.09/>.

* 14-17 **Integers Conference 2009**, University of West Georgia, Carrollton, Georgia.

Description: The Editors of *Integers: Electronic Journal of Combinatorial Number Theory* are pleased to announce the Integers Conference 2009. The Integers conferences are international conferences in combinatorial number theory, held for the purpose of bringing together mathematicians, students, and others interested in combinatorics and number theory. The Integers Conference 2009 will also be honoring Professors Melvyn Nathanson and Carl Pomerance on the occasions of their 65th birthdays. The proceedings of the conference will be published as a special volume of the Integers journal. The conference will feature six plenary speakers and many other invited talks.

Information: <http://www.westga.edu/~math/IntegersConference2009>.

* 21-23 **The 4th International Conference on Research and Education in Mathematics 2009 (ICREM09)**, Kuala Lumpur, Malaysia.

Description: Mathematics, applications of mathematics, statistics, operations research, innovation in teaching mathematics, mathematics education and other related to mathematics and statistics.

Information: <http://www.inform.upm.edu.my>.

* 22-24 **Partial Differential Equations and Applications International Workshop for the 60th birthday of Michel Pierre**, Club Med, Vittel, France.

Description: The scope of this meeting is to gather international scientists to discuss recent advances in the fields studied by Michel Pierre, professor at ENS Cachan O'Antenne de Bretagne. His contributions are very important in non-linear analysis and applications to partial differential equations. More precisely, he is interested in one of the following topics : non-linear semi-groups, non-linear parabolic and elliptic partial differential equations with L1 or measure data, global existence for reaction-diffusion systems, shape optimization problem, in particular regularity of optimal shapes, control of PDE.

Information: <http://edpa2009.iecn.u-nancy.fr/>.

November 2009

* 2-6 **The Cuntz Semigroup**, American Institute of Mathematics, Palo Alto, California.

Description: This workshop, sponsored by AIM and the NSF, will explore the Cuntz semigroup; an invariant of C^* -algebras inspired by K -theory and recently shown to be important for classification.

Information: <http://aimath.org/ARCC/workshops/cuntzsemigroup.html>.

* 9-13 **Cyclic homology and symplectic topology**, American Institute of Mathematics, Palo Alto, California.

Description: This workshop, sponsored by AIM and the NSF, will be devoted to the incarnations of cyclic homology in symplectic topology.

Information: <http://aimath.org/ARCC/workshops/cyclichomology.html>.

December 2009

* 7-11 **IMA Workshop: Microfluidics: Electrokinetic and Interfacial Phenomena**, Institute for Mathematics and its Applications (IMA), University of Minnesota, Minneapolis, Minnesota.

Description: Microfluidics is the science of fluid motion on microscopic scales, roughly 100 nanometers to 100 microns. In this regime inertial effects are negligible and interfacial effects, i.e., surface tension, capillarity, electrostatic charge, etc. dominate. The subject has emerged as an area of intense interest in the applied sciences because of applications in nanotechnology and bio-analytical chemistry. The workshop will focus on topics in the basic science of ionic fluids: zeta potentials, Debye Layers, electroosmosis and electrophoresis; interfacial effects and applications such as controlled droplet motion by

electrowetting, and the Brownian hydrodynamics of macromolecules and polymers.

Information: <http://www.ima.umn.edu/2009-2010/W12.7-11.09/>.

* 14-18 **Brownian motion and random matrices**, American Institute of Mathematics, Palo Alto, California.

Description: This workshop, sponsored by AIM and the NSF, will be devoted to beta-generalizations of the classical ensembles in random matrix theory. These are certain tridiagonal and unitary Hessenberg matrices, with an eigenvalue p.d.f. generalizing that of Gaussian Hermitian matrices and Haar distributed unitary matrices.

Information: <http://aimath.org/ARCC/workshops/brownianrmt.html>.

* 17-21 **The 14th Asian Technology Conference in Mathematics (ATCM 2009)**, Beijing Normal University, Beijing, China.

Description: Conference Theme "Journey to discover more mathematics". The ATCM 2009 is an international conference to be held in China that will continue addressing technology-based issues in all mathematical sciences. The aim of this conference is to provide a forum for educators, researchers, teachers and experts in exchanging information regarding enhancing technology to enrich mathematics learning, teaching and research at all levels. English is the official language of the conference. There will be over 400 participants coming from over 33 countries around the world. Deadlines for abstract and full paper are June 15 and July 30 respectively.

Information: <http://atcm.mathandtech.org>.

January 2010

* 17-19 **ACM-SIAM Symposium on Discrete Algorithms (SODA10)**, Hyatt Regency Austin, Austin, Texas.

Description: This symposium focuses on research topics related to efficient algorithms and data structures for discrete problems. In addition to the design of such methods and structures, the scope also includes their use, performance analysis, and the mathematical problems related to their development or limitations. Performance analyses may be analytical or experimental and may address worst-case or expected-case performance. Studies can be theoretical or based on data sets that have arisen in practice and may address methodological issues involved in performance analysis.

Information: <http://www.siam.org/meetings/da10/>.

February 2010

* 22-26 **IMA Workshop: Analysis and Computation of Incompressible Fluid Flow**, Institute for Mathematics and its Applications (IMA), University of Minnesota, Minneapolis, Minnesota.

Description: The mathematical and numerical analysis of incompressible flows is of paramount importance for understanding basic nonlinear phenomena in science and engineering. The subject contains some of the most challenging nonlinear partial differential equations of mathematical physics, posing problems for both analysis and computation. This workshop will address modern developments in the core analytical issues of existence and uniqueness of smooth solutions, as well as of weak solutions and statistical solutions. Additional topics will include geophysical flows, analysis of complex fluid models, free surface problems, vanishing viscosity limits, and numerical methods for scientific computation of complex flows.

Information: <http://www.ima.umn.edu/2009-2010/W2.22-26.10/>.

* 24-26 **SIAM Conference on Parallel Processing and Scientific Computing (PP10)**, Hyatt Regency Seattle, Seattle, Washington.

Description: This conference organized by the SIAM Activity on Supercomputing.

Information: <http://www.siam.org/meetings/pp10/index.php>.

March 2010

* 8–June 11 **Long Program: Model and Data Hierarchies for Simulating and Understanding Climate**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, California.

Overview: Simulation has advanced climate science, but not sufficiently to the profit of theory and understanding. Our hypothesis is that the development of climate science will be best served by focusing computational and intellectual resources on model and data hierarchies. By bringing together physicists, mathematicians, statisticians, engineers, and climate-scientists to focus on themes across scales and scientific methodologies, our program will provide a framework for advancing our use of hierarchical methods in our attempt to understand the climate system.

Organizing Committee: Amy Braverman, Rupert Klein, Andrew Majda, Olivier Pauluis, Bjorn Stevens.

Application and Information: Information and an application form is available at <http://www.ipam.ucla.edu/programs/CL2010>. Applications for individual workshops will be posted on individual workshop home pages. Encouraging the careers of women and minority mathematicians and scientists is an important component of IPAM's mission and we welcome their applications.

The following new announcements will not be repeated until the criteria in the next to the last paragraph at the bottom of the first page of this section are met.

April 2010

* 12–16 **IMA Workshop: Transport and Mixing in Complex and Turbulent Flows**, Institute for Mathematics and its Applications (IMA), University of Minnesota, Minneapolis, Minnesota.

Description: Enhanced mixing and transport properties are distinguishing characteristics of both turbulent and more structured complex flows. The concepts of eddy diffusion and eddy viscosity, for example, were introduced as attempts to “parameterize” these effects to produce reduced models for theoretical analysis and simulations. At the same time turbulent mixing and transport is the focus of significant attention from a fundamental point of view, based in some cases on the Navier-Stokes equations and in other cases on models or special flows amenable to more thorough analytical investigations. This workshop is concerned with modern mathematical approaches to the study of transport and mixing in turbulence and other complex flows, including transitional flows with significant attention to applications from the applied sciences, predominantly geophysics.

Information: <http://www.ima.umn.edu/2009-2010/W4.12-16.10/>.

June 2010

* 1–5 **IMA Workshop: Natural Locomotion in Fluids and on Surfaces: Swimming, Flying, and Sliding**, Institute for Mathematics and its Applications (IMA), University of Minnesota, Minneapolis, Minnesota.

Description: Natural locomotion in fluids includes the swimming of fish and microorganisms and the flying of birds and insects. Other creatures employ similar movements on solid and fluid surfaces, e.g., snails, snakes, and water striders. Nature has exploited the complex fluid dynamics of time-dependent three-dimensional flows over a wide range of Reynolds numbers to evolve a variety of interesting mechanisms of locomotion. This workshop will focus on the mechanics of these behaviors and the current state of theoretical and experimental work in the field. The scope will cover the dynamics from low to high Reynolds numbers, emphasizing the links between the fluid dynamics and the nature of the evolved mechanisms. The inclusion of movement over solid and fluid surfaces introduces new phenomena involving surface stresses and complex fluid layers.

Information: <http://www.ima.umn.edu/2009-2010/W6.1-5.10/>

July 2010

* 12–15 **SIAM Conference on the Life Sciences (LS10)**, The David L. Lawrence Convention Center, Pittsburgh, Pennsylvania.

Description: This conference is organized by the SIAM Activity Group on the Life Sciences.

Information: <http://www.siam.org/meetings/ls10/>.

* 12–16 **2010 SIAM Annual Meeting (AN10)**, The David L. Lawrence Convention Center, Pittsburgh, Pennsylvania.

Description: SIAM's Annual Meeting provides a broad view of the state of the art in applied mathematics, computational science, and their applications through invited presentation, prize lectures, mini-symposia, and contributed papers and posters.

Information: <http://www.siam.org/meetings/an10/index.php>.

* 26–30 **6th International Conference on Lévy Processes: Theory and Applications**, Technical University of Dresden, Dresden, Germany.

Description: The focus is on recent developments in the theory of Lévy and jump processes and their applications. There will be invited talks and poster sessions.

Scientific Committee: Jean Bertoin (Paris VI, France), Serge Cohen (Toulouse, France), Davar Khosnevisan (Utah, USA), Andreas Kyprianou (Bath, UK), Alexander Lindner (Braunschweig, Germany), Makoto Maejima (Keio, Japan), Thomas Mikosch (Copenhagen, Denmark), Victor Pérez-Abreu (CIMAT, Mexico), Jan Rosinski (U. Tennessee, USA), Réne Schilling (Dresden, Germany).

Information: <http://www.math.tu-dresden.de/levy2010>; email: levy2010@tu-dresden.de. It is also possible to contact: Réne Schilling (TU Dresden) or Alexander Lindner (TU Braunschweig) directly.

* 26–August 6 **Winter School on Topics in Noncommutative Geometry**, Departamento de Matematica, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Argentina.

Description: The school will cover different topics in non-commutative geometry and its connections with other areas of mathematics and physics, such as operator index theory, strings, representations, operator algebras, and K-Theory. As of December 2008, the following people have agreed in principle to come and give a course: Henrique Bursztyn, Joachim Cuntz, Pavel Etingof, Victor Ginzburg, Victor Kac, Max Karoubi, Henri Moscovici, Holger Reich, Nicolai Reshetikhin, Marc Rieffel, Jonathan Rosenberg, Georges Skandalis, Boris Tsygan.

Organizers: G. Cortiñas, M. Farinati, J. A. Guccione, J. J. Guccione, M. Graña.

Scientific Committee: G. Cortiñas, J. Cuntz, B. Tsygan.

Information: <http://cms.dm.uba.ar/Members/gcorti/workgroup.GNC/3EELS>.