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# Mathematics Opportunities

## IMA Announces Spring and Summer Programs

The 1998-99 program of the Institute for Mathematics and its Applications, "Mathematics in Biology", will devote several workshops during the spring to the topic "Dynamic Models of Ecosystems and Epidemics". The date, title, and a brief description of each workshop follow.

April 19-23: Local Interaction and Global Phenomena in Vegetation and Other Systems. This workshop explores the effects of small-scale spatial interactions on the large-scale structure of communities. It addresses issues in scaling, renormalization, the interactions between levels of organization, and the interface between physical and biological processes.

April 24-27: Challenges and Opportunities in Genomics: Production, Storage, Mining, and Use. This is a Hot Topic workshop that focuses on scientific and mathematical issues that arise in production, storage, and mining of genomic data and use of the knowledge in applications.

May 17-21: Mathematical Approaches for Emerging and Reemerging Infectious Diseases. This workshop focuses on the study of ecological and evolutionary models in epidemiology and immunology using dynamical systems and stochastic analysis. A tutorial on the use of deterministic models in epidemiology and immunology will be held prior to the workshop on May 13-14.

June 17-11: From Individual to Aggregation: Modeling Animal Grouping. This workshop explores how striking animal aggregation patterns arise from decisions taken at the level of individuals.

July 20-24: Decision Making under Uncertainty: Energy and Environmental Models. This Hot Topic workshop is intended to create a dialogue between industry and academia about modeling issues and mathematical methodology that could be helpful in dealing with uncertainty in decision making.

The theme of the 1999 summer program is "Codes, Systems, and Graphical Models". The program is divided into two weeks: the first, August 2-6, covers codes on graphs and iterative decoding; the second, August 9-13, covers connections among coding theory, system theory, and symbolic dynamics.

For more details on these and other IMA programs, consult the Web site <http://www.ima.umn.edu/programs2.html>, or contact the Institute for Mathematics and its Applications, University of Minnesota, 400 Lind

Hall, 207 Church Street, Minneapolis, MN 55455; telephone 612-624-6066; e-mail to Fred Dulles, Associate Program Director, at [dulles@ima.umn.edu](mailto:dulles@ima.umn.edu).

—From an IMA announcement

## International Center for Mathematical Sciences 1999 Scientific Program

The International Center for Mathematical Sciences (ICMS) is organizing the following workshops and events for the spring and summer of 1999.

April 16: Lecture on Mathematics in Medicine by Jonathan Sherratt, Edinburgh International Science Festival.

May 16-23: Workshop, New Directions in the Model Theory of Henselian Valued Fields. Scientific Committee: H. D. Macpherson and D. Haskell.

May 23-June 4: Workshop, Hamiltonian Mechanics and Small Divisors in PDEs. Scientific Committee: W. Craig, J. Carr, K. Khanin, S. Kuksin, and E. Wayne.

July 5-9: The Fourth International Congress on Industrial and Applied Mathematics. A series of popular lectures and an exhibition will be held in association with the Congress. Details are available from the ICIAM99 Web site, <http://www.ma.hw.ac.uk/iciam99/>.

July 11-14: Workshop, The Dynamics of Thin Fluid Films. Scientific Committee: S. K. Wilson, B. Duffy, M. Grinfeld, L. Hocking, O. Jensen, J. King, J. Ockendon, D. Parker, M. Savage, and S. D. R. Wilson.

August 24-September 4: Workshop, The Geometry and Physics of Monopoles. Scientific Committee: J. Gauntlett, N. Hitchin, N. Manton, and M. Singer.

Full details on these programs can be obtained from the ICMS Web site at <http://www.ma.hw.ac.uk/icms/1999/index.html>, or contact the International Center for Mathematical Sciences, 14 India Street, Edinburgh EH3 6EZ, Scotland.

—From an ICMS announcement

## Mathematical Sciences and Their Applications Throughout the Curriculum

Mathematical Sciences and their Applications Throughout the Curriculum (MATC) is a major initiative of the National Science Foundation intended to promote systemic improvements in undergraduate education by increasing student understanding of and ability to use the mathematical sciences. Seven institutions, each one with five to ten affiliates, are engaged in the initiative. MATC mathematicians join with faculties of other departments to develop multidisciplinary courses, modules, and other materials, as well as new teaching approaches, that include the use of computer-based technologies and the Internet.

Indiana University, Bloomington, one of the lead MATC institutions, will host a workshop July 8-10, 1999. The workshop will feature "minicourse presentations" of many of the courses and teaching approaches that have been developed over the past three years. Faculties in all disciplines who have an interest in improving student understanding of mathematics and its applications are invited to attend the workshop. The registration fee is \$45 per person. Financial support is available to qualifying individuals who participate in two-person teams, one from mathematics and one from another discipline.

A sample of the program and further details are available at the MATC Web site at <http://matc.siam.org/workshop4/>.

—From a SIAM announcement

## National Medal of Science Nominations Sought

The National Medal of Science is the United States's highest honor for scientific accomplishment. The National Science Foundation (NSF) administers the program on behalf of the president. Any U.S. citizen or permanent resident who has applied for citizenship within the preceding twelve months is eligible to be nominated. A distinguished 12-member committee appointed by the president reviews the nominations and sends its list of recommendations to the president for final selection. The committee consists of outstanding scientists and engineers from a variety of disciplines in the natural and social sciences. The president of the National Academy of Sciences and the assistant to the president for Science and Technology Policy serve as ex-officio members of the selection committee.

For information on submitting nominations for the National Medal of Science, contact Susan Fannoney, Program Officer for the National Medals of Science, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230; telephone 703-306-1096; fax 703-306-0181; e-mail [sfannone@nsf.gov](mailto:sfannone@nsf.gov). The forms for electronic submission of nominations and references may be found on

the Web at [www.fastlane.nsf.gov/](http://www.fastlane.nsf.gov/) and in PDF and Word format at [www.nsf.gov/nsb/awards/hold.htm](http://www.nsf.gov/nsb/awards/hold.htm). The deadline for nominations for this year is **May 31, 1999**.

—From NSF announcement

## AWM Announces Mentoring Travel Grants for Women

The Association for Women in Mathematics announces a new Mentoring Travel Grant program, supported by the National Science Foundation. The objective of this program is to help junior women develop a long-term working and mentoring relationship with a senior mathematician. This relationship should help the junior mathematician to establish her research program and eventually receive tenure. In 1999 AWM expects to award as many as three grants, in amounts of up to \$4,000 each. Each grant would fund travel, subsistence, and other required expenses for an untenured woman mathematician to travel to an institute or a department to do research with a specified individual for one month. Any unexpended funds could be used for further travel to work with the same individual during the following year. (Applicants for mentoring travel grants may in exceptional cases receive up to three such grants throughout their careers, possibly in successive years; each such grant would require a new proposal and would go through the usual competition.)

Applicants must be women holding a doctorate or equivalent experience and with a work address in the USA (or home address if unemployed). The applicant's research may be in any field which is funded by the Division of Mathematical Sciences of the National Science Foundation.

Each applicant should submit FIVE COPIES of each of the following: a cover letter; a curriculum vitae; a research proposal approximately five pages in length which specifies why the proposed travel would be particularly beneficial; a supporting letter from the proposed mentor (who must promise to be available at the time of the proposed travel and may be either a man or a woman), together with the curriculum vitae of the proposed mentor; an approximate budget; and information about other sources of funding available to the applicant. A final report will be required from each awardee. All awards will be determined on a competitive basis by a selection panel consisting of distinguished mathematicians appointed by the AWM.

Send FIVE complete copies of the application materials (including the cover letter) to: Mentoring Travel Grant Selection Committee, Association for Women in Mathematics, 4114 Computer & Space Sciences Building, University of Maryland, College Park, MD 20742-2461. Applications via e-mail or fax are not acceptable. Deadline for applications is **April 1, 1999**.

Further information may be obtained by telephone (301-405-7892) or e-mail ([awm@math.umd.edu](mailto:awm@math.umd.edu)).

—From AWM announcement