

Summer Workshops and Internships for Graduate Students in Mathematics & Statistics

Mathematical Sciences Research Institute (MSRI), Berkeley, CA

<http://www.msri.org/web/msri/scientific/workshops/summer-graduate-school>

MSRI organizes several summer graduate schools most of which are held at MSRI. MSRI covers travel and local expenses of the students.

2014 Schedule:

June 16-27, Dispersive Partial Differential Equations

June 23-July 4, Seminaire de Mathematique Superieures 2014: Counting Arithmetic Objects

June 29-July 19, IAS/PCMI 2014: Mathematics and Materials

July 7-18, Stochastic Partial Differential Equations

July 28-August 8, Geometry and Analysis

Eligibility: Graduate students from MSRI Academic Sponsoring Institutions (Boston University is included in this group) are eligible for nomination. MSRI provides support for two students per summer and a third one if at least one of them is female or is a US citizen from a group that is underrepresented in the mathematical sciences. MSRI accepts nominees on a first-come first-served basis up to the limits of the capacity of each summer school.

Application: Graduate students must be nominated by their Director of Graduate Studies. The DGS submits the nominations for his institution to the workshop coordinator. The enrollment period is December 2, 2013 through March 1, 2014.

AMS Math Research Communities (MRC)

<http://www.ams.org/programs/research-communities/mrc>

One-week workshops on varying topics held each summer at Snowbird Resort in Utah.

Nurtures graduate students and post-docs and provides them with opportunities to build social and collaborative networks. The structured program is designed to engage and guide all participants. The program includes a one-week summer conference, a Special Session at the Joint Math Meetings of the AMS & MAA, a discussion network, ongoing mentoring, and a longitudinal study of early career mathematicians.

Summer 2014 Schedule:

June 8-14, Cluster Algebras

June 15-21, Algebraic and Geometric Methods in Applied Discrete Mathematics

June 24-30, Mathematics of Quantum Phase of Matter and Quantum Information

June 24-30, Network Science

Deadline: March 1, 2014

Society for Industrial & Applied Mathematics (SIAM)

<http://www.siam.org/students/g2s3/index.php>

Gene Golub SIAM Summer School

Summer 2014 Schedule:

August 4-15, Simulation, Optimization, and Identification in Solid Mechanics, Linz, Austria

Deadline: February 1

Park City Math Institute (PCMI) – Institute for Advanced Study (IAS), Park City, Utah

<https://pcmi.ias.edu/program-gss/2014>

The Graduate Summer School bridges the gap between a general graduate education in mathematics and the specific preparation necessary to do research on problems of current interest. In general, these students will have completed their first year, and in some cases, may already be working on a thesis.

Summer 2014 Schedule:

Mathematics and Materials, June 29 – July 19

Deadline: January 31, 2014

Summer 2015 Program:

Geometry of Moduli Spaces and Representation Theory

A set of intensive short lectures offered by leaders in the field, designed to introduce students to exciting, current research in mathematics. Course assistants will be available for each lecture series. Participants meet three times each day for lectures, with one or two problem sessions scheduled each day as well. The program in 2014 will bring together a diverse group of mathematicians and scientists with interests in fundamental questions in mathematics and the behavior of materials. The meeting addresses several themes including computational investigations of material properties, the emergence of long-range order in materials and self-assembly, the geometry of soft condensed matter and the calculus of variations, phase transitions and statistical mechanics. The program will cover several topics in discrete and differential geometry that are motivated by questions in materials science. While prior exposure to these topics will help, we expect that most of the material will be developed from scratch. The lectures will be complemented by tutorial sessions run by senior graduate students.

American Institute of Mathematics (AIM), Palo Alto, California

<http://aimath.aimath.org/research/upcoming.html>

Participants will be invited to suggest open problems and questions before the workshop begins, and these will be posted on the workshop website. These include specific problems on which there is hope of making some progress during the workshop, as well as more ambitious problems, which may influence the future activity of the field. Lectures at the workshop will be focused on familiarizing the participants with the background material leading up to specific problems, and the schedule will include discussion and parallel working sessions. Applications are open to all.

2014 Schedule:

May 12-16, Rational and integral points on higher-dimensional varieties (Apply by Jan 12)

June 9-13, The Cauchy-Riemann equations in several variables (Apply by Feb 9)

July 14-18, Mori program for Brauer log pairs in dimension three (Apply by March 14)

August 11-15, Neglected infectious diseases (Apply by April 11)

Institute for Pure & Applied Mathematics (IPAM), UCLA

<http://www.ipam.ucla.edu/programs/programs.aspx#summer>

Summer Programs 2014:

June 29 - August 22, Graduate-Level Research in Industrial Projects for Students (G/RIPS), Berlin

July 21 - August 1, Hands-on Summer School: Electronic Structure Theory for Materials and (Bio)molecules. Apply by March 31.

IM@STATE, Research Experience for Early Graduate Students (REG)

Department of Mathematics, Institute for Math, North Carolina State University

<http://www.math.ncsu.edu/summer/IMSTATE/index.php>

10-week program (June & July) for math grads in first 2 years of grad school (US citizens or permanent residents). \$4,000 stipend, free dorm, partial meal allowance, and travel up to \$300.

Students will work on research problems in a supportive, collaborative environment, which is part of a vibrant research department with strong links to industry and government laboratories. They will work with accomplished faculty, gaining the skills and confidence they need to continue.

2014 Schedule and Application will be posted in December.

Application deadline will likely be in February.

2013 suggested project topics included:

Optimal Design of Electron Beam Guns (Calabazas Creek Research, Inc.), Modeling Biological Systems (U.S. EPA), Financial Mathematics, Cryptanalysis and the R.S.A., Cell Rearrangements in Tissues, Random Sampling and Matrix Approximations, Modeling and Simulation of Biological Flows, Cluster Analytics and Data Mining, Advanced Materials for Improved Biomedicine, Quantum Error-Correcting Codes

East Asia and Pacific Summer Institute (EAPSI) for U.S. Graduate Students

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5284

NSF and selected foreign counterpart science and technology agencies sponsor international research institutes for U.S. graduate students in seven East Asia and Pacific locations at times set by the counterpart agencies between June and August each year. The Summer Institutes (EAPSI) operate similarly and the research visits to a particular location take place at the same time. Although applicants apply individually to participate in a Summer Institute, awardees become part of the cohort for each location. Applicants must propose a location, host scientist, and research project that is appropriate for the host site and duration of the international visit.

An EAPSI award provides U.S. graduate students: 1) first-hand research experiences in Australia, China, Japan, Korea, New Zealand, Singapore, or Taiwan; 2) an introduction to the science, science policy, and scientific infrastructure of the respective location; and 3) an orientation to the society, culture, and language. It is expected that EAPSI awards will help students initiate professional relationships to enable future collaboration with foreign counterparts.

The NSF award includes participation in the Pre-Departure Orientation, summer stipend of \$5,000, and roundtrip airplane ticket to the host location. EAPSI partner agencies pay in-country living expenses during the summer institutes.

Full Proposal Deadline Date: November 25, 2013

Centre de Recherches de Mathematiques (CRM), Montreal

<http://www.crm.umontreal.ca/en/>

May 8-12, Hall and Cluster Algebras (Jan 15 deadline)

May 19-23, Workshop on Lie Theory and Mathematical Physics (Jan 31 deadline)

June 9-13, Categorification and Geometric Representation Theory (Feb 15 deadline)

June 23-July 4, Seminaire de Mathematiques Superieures, Counting Arithmetic Objects

Statistical and Applied Mathematical Sciences Institute (SAMSI), Research Triangle Park, NC
Research Programs

<http://www.samsi.info/programs/research-programs>

SAMSI's research programs are large-scale efforts focusing on interfaces among statistics, applied mathematics and other disciplinary sciences. The programs typically run a full academic year. They involve long and short-term research fellows from U.S. and international institutions, and SAMSI postdoctoral fellows. Graduate students from our partner universities and from other universities, both national and international, are active participants. The programs also engage researchers working in industry, governmental agencies and national laboratories.

No information about 2014 yet. (2013 program ran August 11-16, deadline was May 1.)

Education & Outreach Programs

<http://www.samsi.info/activities/education-and-outreach-workshops>

Industrial Math/Stat Modeling Workshop for Graduate Students (IMSM)

Thirty mathematics and statistics students selected from a national pool work in teams on projects presented by nonacademic scientists. The workshop exposes students to current research problems from government labs and industry as well as to a team approach to problem-solving. The students learn to interact with scientists outside their discipline, allocate tasks among team members, and communicate results through oral presentations and written reports.

2014 program to be held at North Carolina State University, July 14-22.

Mathematical Modeling in Industry Workshops for Graduate Students

The Mathematical Modeling in Industry Workshop for Graduate Students is designed to provide graduate students and qualified advanced undergraduates with first-hand experience in industrial research. Students work in teams under the guidance of an industry mentor who helps the student model, analyze, and perform computational work associated with a real-world industrial problem. Past projects have resulted in papers published in refereed scientific journals.

Usually held in August. 2014 dates not yet available.

National Security Agency (NSA)

http://www.nsa.gov/careers/opportunities_4_u/students/

Internships for Graduate Students

Cyber Summer Program (CSP)

Each summer we invite up to 16 exceptional students to participate in a 12-week program where they work together, and in teams, directly with NSA technical professionals on mission-critical cyber-related problems.

Applications are accepted September 1st - November 15th each year.

Graduate Mathematics Program (GMP)

Collaborate with top mathematicians and statisticians in the country, solving problems critical to the success of our missions. You'll have the opportunity to learn and develop cryptomathematical theory and to apply the theory to operational problems. GMP participants work together on problems involving mathematics, statistical, data analysis, cryptology and communications technology. Students document their work in technical papers which are internally published at the agency.

Applications are accepted September 1st - October 15th each year.

Institute for Advanced Study (IAS), Princeton, NJ

<http://www.math.ias.edu/womensprogram>

Women and Mathematics

Since 1994 with the support of the National Science Foundation, the Institute, together with Princeton University, has hosted an intensive 11-day mentoring program for undergraduate and graduate women in mathematics. Topics vary by year.

The program brings together research mathematicians with undergraduate and graduate students on the campus of the Institute for Advanced Study and is designed to address issues of gender imbalance in mathematics. Activities include lectures and seminars on a focused mathematical topic, mentoring, discussions on peer relations, an introduction to career opportunities and a women in sciences seminar.

Summer 2014 Schedule: May 12-23, Random Matrix Theory

Deadline: February 20

Research Training Group, Inverse Problems and Partial Differential Equations, U of Washington

<http://www.math.washington.edu/ipde/summer/index.html>

IPDE Summer School has been held each summer for the last 5 years. Applications due April 1.

A three-week summer school giving advanced undergraduates and beginning graduate students the opportunity to study with the University of Washington's integrated Inverse Problems/PDE group.

Students will attend lectures in the morning and problem sessions in small groups with mentors in the afternoon. Advance your career by learning from experts in these fields while visiting Seattle during summer 2013, when the Pacific Northwest is at its best.

On-campus accommodation and meals will be provided, plus a travel allowance of up to \$600 for U.S. citizens or permanent residents.

(Applications from international students may be considered, but international students must provide their own support for travel, accommodation, and meals. In particular, small travel grants may be available for Canadian students, who should contact PIMS Deputy Director George M. Homsy for possible support.)

National Institute for Mathematical and Biological Synthesis (NIMBioS), U of Tennessee, Knoxville

Spring Opportunities Workshop for Women in the Mathematical Sciences

http://www.nimbios.org/education/WS_opportunities

Aims to familiarize women in the mathematical sciences with professional opportunities and help them thrive in mathematics-related fields. Graduate students and recent post-grads are invited to apply. Support is available for travel and lodging to the workshop, and registration is free. Speakers, panelists and discussion leaders will be women in research and management positions in industry, government labs, and academia. Participants are encouraged to present a poster on their research.

April 9-11, 2014. Deadline: January 20.

Visiting Graduate Student Fellowships

http://www.nimbios.org/education/grad_fellowships

NIMBioS offers fellowships for visits for up to several months by graduate students interested in pursuing research with NIMBioS senior personnel, postdoctoral fellows or working group participants. Visiting graduate students will work on-site at NIMBioS. The program is designed to facilitate graduate student training while fostering research at the interface of mathematics and biology. Graduate students at the beginning stages of linking theory and data are strongly encouraged to apply.

Connecting Models with Data, Tutorial, May 19-21, 2014

<http://www.nimbios.org/tutorials/>

Mathematical Biosciences Institute (MBI), Ohio State University

<http://mbi.osu.edu/eduprograms/graduate2014.html>

Each summer, NIMBioS helps to present this 10-day program at the Mathematical Biosciences Institute (MBI). Instructors are researchers in mathematics and the biological sciences from across North America. Graduate students from the mathematical, physical and life sciences are all encouraged to apply. Summer 2014 Schedule: July 7-18 (No further info yet, deadline likely in January.)

Workshop for Young Researchers in Mathematical Biology (WYRMB)

<http://mbi.osu.edu/wyrmbyrmb2014.html>

This workshop is intended to broaden the scientific perspective of young researchers in mathematical biology and to encourage interactions with other scientists. Activities include plenary talks and poster sessions, as well as group discussions on issues relevant to mathematical biologists. Several abstracts will be chosen for short talks as well as to be presented as a poster.

Summer 2014 Schedule: August 25- 28

Deadline: May 1

Marine Biological Institute, Woods Hole, Cape Cod, MA

The Marine Biological Laboratory is an international center for research, education, and training in biology, biomedicine, and ecology. Learn about our facilities, our community, and why Lewis Thomas called us America's "National Biological Laboratory."

Special Topics Course Schedule, 2014:

August 13-27, Neuroinformatics

http://hermes.mbl.edu/education/courses/special_topics/neufo.html

The ability to digitally acquire, store and analyze large volumes of multidimensional data in the neurosciences, ranging from multiple spike trains to static and dynamic brain images, has given rise to a new and growing body of research. This two-week course is structured around the issues related to such data, and will contain lectures on fundamental analytical techniques, lectures on emerging and established applications, and focused laboratory sessions to provide hands-on experience. Limited to 26 participants.

Cold Spring Harbor Laboratory, Long Island, NY

<http://meetings.cshl.edu/courses.html>

Statistical Analysis of Genomic Data

June 18-July 1, 2014

Deadline to Apply: March 15, 2014

High-throughput genomics assays have become pervasive in modern biological research. To properly interpret these data, experimental and computational biologists need to have a firm grasp of statistical methodology. This course is designed to build competence in quantitative methods for the analysis of high-throughput molecular biology data.

Scholarship support for certain courses is now primarily available only to U.S. citizens and permanent residents due to restrictions mandated by U.S. federal funding agencies. However the Laboratory has made available some additional funds specifically earmarked for qualified foreign students. The amount awarded will be based upon the availability of funding. Travel support is not available.

Pacific Institute for Mathematical Sciences (PIMS), Vancouver, British Columbia

<http://www.pims.math.ca/scientific/summer-schools/current-summer-schools>

June 2-14, Summer School in Probability, University of British Columbia

July 7-11, West Coast Algebraic Topology Summer School, UBC

July 21-25, The Economics and Mathematics of Systemic Risk and the Financial Networks, UBC
Aug 18-22, Summer School on Randomized Techniques for Combinatorial Algorithms, Simon Fraser
Institute for Mathematics and its Applications (IMA), University of Minnesota

<http://www.ima.umn.edu/2013-2014>

<http://www.ima.umn.edu/solicit/summergrad-solicit.html>

Summer Graduate Program primarily for graduate students of IMA Participating Institutions. Support for students at other U.S. universities may be available, conditional upon the outcomes of pending grants.

Summer 2014 Program: Modern Applications of Representation Theory

Three-weeks at University of Chicago, Chicago, IL. Dates TBA.

The instruction in the summer school comprises several week-long lecture series supplemented by a foundational tutorial and two days of short hour-long lectures on specialized topics. The objectives are to (i) quickly review the basic materials (tutorial); (ii) focus on the developments of the last 10 years (several long lecture series); and (iii) provide a glimpse of the state of current research and open problems (a number of short talks). Most of the material is not covered in any textbooks, courses, or even survey articles — they are only available in the form of original research papers or preprints.

Centre for Mathematical Medicine (CMM) at the Fields Institute, Toronto

<http://www.fields.utoronto.ca/programs/scientific/CMM/13-14/diabetes/index.html>

Summer 2014 Schedule: March 24-26, Workshop on Diabetes Systems Biology

The aim of this meeting is to explore the multi-disciplinary progress made in systems biology of diabetes and beta cells, to discuss the major outstanding problems that remain to be solved, to foster new research collaborations, and to introduce students and young researchers to the field

Commercial and Industrial Mathematics Program (CIM), at the Fields Institute, Toronto

<http://www.fields.utoronto.ca/programs/cim/>

The focus of the CIM Program is to cooperate with business, enabling technology transfer between mathematical scientists and the information society.

Summer 2014 Schedule: August 11-15, Industrial Problem Solving Workshop, Toronto

Incorporated into the promotional aspects of this event is a mandate to increase the participation of mathematically-trained graduate students in local industry, and to provide networking and collaborative environments for industrial partners and the students.

Isaac Newton Institute for Mathematical Sciences, Cambridge, England

<http://www.newton.ac.uk/programmes/>

Summer 2014 Schedule:

June 9-July 4, Interactions between Dynamics of Group Actions and Number Theory

July 14-August 8, Theory of Water Waves

July 21-August 15, Quantum Control Engineering

All programmes have funds available to support visits of intermediate length (a few days to a couple of months) from both UK and overseas participants, and these are usually allocated after the main shape of the programme has been determined. Participants may be, at the discretion of the organisers, given a daily allowance towards subsistence (accommodation and food). The maximum level is agreed by the Inland Revenue and some participants will be asked to try and find partial support themselves.

The Southwest Center for Arithmetic Geometry

<http://swc.math.arizona.edu/>

Arizona Winter School 2014: Arithmetic Statistics

March 15-19, 2014 at the University of Arizona in Tucson, AZ. Deadline: January 10

National Aeronautics and Space Administration (NASA) offers internships for math grads.
<http://www.nasa.gov/offices/education/centers/johnson/student-internships/#.UovhR-As9TY>

American Statistical Association (ASA) maintains a list of internships at:
<http://www.amstat.org/education/internships.cfm>

American Mathematical Society (AMS) maintains a list of opportunities for grad students at:
<http://www.ams.org/programs/students/gradinfo/gradinfo>

Center for Career Development at Boston University

<http://www.bu.edu/careers/> Provides resources and advice for finding internships.

<http://www.bu.edu/careers/services-workshops/bu-careerlink/> Internship postings & online applications.

The Applied and Interdisciplinary Mathematics (AIM) at the University of Michigan maintains a listing of summer programs for graduate students at:

<http://www.math.lsa.umich.edu/aim-grad/StudentResources/>

Simons Center for Geometry & Physics, Stony Brook, Long Island, NY

<http://www.scgp.stonybrook.edu/>

Institute for Computational and Experimental Research in Mathematics (ICERM), Providence, RI

<http://icerm.brown.edu/>

Additional International Resources:

Banff International Research Station (BIRS) for Mathematical Innovation and Discovery

<http://www.birs.ca/programs/general-program-descriptions>

International Center for Theoretical Physics (ICTP), Trieste, Italy

<http://www.ictp.it/research/math/scientific-activities.aspx>

Max Planck Institute for Mathematics, Bonn, Germany

<http://www.mpim-bonn.mpg.de/>

The Hausdorff Center for Mathematics, Bonn, Germany

<http://www.hausdorff-center.uni-bonn.de/>

Institut des Hautes Etudes Scientifiques (IHES), France

<http://www.ihes.fr/jsp/site/Portal.jsp>

Institut de Recherche Mathematique Avancee (IRMA), Strasbourg, France

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

Centre International de Rencontres Mathematiques (CIRM), Marseille, France

<http://www.cirm.univ-mrs.fr/index.html/?lang=en>

Research Institute of Mathematical Sciences (RIMS), Kyoto, Japan

<http://www.kurims.kyoto-u.ac.jp/en/index.html>

Instituto Nacional de Matematica Pura e Aplicada (IMPA), Brazil

<http://www.impa.br/opencms/pt/>

Atlantic Association for Research in the Mathematical Sciences (AARMS), Canada
<http://www.aarms.math.ca>