

Stellar Lineup for AMS Meeting in August 2000

The AMS meeting in August 2000 is shaping up to be a landmark event. Entitled *Mathematical Challenges of the 21st Century*, the meeting will feature about thirty speakers chosen from the world's top mathematicians. These mathematical leaders will share their ideas about the most important questions in mathematics today and what the future might bring. The meeting will be held August 7–12, 2000, on the campus of the University of California, Los Angeles.

“Mathematical Challenges” rivals the International Congresses of Mathematicians (ICMs) in the number and prominence of the invited speakers. And the AMS meeting will likely be challenging in more ways than one: Unlike the ICMs, which usually have 15 to 20 invited lectures spread over nine or ten days, the AMS meeting will squeeze 30 into just six days. It promises to be an intense, exhilarating event.

The elite group of speakers chosen for “Mathematical Challenges” includes eight Fields Medalists and a number of others who are generally considered to have been top contenders for this distinction. Within the group one also finds a Nevanlinna prizewinner, a King Faisal prizewinner, recipients of the Wolf Prize, a Turing Award winner, and several AMS prizewinners.

But more impressive than the prizes is the way this group of speakers exemplifies the depth and range of modern mathematics. Several will address aspects of number theory, particularly the “Langlands Program”, a web of conjectures linking disparate parts of the subject. Other speakers will discuss progress on another great theme in number theory, the Riemann Hypothesis. The program's emphasis on geometry and topology reflects the importance of these areas in mathematics today. Some of the most exciting developments in mathematics in recent years have involved connections between geometry and topology on the one hand and theoretical physics on the other, and several speakers will address this theme. Another theme in the program is the impact of mathematics in biology, where the problems require highly sophisticated mathematical models and present formidable computational challenges. Indeed, the problem of creating more powerful computational methods in all areas of science and technology is a major motivation in mathematics today. The program for “Mathematical Challenges” will demonstrate the impact of mathematics across

many areas of human endeavor, from science to commerce to communications to medicine.

As befits a meeting of this significance, there are a number of special events on the schedule. The first is a trip to the Getty Museum on Sunday, August 6, the day before the meeting begins. The opening ceremonies will take place Sunday evening. The ceremonies will serve as a bridge between the AMS meeting and the MAA Mathfest, which will be held on the UCLA campus just prior to the AMS meeting. A complimentary reception will follow the opening ceremonies. Plans also call for an evening performance at the Hollywood Bowl on Tuesday, August 8. An outdoor barbecue at the spectacular Sunset Canyon on the UCLA campus is scheduled for Thursday, August 10. The meeting concludes with a “Millennium Banquet” on Saturday evening, August 12.

The speakers for “Mathematical Challenges” are being urged to make their talks accessible to a broad mathematical audience. In addition, because the meeting is designed to provide a look toward the future of mathematics, the speakers are being encouraged to speculate on their ideas about where the field is headed and what kinds of problems, themes, and ideas will come to the fore in the next century. The meeting is highly unusual in its intensity, in its coverage of a wide swath of mathematics, and in its orientation to the future. “Mathematical Challenges of the 21st Century” promises to be a meeting of historical significance.

Upcoming issues of the *Notices* will supply further information on the meeting. For the most up-to-date details, consult the Web site <http://www.ams.org/amsmtg/mathchall.html>.

—Allyn Jackson

Plenary Speakers

Mathematical Challenges of the 21st Century

James G. Arthur
University of Toronto
Automorphic Forms and the Langlands Program

Alexander A. Beilinson
University of Chicago
The Geometric Langlands Conjecture

Michael V. Berry
University of Bristol
Waves, Geometry, Arithmetic

- Haim Brezis
University of Paris XI/Rutgers University
Nonlinear Partial Differential Equations
- Alain Connes
Collège de France/Institut des Hautes Études
Scientifiques
Noncommutative Geometry
- David Leigh Donoho
Stanford University
*Interactions among Harmonic Analysis, Statistical
Analysis, and Information Theory*
- Charles Fefferman
Princeton University
The Equations of Fluid Mechanics
- Michael H. Freedman
Microsoft Research
The Physics of Computation
- Ronald L. Graham
University of California, San Diego
AMS/MAA Presidents' Lecture
- Helmut Hofer
Courant Institute, New York University
Symplectic Geometry/Dynamical Systems
- Richard M. Karp
University of Washington
Computational Molecular Biology
- Sergiu Klainerman
Princeton University
Partial Differential Equations
- Maxim Kontsevich
Institut des Hautes Études Scientifiques
*Deformations, Supermanifolds, and Homotopical
Algebra*
- Peter D. Lax
Courant Institute, New York University
Mathematics and Computing
- Simon Levin
Princeton University
Complexity of Biology
- László Lovász
Yale University
Discrete Mathematics and Algorithms
- David Mumford
Brown University
Models of Perception and Inference
- Peter Sarnak
Princeton University
Analysis and Number Theory
- Saharon Shelah
Hebrew University/Rutgers University
Mathematical Logic
- Peter W. Shor
AT&T Labs
*Quantum Computing/Quantum Information
Theory*
- Yakov G. Sinai
Princeton University
Dynamical Systems
- Richard Stanley
Massachusetts Institute of Technology
Algebraic Combinatorics
- Dennis P. Sullivan
City University of New York Graduate School
*Applications of Combinatorial Topology to
Geometry*
- Clifford H. Taubes
Harvard University
Geometry and Topology of the Future
- Jean E. Taylor
Rutgers University
Applications of Geometric Analysis
- William P. Thurston
University of California, Davis
Three-Dimensional Topology and Geometry
- Karen Uhlenbeck
University of Texas, Austin
To Be Announced
- S. R. S. Varadhan
Courant Institute, New York University
Stochastic Analysis and Applications
- Edward Witten
Institute for Advanced Study, Princeton
*Mathematical Impact of Quantum Fields and
Strings*
- S.-T. Yau
Harvard University
Geometry and Its Relation to Physics
- Don B. Zagier
Max-Planck-Institut für Mathematik
Number Theory: Modular Forms