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# Program of the Sessions

New York, New York, April 12–13, 2003

## Saturday, April 12

### Meeting Registration

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7:30 AM – 4:00 PM Lobby, Courant Building

### AMS Exhibit and Book Sale

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7:30 AM – 4:00 PM 13th Floor Lounge, Courant Building

### Special Session on Hopf Algebras and Quantum Groups, I

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8:00 AM – 10:50 AM Room 1302, Courant Building

Organizers: **M. Susan Montgomery**, University of Southern California  
**Earl J. Taft**, Rutgers University  
**Sarah J. Witherspoon**, Amherst College

8:00AM (1) *Generalized Lie Solvability in Associative Algebras.*  
**Yuri Bahturin**, Memorial University of Newfoundland (986-16-79)

8:30AM (2) *On fusion categories.*  
**Dmitri Nikshych**, University of New Hampshire (986-16-98)

9:00AM (3) *Invariant Ideals of Abelian Group Algebras under the Multiplicative Action of a Division Ring.*  
**J. M. Osterburg\***, University of Cincinnati, **D. S. Passman**, University of Wisconsin, Madison, and **A. E. Zalesskii**, University of East Anglia (986-16-121)

9:30AM (4) *Splitting Morphisms of Bialgebras.* Preliminary report.  
**Alessandro Ardizzoni**, **Claudia Menini\***, Dipartimento di Matematica dell'Università di Ferr, and **Dragos Stefan**, University of Bucharest (986-16-84)

10:00AM (5) *Hopf algebras of trees.* Preliminary report.  
**Marcelo Aguiar\***, Texas A&M University, and **Frank Sottile**, University of Massachusetts (986-16-122)

10:30AM (6) *Cherchez la ... representative function.* Preliminary report.  
**Serban Raianu**, California State University, Dominguez Hills (986-16-43)

### Special Session on Galois Module Theory and Hopf Algebras, I

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8:00 AM – 10:40 AM Room 813, Courant Building

Organizers: **Daniel R. Replogle**, College of Saint Elizabeth  
**Robert G. Underwood**, Auburn University

8:00AM (7) *Non-Commutative Differential Forms in a Monoidal Category.* Preliminary report.  
**Alessandro Ardizzoni**, Dipartimento di Matematica dell'Università di Ferrara (Italy) (986-18-47)

8:30AM (8) *Pure braided Hopf algebras.*  
**Mihai D. Staic**, SUNY at Buffalo (986-16-14)

9:00AM (9) *Support Spaces for finite group schemes.*  
**Eric Friedlander**, Northwestern, and **Julia Pevtsova\***, IAS (986-16-19)

9:30AM (10) *Hopf orders in cyclic group rings of order  $p^3$  over local fields.*  
**Lindsay N. Childs\***, University at Albany, and **Robert G. Underwood**, Auburn University Montgomery (986-16-21)

10:20AM (11) *Chains of Hopf-Swan Subgroups.* Preliminary report.  
**Robert G. Underwood\***, Auburn University Montgomery, and **Daniel R Replogle**, College of Saint Elizabeth (986-11-17)

### Special Session on Algebraic and Topological Combinatorics, I

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8:15 AM – 10:45 AM Room 613, Courant Building

Organizers: **Eva-Maria Feichtner**, ETH, Zurich, Switzerland

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**The time limit** for each contributed paper in the sessions is ten minutes. In the Special Sessions the time limit varies from session to session and within sessions. To maintain the schedule, time limits will be strictly enforced.

**For papers with more than one author**, an asterisk follows the name of the author who plans to present the paper at the meeting.

**Papers flagged with a solid triangle (▶)** have been designated by the author as being of possible interest to undergraduate students.

**Abstracts of papers presented** in the sessions at this meeting will be

found in Volume 24, Issue 3 of *Abstracts of papers presented to the American Mathematical Society*, ordered according to the numbers in parentheses following the listings. The middle two digits, e.g., 897-20-1136, refer to the Mathematical Reviews subject classification assigned by the individual author. Groups of papers for each subject are listed chronologically in the *Abstracts*. The last one to four digits, e.g., 897-20-1136, refer to the receipt number of the abstract; abstracts are further sorted by the receipt number within each classification.

**Dmitry N. Kozlov**, University of Bern, Switzerland; and KTH, Stockholm, Sweden

- 8:15AM (12) *Parabolic Kazhdan-Lusztig and R-polynomials for Hermitian symmetric pairs: the hyperoctahedral case.* Preliminary report.  
**Francesco Brenti**, Università di Roma "Tor Vergata" (986-05-204)
- 8:55AM (13) *Positive formulae for quiver polynomials.*  
**Allen Knutson\***, UC Berkeley, **Ezra Miller**, MSRI, and **Mark Shimozono**, Virginia Tech (986-14-215)
- 9:35AM (14) *Hypertoric varieties.*  
**Nicholas Proudfoot**, U.C. Berkeley (986-14-161)
- 10:15AM (15) *On Corner Cut Polytopes.*  
**Irene Mueller**, ETH Zuerich (986-05-129)

### Special Session on Low-Dimensional Topology, I

8:25 AM – 10:55 AM Room 810, Main Building

Organizers: **James Conant**, Cornell University  
**Slava Krushkal**, University of Virginia  
**Rob Schneiderman**, NYU-Courant Institute

- 8:25AM (16) *Normal Surface Theory,  $SL(2,C)$ -Character Varieties and Quantum Invariants.*  
**Charles D Frohman**, The University of Iowa (986-57-42)
- 9:15AM (17) *Derived group of a link group: three applications.* Preliminary report.  
**Jozef H. Przytycki\*** and **Mieczyslaw K. Dabkowski**, GWU (986-57-221)
- 10:05AM (18) *The Kontsevich Integral and the multi-variable Alexander polynomial.* Preliminary report.  
**Andrew J Kricker**, University of Toronto (986-57-118)
- 10:35AM (19) *On relations between string topology and Conway skein theory.* Preliminary report.  
**Uwe Kaiser**, Boise State University (986-57-124)

### Special Session on Analytical and Computational Methods in Electromagnetics, I

8:30 AM – 10:50 AM Room 102, Courant Building

Organizers: **Alexander P. Stone**, University of New Mexico  
**Peter A. McCoy**, U. S. Naval Academy

- 8:30AM (20) *Asymptotic Theory of Dispersive Pulse Dynamics in Causal Media.*  
**Kurt E. Oughstun**, University of Vermont (986-78-235)
- 9:00AM (21) *New Problem Formulation for EM Pulses in Dispersion Models.*  
**Tom Roberts**, Air Force Research Laboratory (986-78-144)
- 9:30AM (22) *Integration in the Complex Plane Associated with Ultrawideband Electromagnetics.*  
**Eric L Mokole\***, Radar Division, Naval Research Laboratory, and **Suren N Samaddar**, SFA, Inc. (986-78-23)
- 10:00AM (23) *Application of Mathematical and Physical Concepts to the Maxwell Equations.*  
**Carl E Baum**, Air Force Research Laboratory (986-78-102)
- 10:30AM (24) *AFOSR Basic Research Projects in Electromagnetics.*  
**Arje Nachman**, AFOSR (986-78-128)

### Session for Contributed Papers, I

8:45 AM – 10:55 AM Room 802, Main Building

- 9:00AM (25) *Ordered Trees (and Forests) Invariant Under a Half-Turn.*  
**David J Halitsky\***, Cumulative Inquiry Inc, and **Robert E Jamison**, Clemson University (986-06-32)
- 9:15AM (26) *Hypergeometrics, Linear Forms involving Logarithms, and Irrationality Criteria for Euler's Constant.*  
**Jonathan Sondow**, New York, NY (986-11-163)
- 9:30AM (27) *On cosets of the unit loop of integral octonions.*  
**Mohammed Abouzaid**, University of Chicago, **Jarod Alper**, Max Planck Institute for Mathematics, **Steve DiMauro**, Boston College, **Justin Grosslight**, Stanford University, and **Derek Smith\***, Lafayette College (986-17-217)
- 9:45AM (28) *New pro-p groups of finite width.* Preliminary report.  
**Mikhail V Ershov**, Yale University (986-20-187)
- 10:00AM (29) *On the transcendental solutions of a certain type of nonlinear differential equations.*  
**P Li**, Univ. of Sci.Tech., China, and **C Yang\***, The Hong Kong Univ. of Sci. & Tech. (986-30-09)
- 10:15AM (30) *On the Nitsche's conjecture for harmonic mappings in  $\mathbb{R}^2$  and  $\mathbb{R}^3$ .*  
**David Martin Kaljaj**, Podgorica, Serbia and Montenegro (986-31-07)
- 10:30AM (31) *A New Asymptotic Series for the Gamma Function.*  
**Xiquan Shi\*** and **Fengshan Liu**, Delaware State University (986-33-15)
- 10:45AM (32) *Limited Newton's Step Algorithm for Convex Programming Problems with Linear Constraints.*  
**Yixun Shi**, Bloomsburg University of Pennsylvania (986-65-135)

### Special Session on Rigidity in Dynamics, Geometry, and Group Theory, I

8:50 AM – 11:00 AM Room 408, Main Building

Organizers: **David Fisher**, CUNY, Herbert H. Lehman College  
**Steven E. Hurder**, University of Illinois at Chicago  
**Kevin M. Whyte**, University of Illinois at Chicago

- 8:50AM (33) *Differentiable rigidity of partially hyperbolic actions of higher-rank abelian groups.* Preliminary report.  
**Anatole Katok**, The Pennsylvania State University (986-37-231)
- 9:40AM (34) *Rigidity for Expanding Actions on Compact Manifolds.*  
**Travis Fisher**, Penn State (986-37-175)
- 10:10AM (35) *Smoothness of small conjugacies and rigidity of standard actions of rank one lattices.*  
**Theron J Hitchman**, University of Michigan (986-37-182)
- 10:40AM (36) *Almost isometric actions, property T and local rigidity.*  
**David M Fisher\***, Lehman College CUNY, and **G A Margulis**, Yale University (986-37-170)

### Special Session on Combinatorial and Statistical Group Theory, I

9:00 AM – 10:50 AM Room 1013, Courant Building

Organizers: **Alexei Myasnikov**, City College, New York

**Vladimir Shpilrain**, City College, New York

- 9:00AM (37) *Random Dehn functions of groups*. Preliminary report.  
**Mark Sapir**, Vanderbilt University (986-20-158)
- 9:30AM (38) *The Conjugacy problem and group embeddings*.  
**Alexander Yu. Olshanskii\*** and **Mark Y Sapir**, Vanderbilt University (986-20-166)
- 10:00AM (39) *Algorithms for fully residually free groups*.  
**Olga Kharlampovich**, McGill University (986-20-85)
- 10:30AM (40) *Is there a bound on the gap between time complexity of the word problem and the Dehn function?* Preliminary report.  
**Ilya Kapovich** and **Paul Schupp\***, University of Illinois (986-20-229)

**Agnes Szilard**, Barnard College, Columbia University

- 9:00AM (48) *Calculations of the Casson-Curtis  $SL(2,C)$  invariant*. Preliminary report.  
**Hans Boden**, McMaster University (986-57-209)
- 9:30AM (49) *Donaldson invariants of mapping tori*.  
**Daniel Ruberman**, Brandeis University, and **Nikolai Saveliev\***, University of Miami (986-57-58)
- 10:00AM (50) *Polynomial knots*. Preliminary report.  
**Alan H Durfee**, Mt Holyoke College (986-57-169)
- 10:30AM (51) *Real Singularities and Open-book Decompositions of the 3-Sphere*.  
**Anne Pichon\***, Institut de Mathématiques de Luminy, Marseille, France, and **José Seade**, Instituto de Matemáticas, Unidad Cuernavaca (986-14-168)

**Special Session on Algebraic Geometry, Integrable Systems, and Gauge Theory, I**

9:00 AM – 10:50 AM Room 513, Courant Building

Organizers: **Marcos Jardim**, University of Massachusetts, Amherst  
**Eyal Markman**, University of Massachusetts, Amherst

- 9:00AM (41) *Hyperkahler integrable systems arising from hyperplane arrangements*. Preliminary report.  
**Michael Thaddeus**, Columbia University (986-32-185)
- 9:40AM (42) *G-Higgs bundles and surface group representations*.  
**Oscar Garcia-Prada**, CSIC, Madrid, Spain (986-51-180)
- 10:20AM (43) *A Fourier-Mukai transform for circle fibrations*. Preliminary report.  
**James F. Glazebrook\***, Eastern Illinois University, **Marcos Jardim**, University of Massachusetts at Amherst, and **Franz W. Kamber**, University of Illinois at Urbana-Champaign (986-58-142)

**Special Session on the History of Mathematics, I**

9:00 AM – 10:50 AM Room 414, Main Building

Organizers: **Patricia R. Allaire**, Queensborough Community College, CUNY  
**Robert E. Bradley**, Adelphi University

- 9:00AM (44) *Studies of the Mohist Mathematics*.  
**L Ma**, Linkoping University (986-01-207)
- 9:30AM (45) *Circles in Old Babylonian mathematics*. Preliminary report.  
**Duncan J. Melville**, St. Lawrence University (986-01-190)
- 10:00AM (46) *Philolaus and the mathematical philosophy of the Pythagoreans*.  
**Hardy Grant**, York University, Toronto (986-01-49)
- 10:30AM (47) *Enrico Martínez in Context*. Preliminary report.  
**Erin Smith\*** and **Bruce Burdick**, Roger Williams University (986-01-228)

**Special Session on Topological Aspects of Complex Singularities, I**

9:00 AM – 10:50 AM Room 401, Main Building

Organizers: **Sylvain E. Cappell**, NYU-Courant Institute  
**Walter D. Neumann**, Barnard College, Columbia University

**Special Session on Contact and Symplectic Geometry, I**

9:00 AM – 10:50 AM Room 411, Main Building

Organizers: **John B. Etnyre**, University of Pennsylvania  
**Joshua M. Sabloff**, University of Pennsylvania

- 9:00AM (52) *Neighborhoods of configurations of symplectic surfaces in symplectic 4-manifolds*.  
**David T Gay**, University of Arizona (986-57-111)
- 9:30AM (53) *Four dimensions from two in symplectic topology*.  
**Margaret F Symington**, Georgia Institute of Technology (986-57-117)
- 10:00AM (54) *Contact  $SU(2)$  actions*.  
**Christopher B Willett**, Indiana University (986-53-52)
- 10:30AM (55) *Distinguishing the Chambers of the Moment Polytope*.  
**Rebecca F Goldin\***, George Mason University, **Tara Holm**, University of CA, Berkeley, and **Lisa Jeffrey**, University of Toronto (986-51-183)

**Special Session on Nonlinear Partial Differential Equations in Differential Geometry, I**

9:10 AM – 11:00 AM Room 824, Main Building

Organizers: **John C. Loftin**, Columbia University  
**Mu-Tao Wang**, Columbia University

- 9:10AM (56) *Singular Real Projective Surfaces—An Analytic Approach*.  
**John C. Loftin**, Columbia (986-53-149)
- 9:50AM (57) *Analysis of Geometric Stability*. Preliminary report.  
**T Sean Paul\***, Columbia University, and **Gang Tian**, M.I.T. (986-32-223)
- 10:30AM (58) *An Isoperimetric Estimate for the Ricci Flow*.  
**Xiaodong Cao**, Columbia University (986-53-212)

**AMS Special Presentation: Part I**

9:30 AM – 10:50 AM Room 101, Courant Building

*TA development using case studies: A workshop for faculty.*  
 Presenter: **Diane Herrmann**, University of Chicago

**Invited Address**

11:10 AM – NOON Room 109, Courant Building

- (59) *Mathematical aspects of financial risk.*  
**Hans Foellmer**, Humboldt University Berlin (986-60-01)

**Invited Address**

1:30 PM – 2:20 PM Room 109, Courant Building

- (60) *Legendrian Knots.*  
**John Etnyre**, University of Pennsylvania (986-57-04)

**Special Session on Hopf Algebras and Quantum Groups, II**

2:30 PM – 5:50 PM Room 1302, Courant Building

Organizers: **M. Susan Montgomery**, University of Southern California  
**Earl J. Taft**, Rutgers University  
**Sarah J. Witherspoon**, Amherst College

- 2:30PM *About copointed Hopf algebras.* Preliminary report.  
 (61) **Luzius Grunenfelder\*** and **Mitja Mastnak**, Dalhousie University (986-16-123)
- 3:00PM *On bimeasuring.* Preliminary report.  
 (62) **Luzius Grunenfelder** and **Mitja Mastnak\***, Dalhousie University (986-16-68)
- 3:30PM *The coradical of the dual of a lifting of a quantum plane.*  
 (63) **N. Andruskiewitsch**, Universidad Nacional de Cordoba, and **M. Beattie\***, Mount Allison University (986-16-74)
- 4:00PM *One-sided Hopf algebra within the framework of quantum groups.* Preliminary report.  
 (64) **Suemi Rodríguez-Romo\***, Universidad Nacional Autonoma de Mexico, and **Earl Taft**, Rutgers University (986-08-54)
- 4:30PM *Coordinate differential calculi defined by YB operators.*  
 (65) **Vladislav Kirillovich Kharchenko**, FES-Cuautitlan, UNAM (986-16-36)
- 5:00PM *On Oriented Quantum Algebras Derived from Representations of the Quantum Double of a Finite-Dimensional Hopf Algebra.*  
 (66) **David E. Radford**, University of Illinois at Chicago (986-16-106)
- 5:30PM *Quantum Symmetry, II.*  
 (67) **Murray Gerstenhaber**, University of Pennsylvania (986-81-119)

**Special Session on Combinatorial and Statistical Group Theory, II**

2:30 PM – 5:50 PM Room 1013, Courant Building

Organizers: **Alexei Myasnikov**, City College, New York  
**Vladimir Shpilrain**, City College, New York

- 2:30PM *A solution of MAGNUS FP15.*  
 ► (68) **Charles F. Rocca**, Western Connecticut State University, and **Edward C Turner\***, SUNY Albany (986-20-89)
- 3:00PM *Stable Numerical Invariants.*  
 (69) **Richard Z Goldstein**, University at Albany (986-20-56)

- 3:30PM *Counting conjugacy classes.*  
 ► (70) **Igor Rivin**, Temple University (986-20-173)
- 4:00PM *Generic properties of the Whitehead Algorithm, of stabilizers in  $Aut(F_k)$  and of one-relator groups.* Preliminary report.  
 (71) **Ilya Kapovich\***, **Paul E. Schupp**, University of Illinois at Urbana-Champaign, and **Vladimir Shpilrain**, City College of CUNY (986-20-103)
- 4:30PM *Growth of the Baumslag-Solitar group  $BS(2,3)$ .* Preliminary report.  
 ► (72) **Briana Cook**, **Eric M Freden\*** and **Alisha McCann**, Southern Utah University (986-20-159)
- 5:00PM *On some problems of the theory of group varieties.*  
 (73) **Sergei V Ivanov**, University of Illinois at Urbana-Champaign (986-20-200)
- 5:30PM *Some New Classes of Groups with Solvable Quadratic Equation Problems.* Preliminary report.  
 ► (74) **Martin Greendlinger\***, Art Institute of Philadelphia, and **Elena Greendlinger**, Community College of Philadelphia (986-20-31)

**Special Session on Algebraic Geometry, Integrable Systems, and Gauge Theory, II**

2:30 PM – 5:40 PM Room 513, Courant Building

Organizers: **Marcos Jardim**, University of Massachusetts, Amherst  
**Eyal Markman**, University of Massachusetts, Amherst

- 2:30PM *Commuting partial differential operators.*  
 (75) **Emma Previato**, IAS and Boston University (986-14-198)
- 3:10PM *From Klein to Painleve via Fourier and Laplace.*  
 (76) **Philip P Boalch**, Columbia University, New York (986-34-55)
- 3:50PM *A Generalized Mukai Product and the Orbifold Cohomology Ring.* Preliminary report.  
 (77) **Andrei H Caldararu**, University of Pennsylvania (986-14-153)
- 4:30PM *Nahm-Mukai transform for instantons over ALE 4-manifolds.* Preliminary report.  
 (78) **Claudio Bartocci\***, Universita degli Studi di Genova, and **Marcos Jardim**, University of Massachusetts Amherst (986-53-238)
- 5:10PM *Twisted Fourier-Mukai transforms for holomorphic symplectic manifolds.*  
 (79) **Justin Sawon**, SUNY at Stony Brook (986-14-67)

**Special Session on the History of Mathematics, II**

2:30 PM – 5:20 PM Room 414, Main Building

Organizers: **Patricia R. Allaire**, Queensborough Community College, CUNY  
**Robert E. Bradley**, Adelphi University

- 2:30PM *Mario Pieri's role in the history of algebraic geometry and foundations of mathematics - a work in progress.* Preliminary report.  
 ► (80) **Elena Anne Marchisotto**, California State University (986-01-150)
- 3:00PM *William Fogg Osgood's 1897 Paper on Non-Uniform Convergence.*  
 ► (81) **Lawrence D'Antonio**, Ramapo College of New Jersey (986-01-91)
- 3:30PM *Charles L. Dodgson's Memoria Technica Cipher.*  
 ► (82) **Francine F. Abeles**, Kean University (986-01-77)
- 4:00PM *Shifts in time: cryptography and randomness.*  
 ► (83) **Sven Dietrich**, Carnegie Mellon University (986-01-219)

- 4:30PM *Wu's Amazing Geometry Theorem Proving Machine.*  
 ▶ (84) **Ronald I Sklar\*** and **Ronald W. Fichter**, St. John's University (986-01-10)
- 5:00PM *History (1947-1999) of Some Evolution Partial Differential Equations: Decay of solutions for some nonlinear, dispersive wave equations.* Preliminary report.  
 (85) **Robert L Luo**, The Richard Stockton College of New Jersey (986-35-94)

- 4:50PM *Abelian Hopf-Galois Structures on Galois Field Extensions of Prime powered Order.*  
 ▶ (95) **Stephen C Featherstonhaugh**, Univeristy at Albany (986-08-29)

**Special Session on Algebraic and Topological Combinatorics, II**

2:30 PM – 5:30 PM Room 613, Courant Building

- Organizers: **Eva-Maria Feichtner**, ETH, Zurich, Switzerland  
**Dmitry N. Kozlov**, University of Bern, Switzerland; and KTH, Stockholm, Sweden
- 2:30PM *Realization of Abelian groups by complex plane nets.* Preliminary report.  
 ▶ (86) **Sergey Yuzvinsky**, University of Oregon (986-14-141)
- 3:05PM *Gram matrices from Steinberg lattices and hyperplane arrangements.* Preliminary report.  
 (87) **Graham Denham\*** and **Nicole Lemire**, University of Western Ontario (986-20-224)
- 3:45PM *Combinatorics of real and complex models of arrangements.* Preliminary report.  
 (88) **Giovanni Gaiffi**, Scuola Normale Superiore di Pisa (986-52-96)
- 4:25PM *Fundamental groups of complex hyperplane arrangements.* Preliminary report.  
 (89) **Alexander I. Suci**, Northeastern University (986-20-232)
- 5:00PM *Complexity of the motion planning problem in the real projective space.*  
 ▶ (90) **Serge Tabachnikov\***, Penn State, **Michael Farber**, Tel Aviv University, and **Sergei Yuzvinsky**, University of Oregon (986-55-93)

**Special Session on Galois Module Theory and Hopf Algebras, II**

2:30 PM – 5:10 PM Room 813, Courant Building

- Organizers: **Daniel R. Replogle**, College of Saint Elizabeth  
**Robert G. Underwood**, Auburn University
- 2:30PM *Stickelberger factorization and local decomposition of resolvends.* Preliminary report.  
 (91) **Leon R McCulloh**, University of Illinois, Urbana-Champaign (986-11-26)
- 3:20PM *Cyclotomic Swan Subgroups and Primitive Roots.*  
 (92) **Timothy Kohl**, Boston University, and **Daniel R Replogle\***, College of Saint Elizabeth (986-11-05)
- 3:50PM *Galois module structure of units in real biquadratic number fields.*  
 (93) **Marcin Mazur\***, Binghamton University, and **Stephen V Ullom**, University of Illinois at Urbana-Champaign (986-11-22)
- 4:20PM *Counting Hopf Galois Structures on Dihedral and Quaternionic Extensions.* Preliminary report.  
 (94) **Timothy Kohl**, Boston University (986-16-25)

**Special Session on Analytical and Computational Methods in Electromagnetics, II**

2:30 PM – 5:00 PM Room 102, Courant Building

- Organizers: **Alexander P. Stone**, University of New Mexico  
**Peter A. McCoy**, U. S. Naval Academy
- 2:30PM *Shape deformations in rough surface scattering: cancellations, conditioning, and improved algorithms.* Preliminary report.  
 (96) **Fernando Reitich**, University of Minnesota (986-78-69)
- 3:00PM *Solution of the Time Domain Electric Field Integral Equation Without the Time Variable.*  
 ▶ (97) **Tapan K Sarkar**, Syracuse University (986-45-109)
- 3:30PM *An S-Matrix Based Hybrid Method.*  
 (98) **Gregory A Kriegsmann**, New Jersey Institute of Technology (986-78-64)
- 4:00PM *On the long-time behavior of unsplit Perfectly Matched Layers.*  
 (99) **Eliane Becache**, INRIA-Rocquencourt, **Peter G. Petropoulos\***, New Jersey Institute of Technology, and **Stephen D. Gedney**, Department of Electrical and Computer Engineering, (986-78-61)
- 4:30PM *The secret lives of complex-source pulsed beams: Their source distributions in the spacetime and Fourier domains.*  
 (100) **Gerald Kaiser**, Virginia Center for Signals and Waves (986-78-126)

**Special Session on Rigidity in Dynamics, Geometry, and Group Theory, II**

2:30 PM – 5:30 PM Room 408, Main Building

- Organizers: **David Fisher**, CUNY, Herbert H. Lehman College  
**Steven E. Hurder**, University of Illinois at Chicago  
**Kevin M. Whyte**, University of Illinois at Chicago
- 2:30PM *The second cohomology of G with RG coefficients, and the structure of G.*  
 (101) **Bruce A Kleiner**, University of Michigan, Ann Arbor (986-20-105)
- 3:00PM *Connectivity invariants of group actions.*  
 (102) **Ross Geoghegan**, Binghamton University (986-55-146)
- 3:30PM *Volumes of representations.*  
 (103) **Bruno Klingler**, Yale University (986-20-230)
- 4:10PM *Finiteness of compact maximal flats of volume less than a given number.*  
 (104) **Hee Oh**, Institute for Advanced Study (986-22-133)
- 4:40PM *Rigidity of surface group extensions.* Preliminary report.  
 (105) **Lee Mosher**, Rutgers University — Newark (986-20-197)
- 5:10PM *A simple description of the Riemannian symmetric spaces of rank one.* Preliminary report.  
 (106) **Adam Koranyi**, H. H. Lehman College (986-53-11)

**Special Session on Contact and Symplectic Geometry, II**

2:30 PM – 5:20 PM Room 411, Main Building

Organizers: **John B. Etnyre**, University of Pennsylvania  
**Joshua M. Sabloff**, University of Pennsylvania

- 2:30PM *Polynomials for Legendrian Links*. Preliminary report. (107)  
**Lisa Traynor\***, Bryn Mawr College, and **Lenny Ng**, Stanford University (986-58-87)
- 3:00PM *Knot and Braid Invariants from Contact Homology*. (108)  
**Lenhard Ng**, AIM and Stanford University (986-57-88)
- 3:30PM *Knots and contact geometry*. (109)  
**Ko Honda**, University of Southern California (986-53-33)
- 4:00PM *Open Book Decompositions and Contact Structures*. Preliminary report. (110)  
**Noah D Goodman**, University of Texas at Austin (986-54-178)
- 4:30PM *Classifying tight contact structures on Seifert fibered spaces*. (111)  
**Stephan Schoenberger**, University of Pennsylvania (986-51-60)
- 5:00PM *On the contactomorphism group of 3-manifolds*. Preliminary report. (112)  
**Nadya Shirokova**, Institute for Advanced Study (986-57-194)

**Special Session on Nonlinear Partial Differential Equations in Differential Geometry, II**

2:30 PM – 5:40 PM Room 824, Main Building

Organizers: **John C. Loftin**, Columbia University  
**Mu-Tao Wang**, Columbia University

- 2:30PM *Stability for the Kahler Ricci Flow on complete non-compact Kahler manifolds*. Preliminary report. (113)  
**Albert Chau\***, Harvard University, and **Oliver C. Schnurer**, Max Planck Institute for Mathematics (986-53-237)
- 3:10PM *A fully nonlinear equation on 4-manifolds with positive scalar curvature*. (114)  
**Jeff A. Viaclovsky**, MIT (986-53-236)
- 3:50PM *Infinite boundary value problem for Monge-Ampere equations*. (115)  
**Bo Guan\***, University of Tennessee, and **Huaiyu Jian**, Tsinghua University (986-35-233)
- 4:30PM *Differential Harnack Estimates in the Ricci Flow*. (116)  
**Bing Cheng**, Harvard University (986-53-202)
- 5:10PM *On the  $L^2$  cohomology of convex cocompact hyperbolic manifolds*. (117)  
**Xiaodong Wang**, M.I.T. (986-53-167)

**Special Session on Low-Dimensional Topology, II**

2:30 PM – 5:40 PM Room 810, Main Building

Organizers: **James Conant**, Cornell University  
**Slava Krushkal**, University of Virginia  
**Rob Schneiderman**, NYU-Courant Institute

- 2:30PM *Ribbon concordance and higher order Arf invariants*. Preliminary report. (118)  
**Kent E Orr\***, Indiana University Bloomington, and **Tim D Cochran**, Rice University (986-57-188)

- 3:20PM *Holomorphic disks and knot invariants*. (119)  
**Peter Steven Ozsvath\***, Columbia University, and **Zoltan Szabo**, Princeton University (986-57-186)
- 4:10PM *Geometric simple connectivity in high dimensions in connection with problems in low dimensional topology*. (120)  
**V. Poenaru**, Universite' de Paris-Sud Centre d'Orsay (986-57-152)
- 5:00PM *Attempts to prove the surgery conjecture for 4-manifolds*. Preliminary report. (121)  
**Frank Quinn\***, Virginia Tech, and **Slava Krushkal**, University of Virginia (986-57-62)

**Session for Contributed Papers, II**

2:30 PM – 4:10 PM Room 802, Main Building

- 2:30PM *The Inverse Periodic Spectral Theory of the Euler-Bernoulli Equation I: The "Perfect Square" Case*. (122)  
**Vassilis G Papanicolaou**, National Technical University of Athens (986-34-46)
- 2:45PM *Riesz Transforms Associated with the Laguerre Polynomials*. Preliminary report. (123)  
**Andrew J Incognito**, Coastal Carolina University (986-42-57)
- 3:00PM *Isomorphisms of  $R$  Sequences*. Preliminary report. (124)  
**Andrew B Perry**, Springfield College (986-46-39)
- 3:15PM *An approach to Dvoretzky-Rogers theorem via Hadamard matrices*. (125)  
**Nicholas Nicholas Vakhania\*** and **Vakhtang Varlam Kvaratskhelia**, Institute of Computational Mathematics, Georgian Academy of Sciences (986-46-40)
- 3:30PM *Some Approximations to the Distribution of the Least Squares Estimator of the Autoregressive Parameter in AR(1) Model*. (126)  
**Leslie Chandrakantha**, John Jay College/CUNY (986-62-63)
- 3:45PM *The Kinematical Rotations of  $N$ -particle Hyperspherical basis. Construction of Symmetrized Basic Hyperspherical Functions*. (127)  
**Lia Leon Chachanidze-Margolin\***, K. Gibbs College, New York, NY, and **Nina Boris Krupennikova**, Moscow State University (986-70-12)
- 4:00PM *Turing Instabilities in a Frequency and Density Dependent Diploid Dynamic*. Preliminary report. (128)  
**Bernard P Brooks**, Rochester Institute of Technology (986-92-18)

**AMS Special Presentation: Part II**

2:30 PM – 4:30 PM Room 101, Courant Building

*TA development using case studies: A workshop for faculty*.  
 Presenter: **Diane Herrmann**, University of Chicago

**Special Session on Topological Aspects of Complex Singularities, II**

3:00 PM – 6:00 PM Room 401, Main Building

Organizers: **Sylvain E. Cappell**, NYU-Courant Institute  
**Walter D. Neumann**, Barnard College, Columbia University  
**Agnes Szilard**, Barnard College, Columbia University

- 3:00PM *The link of  $\{f(x, y) + z^n = 0\}$  and Zariski's conjecture.*  
(129) **R Mendris\*** and **A Nemethi**, The Ohio State University (986-32-82)
- 3:30PM *Normal surface singularities and the Seiberg-Witten invariant.*  
(130) **Andras Nemethi**, The Ohio State University (986-32-176)
- 4:00PM *Complete intersection singularities of splice type.*  
(131) **Walter D Neumann**, Barnard College, Columbia University, and **Jonathan Wahl\***, University of North Carolina (986-57-192)
- 4:30PM *The Casson Invariant Conjecture.*  
(132) **Walter D Neumann\***, Barnard College, Columbia University, and **Jonathan Wahl**, University of North Carolina (986-57-191)
- 5:00PM *Rho invariants of Seifert fibered manifolds.*  
(133) **Edward Y. Miller**, Brooklyn Polytechnic University (986-57-239)
- 5:30PM Problem session

## Sunday, April 13

### Meeting Registration

8:00 AM – NOON Lobby, Courant Building

### Special Session on Hopf Algebras and Quantum Groups, III

8:00 AM – 10:50 AM Room 1302, Courant Building

Organizers: **M. Susan Montgomery**, University of Southern California  
**Earl J. Taft**, Rutgers University  
**Sarah J. Witherspoon**, Amherst College

- 8:00AM *Co-Frobenius Hopf algebras and the coradical filtration.*  
(134) **N. Andruskiewitsch**, University of Cordoba, and **S. Dascalescu\***, Kuwait University (986-16-35)
- 8:30AM *Generalized cocommutative elements and Nakayama automorphisms.*  
(135) **Miriam Cohen\***, Ben-Gurion University, and **Sara Westreich**, Bar-Ilan University (986-16-115)
- 9:00AM *Higher Frobenius-Schur indicators.* Preliminary report.  
(136) **Yorck Sommerhäuser**, Universität München (986-16-116)
- 9:30AM *Semisimple Hopf algebras of dimension  $p^n$ .*  
(137) Preliminary report.  
**Yevgenia Kashina\***, DePaul University, and **Mark Kleiner**, Syracuse University (986-16-97)
- 10:00AM *Semisimplicity of Hopf Algebra of Dimension  $pq$ .*  
(138) **Siu-Hung Ng**, Towson University (986-16-86)
- 10:30AM *Quantum lines over non-cocommutative cosemisimple Hopf algebras.*  
(139) **Corina Calinescu\***, Rutgers University, New Brunswick, **Sorin Dascalescu**, Kuwait University, **Akira Masuoka**, University of Tsukuba, and **Claudia Menini**, Ferrara University (986-16-51)

### Special Session on Combinatorial and Statistical Group Theory, III

8:00 AM – 10:50 AM Room 1013, Courant Building

Organizers: **Alexei Myasnikov**, City College, New York  
**Vladimir Shpilrain**, City College, New York

- 8:00AM *Geodesics in the Braid Group on Three Strands and a Related Group.*  
▶ (140) **Lucas A Sabalka**, U. of Illinois at Champaign-Urbana (986-20-160)
- 8:30AM *A Wilson group of non-uniformly exponential growth.*  
(141) **Laurent Bartholdi**, U. C. Berkeley (986-20-127)
- 9:00AM *Nonpositive immersions, local indicability and coherence.*  
(142) **Daniel T. Wise**, McGill University (986-57-164)
- 9:30AM *Uniform non-amenability.*  
(143) **Enric Ventura**, Universitat Politècnica de Catalunya (986-20-83)
- 10:00AM *Removable Pairs in Trivial Braid Words.*  
(144) **Patrick Dehornoy**, Universite de Caen (986-20-136)
- 10:30AM *On the coherence of coherent-by-cyclic groups.*  
(145) Preliminary report.  
**Inna Bumagin\*** and **Daniel T Wise**, McGill University (986-20-181)

### AMS Exhibit and Book Sale

8:00 AM – NOON 13th Floor Lounge, Courant Building

### Special Session on Algebraic and Topological Combinatorics, III

8:15 AM – 10:45 AM Room 613, Courant Building

Organizers: **Eva-Maria Feichtner**, ETH, Zurich, Switzerland  
**Dmitry N. Kozlov**, University of Bern, Switzerland; and **KTH**, Stockholm, Sweden

- 8:15AM *Topological properties of active orders for matroid bases.* Preliminary report.  
(146) **Bruce E Sagan\*** and **Rieuwert J Blok**, Michigan State University (986-06-70)
- 8:55AM *The no-perfect-matching complex and related complexes.*  
(147) **Svante Linusson**, Linköping University, **John Shareshian\***, Washington University, **Michelle Wachs**, University of Miami, and **Volkmar Welker**, Philipps-Universität Marburg (986-05-193)
- 9:35AM *Maps and graph colorings.* Preliminary report.  
▶ (148) **Erik K. Babson\***, University of Washington, Seattle, and **Dmitry Kozlov**, KTH (986-05-216)
- 10:15AM *Topological questions on non-Euclidean oriented matroids.* Preliminary report.  
(149) **Laura M Anderson**, Binghamton University (986-05-225)

### Special Session on Algebraic Geometry, Integrable Systems, and Gauge Theory, III

8:30 AM – 11:00 AM Room 513, Courant Building

Organizers: **Marcos Jardim**, University of Massachusetts, Amherst  
**Eyal Markman**, University of Massachusetts, Amherst

- 8:30AM *Cohomology rings of symplectic quotients.*  
(150) **Lisa Claire Jeffrey**, University of Toronto (986-58-108)
- 9:10AM *Classical geometry and Painleve VI.* Preliminary report.  
(151) **Nigel J Hitchin**, Oxford University (986-14-157)
- 9:50AM *Elliptic Sklyanin integrable systems.*  
(152) **Jacques Hurtubise\***, McGill and CRM, and **Eyal Markman**, U. Massachusetts (986-14-143)
- 10:30AM Discussion

**Special Session on Analytical and Computational Methods in Electromagnetics, III**

8:30 AM – 10:50 AM Room 102, Courant Building

Organizers: **Alexander P. Stone**, University of New Mexico

**Peter A. McCoy**, U. S. Naval Academy

- 8:30AM *The inverse electromagnetic scattering problem for screens.* Preliminary report.  
(153) **Fioralba Cakoni**, University of Delaware (986-35-75)
- 9:00AM *Numerical Simulation of Electromagnetic Fields in a Complex, Two-Dimensional Rectangular Cavity.* Preliminary report.  
▶ (154) **Terence J. Wieting\***, **Dong Ho Wu**, US Naval Research Laboratory, **Louis F. Libelo**, SFA, Inc., **Michael I. Haftel**, US Naval Research Laboratory, and **Jeff Braunstein**, Rensselaer Polytechnic Institute (986-78-227)
- 10:00AM *A Differential-Geometric Method in Electromagnetic Lens Design.*  
(155) **Alexander P Stone**, University of New Mexico (986-78-104)
- 10:30AM *Artificial Boundary Conditions for the Numerical Simulation of Unsteady Waves Governed by Vector Models.*  
(156) **Semyon V Tsynkov**, North Carolina State University (986-65-120)

**Special Session on Topological Aspects of Complex Singularities, III**

8:30 AM – 10:50 AM Room 401, Main Building

Organizers: **Sylvain E. Cappell**, NYU-Courant Institute

**Walter D. Neumann**, Barnard College, Columbia University

**Agnes Szilard**, Barnard College, Columbia University

- 8:30AM *On the embedded resolution of cyclic surface singularities.* Preliminary report.  
(157) **Agnes Szilard**, Barnard College, Columbia University (986-14-214)
- 9:00AM *Recent progress in the study of some non-isolated singularities.* Preliminary report.  
(158) **Lee J. McEwan**, The Ohio State University (986-14-179)
- 9:30AM *On Hodge spectrum and multiplier ideals.*  
(159) **Nero Budur**, University of Illinois at Chicago (986-14-34)
- 10:00AM *Stringy invariants for general singularities.*  
(160) **Willem Veys**, University of Leuven (986-14-95)
- 10:30AM *Calculating Euler Characteristics of Vanishing Cycles.*  
(161) **David B. Massey**, Northeastern University (986-32-66)

**Special Session on Contact and Symplectic Geometry, III**

8:30 AM – 10:50 AM Room 411, Main Building

Organizers: **John B. Etnyre**, University of Pennsylvania

**Joshua M. Sabloff**, University of Pennsylvania

- 8:30AM *Fillings by pseudoholomorphic curves and the Chord Problem in Contact Geometry.*  
(162) **Casim Abbas**, Michigan State University (986-53-37)
- 9:00AM *Counting pseudo-holomorphic curves in four-manifolds.*  
(163) **Michael Hutchings**, UC Berkeley, and **Michael Sullivan\***, University of Michigan (986-53-45)
- 9:30AM *Contact homology, contact embeddings and a partial order of contactomorphisms.* Preliminary report.  
(164) **Sang Seon Kim**, University of Southern California (986-53-156)
- 10:00AM *Unknottedness of Lagrangian tori in the standard symplectic  $\mathbb{R}^4$ .* Preliminary report.  
▶ (165) **Alexander Ivrii**, Stanford University (986-53-201)
- 10:30AM *Fredholm Theory and Transversality for Non-compact Pseudoholomorphic Curves in Symplectizations.*  
(166) **Dragomir L Dragnev**, University of Southern California (986-58-48)

**Special Session on Nonlinear Partial Differential Equations in Differential Geometry, III**

8:30 AM – 11:00 AM Room 405, Main Building

Organizers: **John C. Loftin**, Columbia University

**Mu-Tao Wang**, Columbia University

- 8:30AM *Remarks on a Class of Solutions to the Minimal Surface System.*  
(167) **Mu-Tao Wang**, Columbia University (986-53-137)
- 9:10AM *Analytic properties of harmonic maps into Teichmüller spaces.*  
(168) **Sumio Yamada**, University of Alabama at Birmingham (986-58-145)
- 9:50AM *Special Lagrangian Submanifolds with Boundary and Lagrangian Free Boundary Plateau Problem.*  
(169) **Weiyang Qiu**, Harvard University (986-53-140)
- 10:30AM *Deformations of  $G_2$  Structures on Manifolds.* Preliminary report.  
(170) **Spiro Karigiannis**, Harvard University (986-53-139)

**Special Session on the History of Mathematics, III**

8:45 AM – 11:00 AM Room 414, Main Building

Organizers: **Patricia R. Allaire**, Queensborough Community College, CUNY

**Robert E. Bradley**, Adelphi University

- 8:45AM *A Golden Decade: Euler in Berlin, 1746 - 1756 - A Preliminary Study.* Preliminary report.  
▶ (171) **Ronald S. Calinger**, Catholic University of America (986-01-218)
- 9:30AM *Euler's Solution of the Basel Problem - The Longer Story.*  
▶ (172) **Ed Sandifer**, Western Connecticut State U (986-01-65)
- 10:00AM *Euler's All-Purpose Counterexample.*  
▶ (173) **Robert E. Bradley**, Adelphi University (986-01-206)



10:30AM *d'Alembert's proof of the Fundamental Theorem of Algebra: mathematical issues.*  
 ▶ (174) **Christopher Baltus**, SUNY College at Oswego (986-01-50)

10:20AM *Diagonalization of Representation Operators for the Quantum Algebra  $U_q(su_{1,1})$ .*  
 (184) **N M Atakishiyev\*** and **A U Klimyk**, Instituto de Matematicas, UNAM (986-16-30)

**Special Session on Rigidity in Dynamics, Geometry, and Group Theory, III**

8:50 AM – 11:00 AM **Room 408, Main Building**

Organizers: **David Fisher**, CUNY, Herbert H. Lehman College  
**Steven E. Hurder**, University of Illinois at Chicago  
**Kevin M. Whyte**, University of Illinois at Chicago

8:50AM *Flats in outer space.* Preliminary report.  
 (175) **Karen Vogtmann**, Cornell University (986-20-220)

9:40AM *Quasi-isometric rigidity for some nonuniform  $S$ -arithmetic lattices.*  
 (176) **Kevin Wortman**, University of Chicago (986-20-210)

10:10AM *Centralizers of Partially Hyperbolic Diffeomorphisms.*  
 (177) **Lizzie Burslem**, University of Michigan (986-37-226)

10:40AM *Area preserving group actions on surfaces.*  
 (178) Preliminary report.  
**John Franks\***, Northwestern University, and **Michael Handel**, Lehman College, CUNY (986-37-71)

**Special Session on Low-Dimensional Topology, III**

8:55 AM – 10:50 AM **Room 810, Main Building**

Organizers: **James Conant**, Cornell University  
**Slava Krushkal**, University of Virginia  
**Rob Schneiderman**, NYU-Courant Institute

8:50AM *A-polynomial and Bloch invariants of hyperbolic 3-manifolds.*  
 (179) **Abhijit Champanerkar**, Columbia University (986-57-53)

9:20AM *Lie bialgebras of curves on surfaces and their computation.*  
 ▶ (180) **Moira Chas**, SUNY at Stony Brook (986-57-165)

10:10AM *Remarks on combinatorial Yamabe flows.*  
 (181) Preliminary report.  
**Feng Luo**, Rutgers University (986-57-125)

**Special Session on Galois Module Theory and Hopf Algebras, III**

9:00 AM – 10:40 AM **Room 813, Courant Building**

Organizers: **Daniel R. Repogle**, College of Saint Elizabeth  
**Robert G. Underwood**, Auburn University

9:00AM *Nearly perfect complexes and Weil étale cohomology.* Preliminary report.  
 (182) **David Burns**, King's College London, U.K. (986-11-27)

9:50AM *Structure of a Quantum Hyperalgebra.*  
 (183) **W. Chin** and **L. Krop\***, DePaul University (986-16-41)

**Invited Address**

11:10 AM – NOON **Room 109, Courant Building**

(185) *The Riemannian geometry of the 2-Wasserstein metric and the nonlinear kinetic Fokker-Planck equation.*  
**Wilfrid Gangbo**, Georgia Institute of Technology (986-35-03)

**Invited Address**

1:30 PM – 2:20 PM **Room 109, Courant Building**

(186) *Title to be announced.*  
**Matthias Aschenbrenner**, University of California Berkeley (986-03-02)

**Special Session on Hopf Algebras and Quantum Groups, IV**

2:30 PM – 5:20 PM **Room 1302, Courant Building**

Organizers: **M. Susan Montgomery**, University of Southern California  
**Earl J. Taft**, Rutgers University  
**Sarah J. Witherspoon**, Amherst College

2:30PM *Invariants of Skew Derivations.*  
 (187) **Jeffrey Bergen\***, DePaul University, and **Piotr Grzeszczuk**, Bialystok Technical Institute (986-16-110)

3:00PM *Representing relatively free coalgebras by formal sums.*  
 (188) **Mikhail V. Kochetov**, University of Saskatchewan (986-16-110)

3:30PM *Divided power Hopf algebras over integral domains.* Preliminary report.  
 (189) **Richard E. Block**, University of California Riverside (986-13-112)

4:00PM *Local theory of almost split sequences for comodules.*  
 (190) **William Chin\***, DePaul University, **Declan Quinn** and **Mark Kleiner**, Syracuse University (986-16-92)

4:30PM *Quasi-Hopf algebras, Hopf modules, and monoidal categories.* Preliminary report.  
 (191) **Peter Schauenburg**, Mathematisches Institut, University of Munich, Ger (986-16-114)

5:00PM *Schur Algebras and Enveloping Algebras.*  
 (192) Preliminary report.  
**Anthony Giaquinto**, Loyola University Chicago (986-16-171)

**Special Session on Combinatorial and Statistical Group Theory, IV**

2:30 PM – 5:50 PM **Room 1013, Courant Building**

Organizers: **Alexei Myasnikov**, City College, New York  
**Vladimir Shpilrain**, City College, New York

2:30PM *Recent developments in the theory of Fuchsian and Kleinian groups.*  
 ▶ (193) **Gerhard Rosenberger**, Universität Dortmund (986-20-59)

- 3:00PM *On Non-Trivially Discriminating Groups.*  
(194) **Gilbert Baumslag**, City University of New York, **Benjamin Fine\***, Fairfield University, **Anthony M. Gaglione**, United States Naval Academy, and **Dennis Spellman**, Temple University (986-20-203)
- 3:30PM *Arithmetic properties of lattices in rank 2*  
(195) *Kac-Moody groups over finite fields.* Preliminary report.  
**Lisa Carbone**, Rutgers University (986-20-81)
- 4:00PM *Growth in semigroup varieties.*  
(196) **Lev M Shneerson**, Hunter College, The City University of New York (986-20-155)
- 4:30PM *A partial result on the complexity of Whitehead's algorithm.*  
(197) **Donghi Lee**, College of Staten Island, CUNY (986-20-196)
- 5:00PM *Groups generated by positive multi-twists and the fake lantern problem.*  
▶ (198) **Hessam Hamidi-Tehrani**, New York, NY (986-20-90)
- 5:30PM *Groups of simultaneously even- and  $p$ -type.*  
(199) Preliminary report.  
**Inna A Korchagina**, Rutgers, The State University of NJ (986-20-208)

**Special Session on Algebraic Geometry, Integrable Systems, and Gauge Theory, IV**

2:30 PM – 5:00 PM Room 513, Courant Building

Organizers: **Marcos Jardim**, University of Massachusetts, Amherst

**Eyal Markman**, University of Massachusetts, Amherst

- 2:30PM *Supersymmetry and stability of A-branes.*  
(200) Preliminary report.  
**Bobby Acharya**, Rutgers University, **Ron Donagi** and **Tony Pantev\***, University of Pennsylvania (986-14-195)
- 3:10PM *Instantonic calculus, equivariant cohomology and partition function of topological  $N=2$  super Yang-Mills theory.*  
(201) **Ugo Bruzzo**, International School for Advanced Studies (986-81-174)
- 3:50PM *Fourier-Mukai transform for noncommutative tori and mirror symmetry.* Preliminary report.  
(202) **Alexander Polishchuk**, Boston University (986-14-134)
- 4:30PM *Differential Isomorphism and Equivalence of Algebraic Varieties.*  
(203) **Yuri Berest\***, Cornell University, and **George Wilson**, Imperial College (986-14-213)

**Special Session on the History of Mathematics, IV**

2:30 PM – 3:50 PM Room 414, Main Building

Organizers: **Patricia R. Allaire**, Queensborough Community College, CUNY

**Robert E. Bradley**, Adelphi University

- 2:30PM *The Followers of Franklin.*  
▶ (204) **Paul C. Pasles**, Villanova University (986-01-44)
- 3:00PM *The Mathematics Curriculum At West Point: The First Hundred Years.*  
▶ (205) **V. Frederick Rickey** and **Amy Shell-Gellasch\***, United States Military Academy (986-01-38)
- 3:30PM *Mathematical Aspects of Franz Reuleaux Kinematic Model Collection.* Preliminary report.  
▶ (206) **Daina Taimina**, Cornell University (986-01-177)

**Special Session on Rigidity in Dynamics, Geometry, and Group Theory, IV**

2:30 PM – 5:30 PM Room 408, Main Building

Organizers: **David Fisher**, CUNY, Herbert H. Lehman College  
**Steven E. Hurder**, University of Illinois at Chicago  
**Kevin M. Whyte**, University of Illinois at Chicago

- 2:30PM *On spaces of higher spherical rank.*  
(207) **Ralf J Spatzier**, University of Michigan (986-53-211)
- 3:00PM *The Properness Conjecture for 3-Dimensional Affine Actions.* Preliminary report.  
(208) **W. Goldman\***, University of Maryland, **F. Labourie**, University of Paris, Sud, and **G. Margulis**, Yale University (986-37-130)
- 3:30PM *Strong isospectrality for groups of Lorentzian transformations.* Preliminary report.  
(209) **Todd A. Drumm\***, Swarthmore College, **Virginie Charette**, University of Manitoba, and **William M. Goldman**, University of Maryland (986-51-73)
- 4:10PM *Coding of geodesics on modular surfaces.*  
(210) Preliminary report.  
**Svetlana Katok**, The Pennsylvania State University (986-20-222)
- 4:40PM *Cohomology of skew extensions of hyperbolic systems.*  
(211) **Dmitry Dolgopyat**, University of Maryland (986-37-205)
- 5:10PM *Topological Models of Simple Siegel Polynomials.*  
(212) **Gaofei Zhang**, The City University of New York (986-37-28)

**Special Session on Contact and Symplectic Geometry, IV**

2:30 PM – 3:50 PM Room 411, Main Building

Organizers: **John B. Etnyre**, University of Pennsylvania  
**Joshua M. Sabloff**, University of Pennsylvania

- 2:30PM *Symplectomorphism groups of toric manifolds.*  
(213) Preliminary report.  
**Dusa McDuff**, Stony Brook University (986-53-138)
- 3:00PM *The Hofer-Zehnder capacity near symplectic submanifolds.* Preliminary report.  
(214) **Ely Kerman**, SUNY Stony Brook (986-37-154)
- 3:30PM *Locally conformal Dirac structures and infinitesimal automorphisms.*  
(215) **Aissa Wade**, The Pennsylvania University (986-53-162)

**Special Session on Nonlinear Partial Differential Equations in Differential Geometry, IV**

2:30 PM – 5:40 PM Room 405, Main Building

Organizers: **John C. Loftin**, Columbia University  
**Mu-Tao Wang**, Columbia University

- 2:30PM *Alexandrov type inequalities for Cartan-Hadamard manifolds.*  
(216) **Joel Spruck**, Johns Hopkins University (986-35-101)
- 3:10PM *The Local Isometric Embedding Problem for 2-Dimensional Riemannian Manifolds.*  
(217) **Marcus A. Khuri**, University of Pennsylvania (986-35-172)

- 3:50PM *A glueing theorem for the Ginzburg-Landau equations in higher dimensions.*  
(218) **Simon A Brendle**, Princeton University (986-53-76)
- 4:30PM *Almost Rigidity and Stability.*  
(219) **Christina Sormani**, Lehman College, CUNY (986-58-189)
- 5:10PM *Mean Curvature Flows and Homotopy of Maps Between Spheres.*  
(220) **Mao-Pei Tsui**, Columbia University (986-53-148)

- 3:30PM *Bifurcations in Gradient Systems with Symmetry.*  
(229) Preliminary report.  
**Christopher M. Herald**, University of Nevada, Reno (986-57-80)
- 4:00PM *Intersection Alexander Polynomials.*  
(230) **Greg Friedman**, Yale University (986-57-78)

**Lesley M. Sibner**  
Associate Secretary  
Brooklyn, New York

***Special Session on Low-Dimensional Topology, IV***

2:30 PM – 4:10 PM **Room 810, Main Building**

Organizers: **James Conant**, Cornell University  
**Slava Krushkal**, University of Virginia  
**Rob Schneiderman**, NYU-Courant Institute

- 2:30PM *Nocyclic Covers of Knot Complements.*  
(221) **Nathan D Broaddus**, Columbia University (986-57-131)
- 3:00PM *Straight lines intersecting a knot in four points.*  
(222) **Ryan Budney\***, Rochester, **Jim Conant**, Cornell, **Kevin Scannell** and **Dev Sinha**, New York NY (986-57-107)
- 3:30PM *Stabilization in the braid groups.*  
(223) **Joan Birman**, Columbia University, Barnard College (986-57-132)

***Special Session on Algebraic and Topological Combinatorics, IV***

2:45 PM – 5:15 PM **Room 613, Courant Building**

Organizers: **Eva-Maria Feichtner**, ETH, Zurich, Switzerland  
**Dmitry N. Kozlov**, University of Bern, Switzerland; and KTH, Stockholm, Sweden

- 2:45PM *Some remarks about locally-defined combinatorial invariants.*  
(224) **Robin Forman**, Rice University (986-57-199)
- 3:25PM *Combinatorial-topological aspects of hyperbolic volume.*  
(225) **Ruth Kellerhals**, University of Fribourg (986-52-147)
- 4:05PM *Spreads of non-singular pairs in symplectic vector spaces.*  
(226) **Steven H. Weintraub**, Lehigh Univ. (986-52-20)
- 4:45PM *Cluster algebras and Poisson Geometry.*  
(227) **Michael Shapiro\***, Michigan State University, **Michael Gekhtman**, University of Notre Dame, and **Alek Vainshtein**, University of Haifa (986-57-151)

***Special Session on Topological Aspects of Complex Singularities, IV***

3:00 PM – 4:20 PM **Room 401, Main Building**

Organizers: **Sylvain E. Cappell**, NYU-Courant Institute  
**Walter D. Neumann**, Barnard College, Columbia University  
**Agnes Szilard**, Barnard College, Columbia University

- 3:00PM *Topological Invariants of Stratified Maps with Non-Witt Target.*  
(228) **Markus Banagl**, University of Cincinnati (986-57-72)