Program of the Sessions

Lawrenceville, New Jersey, April 17–18, 2004

Saturday, April 17

Meeting Registration

7:30 AM – 4:30 PM   **Calvalla Room, Bart Luedeke (Student) Center**

AMS Exhibit and Book Sale

7:30 AM – 4:30 PM   **Calvalla Room, Bart Luedeke (Student) Center**

Special Session on CR Geometry and Singularities, I

8:00 AM – 10:40 AM   **Room 218, Memorial Hall**

Organizers: **Joseph J. Kohn**, Princeton University
John P. D'Angelo, University of Illinois
Xiaojun Huang, Rutgers University
Andreea Nicoara, Harvard University

8:00AM (1) *Special Toeplitz operators associated to the Bergman projection.*
Jeffery D McNeal, Ohio State University (997-32-47)

9:00AM (2) *Boundary properties of solutions of planar complex vector fields.*
Shif Berhanu*, Temple University, and **Jorge Hounie**, Federal University of Sao Carlos (997-35-14)

10:00AM (3) *Subelliptic boundary value problems for the Spin-c Dirac operator.* Preliminary report.
Charles L. Epstein, University of PA (997-32-37)

Special Session on Variational Methods in Classical Mechanics, I

8:00 AM – 11:00 AM   **Room 219, Memorial Hall**

Organizers: **John N. Mather**, Princeton University
Vadim Y. Kaloshin, Institute for Advanced Study

8:00AM (4) *Minimizing methods for the N-body problem without equal-mass constraint.*
Kuo-Chang Chen, University of Arizona (997-37-163)

9:00AM (5) *Holomorphic Curves and Reeb Flows on Closed Three-manifolds.* Preliminary report.
Helmut H Hofer, Courant Institute (997-37-170)

10:15AM (6) *Shadowing collision orbits of the 3 body problem.*
Sergey Bolotin, Univeristy of Wisconsin - Madison (997-37-269)

Special Session on Commutative Algebra and Algebraic Geometry, I

8:00 AM – 10:50 AM   **Room 210, Memorial Hall**

Organizers: **Alberto Corso**, University of Kentucky
Claudia Polini, University of Notre Dame
Wolmer V. Vasconcelos, Rutgers University

8:00AM (7) *Homological invariants of modules over local homomorphisms.*
Luchezar L. Avramov*, University of Nebraska, Lincoln, **Srikanth Iyengar**, University of Missouri, Columbia, and **Claudia Miller**, Syracuse University (997-13-137)

8:30AM (8) *b-generic modules.* Preliminary report.
Hara Charalambous, University at Albany, SUNY (997-13-200)

9:00AM (9) *On Extensions of Modules.*
Janet Striuli, University of Kansas (997-13-125)

9:30AM (10) *The tracking number of an algebra.*
Kia Dalili, Rutgers University (997-13-68)

10:00AM (11) *The integral closure of monomial rings.* Preliminary report.
Joseph P. Brennan, North Dakota State University (997-13-191)

10:30AM (12) *Normalization of modules.*
Jooyoun Hong, Purdue University (997-13-215)

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 25, 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.

Special Session on Geometry of Protein Modelling, I

8:00 AM – 10:50 AM   **Room 102, Science and Technology Center**

Organizers: **Ileana Streinu**, Smith College

Jack Snoeyink, University of North Carolina at Chapel Hill

8:00AM *Exploring Protein Flexibility through Bond Networks.*
(13) **Leslie A. Kuhn**, Michigan State University (997-92-263)

8:30AM *Network Rigidity at Finite Temperatures and Free*
(14) *Energy Landscapes.*
Donald J Jacobs, California State University, Northridge (997-82-237)

9:00AM *Perspectives on Protein (un)Folding from Rigidity.*
▶ (15) **A. J. Rader**, University of Pittsburgh (997-74-175)

9:30AM *Sampling Protein Conformations and Pathways by a*
▶ (16) *Coarse Graining Algorithm.*
Ming Lei*, Brandeis University, **Maria I. Zavodszky**, **Leslie A. Kuhn**, Michigan State University, and **M. F. Thorpe**, Arizona State University (997-92-213)

10:00AM *An Automated Protocol for Designing Functionally*
(17) *Orthogonal Protein Interfaces.* Preliminary report.
Brian Kuhlman*, **Deanne Sammond** and **Ziad Eletr**, University of North Carolina at Chapel Hill (997-92-245)

10:30AM *Disulfide connectivity prediction using secondary*
(18) *structure information.* Preliminary report.
Fabrizio Ferre and **Peter G Clote***, Boston College (997-92-244)

Special Session on Elliptic Surfaces and Elliptic Fibrations, I

8:20 AM – 10:50 AM   **Room 201, Memorial Hall**

Organizers: **William L. Hoyt**, Rutgers University
Joseph H. Silverman, Brown University
Charles F. Schwartz, Rider University

8:20AM Welcoming Remarks.

8:30AM *Sections of Yoshida Elliptic $K3$ Surfaces.* Preliminary
(19) report.
William L Hoyt, Rutgers University, and **Charles F Schwartz***, Rider University (997-14-149)

9:00AM *Exlicit stable models of elliptic surfaces.*
(20) **Gabriele La Nave**, Courant Institute (997-14-19)

9:30AM *The Neron-Severi Group of Certain Algebraic*
(21) *Surfaces.* Preliminary report.
Michael I Rosen, Brown University (997-11-273)

10:00AM *Complex multiplication for elliptic curves associated*
▶ (22) *with sections of certain elliptic surfaces.* Preliminary
report.
William L Hoyt*, Rutgers University, and **Charles F Schwartz**, Rider University (997-14-51)

10:30AM *Common divisors of elliptic divisibility sequences*
(23) *over function fields.* Preliminary report.
Joseph H Silverman, Brown University (997-11-18)

Special Session on Analytic Convex Geometry, I

8:30 AM – 10:50 AM   **Room 302, Memorial Hall**

Organizers: **Alina Stancu**, Polytechnic University
Elisabeth Werner, Case Western Reserve University

8:30AM *Isomorphic version of the Busemann-Petty problem*
▶ (24) *for Gaussian Measure.*
Artem Zvavitch, University of Missouri-Columbia (997-52-44)

9:00AM *Convex bodies: metrics, intrinsic volumes, and*
(25) *Gaussian measure.* Preliminary report.
Rick Vitale, University of Connecticut (997-52-78)

9:30AM *Asymptotic mean values of Gaussian polytopes.*
(26) **Matthias Reitzner**, Univ. Techn. Vienna (997-60-218)

10:00AM *Moment-Entropy Inequalities.*
(27) **Erwin Lutwak**, **Deane Yang*** and **Gaoyong Zhang**, Polytechnic University (997-52-29)

10:30AM *Pairs of Convex Bodies with Centrally Symmetric*
(28) *Intersections of Translates.* Preliminary report.
Valeriu Soltan, George Mason University (997-52-26)

Special Session on Group Cohomology and Related Topics (in Honor of William Browder's 70th Birthday), I

8:30 AM – 10:50 AM   **Room 301, Memorial Hall**

Organizers: **Alejandro Adem**, University of Wisconsin
Jonathan Pakianathan, University of Rochester

8:30AM *Quasi-commutative differential graded algebras*
(29) *and homotopy types.*
Max Karoubi, University Paris 7 (997-55-22)

9:00AM *All stably parallelizable compact manifolds are*
(30) *complete intersections of quadrics.* Preliminary
report.
Vinicio Gómez Gutiérrez, Facultad de Ciencias, UNAM, Mexico, and **Santiago Lopez de Medrano***, Instituto de Matematicas, UNAM, Mexico (997-57-176)

9:30AM *p-local finite groups and their extension theory.*
(31) **Jesper Grodal**, University of Chicago (997-55-165)

10:00AM *On the IA-automorphisms of a free group.*
(32) Preliminary report.
F. R. Cohen*, University of Rochester, **B. Farb**, University of Chicago, and **J. Pakianathan**, University of Rochester (997-55-158)

10:30AM *Ring structures of Hochschild and orbifold*
(33) *cohomology.* Preliminary report.
Ragnar-Olaf Buchweitz, University of Toronto, and **Sarah Witherspoon***, MSRI and Texas A&M University (997-18-130)

Special Session on Tomography and Integral Geometry, I

8:30 AM – 10:50 AM   **Room 208, Science and Technology Center**

Organizers: **Andrew Markoe**, Rider University
Eric Todd Quinto, Tufts University

8:30AM *Interpolation by average variational splines on*
(34) *weighted graphs.*
Isaac Pesenson, Temple University (997-41-108)

9:00AM *Stability estimates for helical computed*
(35) *tomography.* Preliminary report.
Alexander Katsevich, University of Central Florida (997-44-171)

9:30AM *The circular Radon transform and thermo-acoustic*
▶ (36) *tomography.*
Gaik Ambartsoumian and **Peter Kuchment***, Texas A&M University (997-44-219)

10:00AM *Radon transform on matrix spaces.*
(37) **Boris Rubin**, The Hebrew University of Jerusalem (997-44-23)

10:30AM *Internet tomography.* Preliminary report.
(38) **Carlos A. Berenstein*** and **Franklin Gavilanez**, Univ. of Maryland (997-44-82)

Special Session on Strings and Branes, I

8:30 AM – 11:00 AM   Room 317, Memorial Hall

Organizers: **Thomas P. Branson**, University of Iowa
S. James Gates, University of Maryland

8:30AM *Invariants on symmetric superspaces.*
(39) **Yi Ming Zou**, University of Wisconsin-Milwaukee (997-22-174)

9:10AM *Supersymmetry beyond Superspace.* Preliminary
(40) report.
Gregory D. Landweber, University of Oregon (997-17-100)

9:50AM *Short Distance Expansions of some Infinite*
▶ (41) *Dimensional Lie Algebras.*
Vincent G. J. Rodgers, The University of Iowa (997-83-89)

10:30AM *Coadjoint orbits, spherical vectors and the*
(42) *wavefunction of the universe.*
Andrew Waldron, UC Davis (997-81-96)

Special Session on Homotopical Physics, I

8:30 AM – 10:50 AM   Room 303, Memorial Hall

Organizers: **James Stasheff**, University of North Carolina
Thomas J. Lada, North Carolina State University
Alexander A. Voronov, University of Minnesota

8:30AM *Principles of Quantum Fields Theory.* Preliminary
(43) report.
Jae-Suk Park, Graduate Center of CUNY (997-81-162)

9:00AM *Quantum Deformation Theory.* Preliminary report.
(44) **John Terilla**, Stony Brook University (997-81-207)

9:30AM *On the Cyclic Deligne Conjecture.*
(45) **Thomas Tradler**, New York City College of Technology (997-16-159)

10:00AM *Theories, 2-categories, and conformal field theory.*
(46) **Po Hu**, Wayne State University (997-81-203)

10:30AM *Renormalization from the homotopy theoretical*
(47) *point of view.*
Dmitry E Tamarkin, Northwestern University (997-81-154)

Special Session on Convergence of Riemannian Manifolds, I

9:00 AM – 11:00 AM   Room 321, Memorial Hall

Organizers: **Christina Sormani**, Herbert H. Lehman College (CUNY)
Xiaochun Rong, Rutgers State University
Guofang Wei, University of California Santa Barbara

9:00AM *Rough Isometries Between Non-Compact*
(48) *Riemannian Manifolds.* Preliminary report.
Cristina Abreu Suzuki, The Graduate Center, CUNY (997-53-57)

9:30AM *Convergence and the Covering Spectrum.*
(49) **Christina Sormani***, Lehman College and CUNY Graduate Center, and **Guofang Wei**, U.C.S.B. (997-58-119)

10:20AM *Degeneration of Kahler-Einstein manifolds.*
(50) **Wei-Dong Ruan**, University of Illinois at Chicago (997-53-126)

Special Session on Theory of Initial- and Boundary-Value Problems for Some Nonlinear Partial Differential Equations, I

9:00 AM – 10:50 AM   Room 222, Science and Technology Center

Organizer: **Laihan Luo**, Richard Stockton College of New Jersey

9:00AM *Variational characterization and stability of*
(51) *n-soliton solutions to the KdV equation.*
John P Albert*, University of Oklahoma, **Jerry L Bona** and **Nghiem V Nguyen**, University of Illinois at Chicago (997-35-234)

9:30AM *Initial-boundary-value problems for model*
(52) *equations for water waves.*
Jerry L Bona, University of Ilinois at Chicago (997-35-147)

10:00AM *Boundary Smoothing Properties of the Korteweg-de*
(53) *Vries Equation in a Quarter Plane.*
S. M. Sun, Virginia Tech (997-35-106)

10:30AM *Hamiltonian approximation of the Green-Naghdi*
(54) *(GN) equations.*
Yi Li, Stevens Institute of Technology (997-35-267)

Special Session on Automorphic Forms and Analytic Number Theory, I

9:00 AM – 10:50 AM   Room 201, Science and Technology Center

Organizers: **Stephen Miller**, Rutgers University
Ramin Takloo-Bighash, Princeton University

9:00AM *Exponential Sum with Hecke Eigenvalues at shifted*
(55) *primes.*
Liangyi Zhao, United States Military Academy (997-11-06)

9:30AM *The residue of Rankin-Selberg and multiplicity one.*
(56) **Farrell Brumley**, Princeton (997-11-256)

10:00AM *Low-lying zeros of families of elliptic curves.*
(57) **Matthew Young**, Rutgers (997-11-249)

10:30AM *Prime orders for the reductions of a CM elliptic*
(58) *curve.*
Alina Carmen Cojocaru, Princeton University (997-11-40)

Special Session on Homotopy Theory (in Honor of William Browder's 70th Birthday), I

9:00 AM – 10:50 AM   Room 304, Memorial Hall

Organizers: **Martin Bendersky**, Hunter College
Donald Davis, Lehigh University

8:30AM *Higher Leibniz formulas for S^1 equivariant*
(59) *S-algebras.*
Robert R Bruner, Wayne State University (997-55-24)

9:00AM *Multicategories in K-theory and stable homotopy.*
(60) **Anthony D Elmendorf**, Purdue University Calumet (997-55-17)

9:30AM *Stable model categories and a theorem of*
(61) *Pirashvili.* Preliminary report.
Randall D Helmstutler, University of Virginia (997-55-92)

10:00AM *Coxeter Complexes and Graph-Associahedra.*
(62) Preliminary report.
Satyan L Devadoss, Williams College (997-52-35)

10:30AM *Artin-Schreier curves and higher elliptic*
(63) *cohomology.* Preliminary report.
Douglas C. Ravenel, University of Rochester
(997-55-276)

Special Session on Algebraic Geometry and Mirror Symmetry, I

9:00 AM – 10:40 AM   Room 203, Memorial Hall

Organizer: **Ciprian Borcea**, Rider University

9:00AM *Integral Structures, Toric Geometry, and*
(64) *Homological Mirror Symmetry.*
Charles Doran*, Columbia University and
University of Washington, and **John Morgan**,
Columbia University (997-14-95)

9:30AM *Equivalences of derived categories and their mirror*
(65) *symmetric interpretation.* Preliminary report.
R. Paul Horja*, University of Michigan, and **Lev
Borisov**, University of Wisconsin-Madison
(997-14-204)

10:00AM *Generalized special Lagrangian torus fibrations for*
(66) *Calabi-Yau hypersurfaces in toric varieties.*
Wei-Dong Ruan, University of Illinois at Chicago
(997-53-127)

Special Session on Surgery (in Honor of William Browder's 70th Birthday), I

9:00 AM – 10:50 AM   Room 306, Memorial Hall

Organizer: **Frank S. Quinn**, Virginia Polytechnic
Institute & State University

9:00AM *L-theory of Free Products.* Preliminary report.
(67) **Francis X Connolly**, University of Notre Dame, and
James F Davis*, Indiana University (997-57-257)

9:30AM *Four-dimensional graph-manifolds.*
(68) **Alexandra Mozgova**, University of Avignon
(997-57-246)

10:00AM *Homotopy Intersection Theory.* Preliminary report.
(69) **Bruce Williams**, U. of Notre Dame (997-57-226)

10:30AM *The very strong C_∞ topology on $C_\infty(M,N)$ and*
(70) *K-equivariant maps.*
Soren Illman, University of Helsinki (997-57-223)

Session for Contributed Papers

10:00 AM – 10:40 AM   Room 318, Memorial Hall

10:00AM *Non-normality on Tests for Random Walk Models*
(71) *with t-Distributed Errors.*
Leslie Chandrakantha, John Jay College/City
University of New York (997-62-09)

10:15AM *A Closed Form Representation of the Macdonald*
▶ (72) *Function of Arbitrary Order.*
Mohamed T Boudjelkha, Rensselaer Polytechnic
Institute (997-33-10)

10:30AM *Actions of k* on Nonsingular Affine Surfaces.*
(73) Preliminary report.
Sandra M. Caravella, Centenary College
(997-14-142)

Invited Address

11:10 AM – 12:05 PM   Theater, Bart Luedeke
(Student) Center

11:10AM Welcome and Opening Remarks by Rider University
President Mordechai Rozanski.

(74) *Poincaré duality, free loop space, and strings.*
Dennis P. Sullivan, Graduate Center of CUNY and
SUNY at Stony Brook (997-22-02)

Invited Address

1:30 PM – 2:20 PM   Theater, Bart Luedeke (Student) Center

(75) *Affine isoperimetric inequalities.*
Gaoyong Zhang, Polytechnic University (997-52-04)

Special Session on CR Geometry and Singularities, II

2:30 PM – 6:10 PM   Room 218, Memorial Hall

Organizers: **Joseph J. Kohn**, Princeton University
John P. D'Angelo, University of Illinois
Xiaojun Huang, Rutgers University
Andreea Nicoara, Harvard University

2:30PM *Spectral analysis of the d-bar-Neumann and Kohn*
(76) *Laplacians.*
Siqi Fu, Rutgers University-Camden (997-32-138)

3:30PM *The d-bar Neumann problem, magnetic Schrodinger*
(77) *operators, and the Aharonov-Bohm phenomenon.*
Michael Christ*, University of California, Berkeley,
and **Siqi Fu**, Rutgers University, Camden
(997-32-199)

4:30PM *Geometric properties of mappings between CR*
(78) *manifolds.*
Linda Preiss Rothschild* and **Peter Ebenfelt**,
UCSD (997-32-153)

5:30PM *Finite mappings of essentially finite CR manifolds.*
(79) Preliminary report.
Peter Ebenfelt* and **Linda P. Rothschild**, U
California, San Diego (997-32-211)

Special Session on Variational Methods in Classical Mechanics, II

2:30 PM – 4:15 PM   Room 219, Memorial Hall

Organizers: **John N. Mather**, Princeton University
Vadim Y. Kaloshin, Institute for
Advanced Study

2:30PM *Plane-like critical points that are not minimizers in*
▶ (80) *periodic variational problems.*
Rafael de la Llave, Univ. of Texas, Austin
(997-35-91)

3:30PM *Energy growth and boundedness in billiards with*
(81) *moving walls.*
Mark Levi, Penn State University (997-37-268)

Special Session on Convergence of Riemannian Manifolds, II

2:30 PM – 5:40 PM   Room 321, Memorial Hall

Organizers: **Christina Sormani**, Herbert H. Lehman
College (CUNY)
Xiaochun Rong, Rutgers State
University
Guofang Wei, University of California
Santa Barbara

2:30PM *Generalized cone constructions in Alexandrov,*
(82) *Riemannian and Lorentz spaces.* Preliminary report.
Stephanie B Alexander* and **Richard L Bishop**,
UIUC (997-53-132)

3:20PM *Lorentzian Gromov Hausdorff theory.*
(83) **Johan Noldus**, Universiteit Gent (997-51-45)

4:10PM *Approximation of the quantum Tori by finite*
(84) *quantum Tori for the quantum Gromov-Haussdorf distance.*
Frederic Latremoliere, University of California, Berkeley (997-46-71)

5:00PM Discussion of Lorentzian Convergence

Special Session on Geometry and Arithmetic of Lattices

2:30 PM – 5:20 PM   Room 319, Memorial Hall

Organizers: **John H. Conway**, Princeton University
Derek A. Smith, Lafayette College

2:30PM *Some Applications of Lattices to Group Theory,*
(85) *Number Theory, and Logic.*
J H Conway, Princeton University (997-51-264)

3:00PM *Details of the cone of Minkowski-reduced quadratic*
(86) *forms in low numbers of variables.* Preliminary report.
Hale F Trotter, Princeton University (997-11-182)

3:30PM *From finite lattices to finite simple groups.*
(87) **Christopher S Simons**, Rowan University (997-06-65)

4:00PM *Arithmetic properties of lattices in rank 2*
(88) *Kac-Moody groups over finite fields.* Preliminary report.
Lisa Carbone, Rutgers University (997-20-241)

4:30PM *Quaternions, octonions, and now 16-ons and 2^n-ons*
▶ (89) *– new kinds of numbers.*
Warren D. Smith, Stony Brook, NY (997-08-233)

5:00PM *Lattices and Quantum Logic.*
(90) **S Kochen**, Princeton University (997-51-265)

Special Session on Commutative Algebra and Algebraic Geometry, II

2:30 PM – 5:50 PM   Room 210, Memorial Hall

Organizers: **Alberto Corso**, University of Kentucky
Claudia Polini, University of Notre Dame
Wolmer V. Vasconcelos, Rutgers University

2:30PM *Pencils of forms and level Artinian algebras.*
(91) Preliminary report.
Anthony Iarrobino, Northeastern University (997-13-141)

3:00PM *On the first infinitesimal neighborhood of a*
(92) *k-configuration.* Preliminary report.
Anthony V. Geramita, Queen's University/University of Genova, **Juan C. Migliore***, University of Notre Dame, and **Lousindi R. Sabourin**, York University (997-13-66)

3:30PM *Maximal rank conjectures and algorithms for*
(93) *infinitesimal neighborhoods.*
Karen A. Chandler, University of Notre Dame (997-14-232)

4:00PM *A normal form for space curves in a double plane.*
(94) **Nadia Chiarli**, **Silvio Greco**, Politecnico di Torino, and **Uwe Nagel***, University of Kentucky (997-14-235)

4:30PM *The general plane section of a curve in P^3.*
(95) **Elisa Gorla**, University of Notre Dame (997-14-189)

5:00PM *Buchsbaum-Rim multiplicity formulas.* Preliminary
(96) report.
C-Y. Jean Chan*, University of Arkansas, **Jung-Chen Liu**, National Taiwan Normal University, and **Bernd Ulrich**, Purdue University (997-13-151)

5:30PM *Monomial ideals via square-free monomial ideals.*
(97) Preliminary report.
Sara Faridi, University of Quebec at Montreal (997-13-185)

Special Session on Analytic Convex Geometry, II

2:30 PM – 5:50 PM   Room 302, Memorial Hall

Organizers: **Alina Stancu**, Polytechnic University
Elisabeth Werner, Case Western Reserve University

2:30PM *Comparison of volumes of convex bodies by means*
(98) *of "areas" of central sections.*
Alexander Koldobsky, University of Missouri-Columbia (997-52-46)

3:00PM *Convex Bodies with proportional projection*
(99) *functions.*
Ralph Howard*, University of South Carolina, and **Daniel Hug**, Albert-Ludwigs-Universität Freiburg (997-52-25)

3:30PM *Average directed projection and section functions.*
(100) Preliminary report.
Paul Goodey*, University of Oklahoma, and **Wolfgang Weil**, Universität Karlsruhe (997-52-157)

4:00PM *Transportation inequalities and convex geometry.*
(101) Preliminary report.
Mark W Meckes, Stanford University (997-52-180)

4:30PM *Inequalities for volumes of polar bodies.*
(102) **Stefano Campi***, University of Modena and Reggio E. - Italy, and **Paolo Gronchi**, Istituto Applicazioni del Calcolo - CNR (997-52-169)

5:00PM *Convexity and the Steiner formula.* Preliminary
(103) report.
Daniel Hug, University of Freiburg, **Guenter Last** and **Wolfgang Weil***, University of Karlsruhe (997-52-121)

5:30PM *Some new elements of the elliptic Brunn-Minkowski*
▶ (104) *theory.*
Poramate Pranayanuntana, Polytechnic University of New York (997-52-50)

Special Session on Group Cohomology and Related Topics (in Honor of William Browder's 70th Birthday), II

2:30 PM – 4:50 PM   Room 301, Memorial Hall

Organizers: **Alejandro Adem**, University of Wisconsin
Jonathan Pakianathan, University of Rochester

2:30PM *Coclass and cohomology.*
(105) **Jon F. Carlson**, University of Georgia (997-20-81)

3:00PM *Unstable Morita classes in the homology of*
(106) $Out(F_n)$. Preliminary report.
Karen Vogtmann*, Cornell University, and **James Conant**, University of Tennessee, Knoxville (997-20-75)

3:30PM *Representation theory and the K-theory of fields.*
(107) **Gunnar Erik Carlsson**, Stanford University (997-55-102)

4:00PM *Holomorphic disks and low-dimensional topology.*
(108) **Peter S Ozsvath**, Columbia University/IAS (997-57-61)

4:30PM *Commutative algebra and the cohomology of*
(109) *groups.*
David J Benson, University of Georgia (997-55-56)

Special Session on Theory of Initial- and Boundary-Value Problems for Some Nonlinear Partial Differential Equations, II

2:30 PM – 4:20 PM	Room 222, Science and Technology Center

Organizer: **Laihan Luo**, Richard Stockton College of New Jersey

2:30PM *Initial and Two-point Boundary Value Problem for*
(110) *the BBM-equation.* Preliminary report.
Hongqiu Chen, The University of Memphis
(997-35-198)

3:00PM *Some new results on the solution of Disspative 2D*
(111) *Quasi-Geostrophyc Equations.*
Ning Ju, Oklahoma State University (997-35-13)

3:30PM *Location of the Blow-up Point of Degenerate*
(112) *Semilinear Parabolic Problems.*
Wai Yuen Chan, Southeast Missouri State University
(997-35-67)

4:00PM *The Leading Order of Solutions of Initial-Value*
(113) *Problems for Some Nonlinear Dispersive Wave*
Equations with Dissipation. Preliminary report.
Laihan Luo, Richard Stockton College of New Jersey
(997-35-173)

Special Session on Automorphic Forms and Analytic Number Theory, II

2:30 PM – 5:25 PM	Room 201, Science and Technology Center

Organizers: **Stephen Miller**, Rutgers University
Ramin Takloo-Bighash, Princeton University

2:30PM *The existence of Bessel functionals.*
(114) **Ramin Takloo-Bighash**, Princeton University
(997-11-192)

3:00PM *The Symmetry Type of the Maass Twist of the*
(115) *Symmetric Square Family.* Preliminary report.
Eduardo Dueñez*, The Johns Hopkins University,
and **Steven J. Miller**, The Ohio State University
(997-11-146)

3:30PM *Improved Weil and Tate pairings for elliptic and*
(116) *hyperelliptic curves.*
Kirsten Eisentraeger*, Institute for Advanced
Study, **Kristin Lauter** and **Peter L Montgomery**,
Microsoft Research (997-11-113)

4:00PM *Counting 3-torsion in class groups and elliptic*
(117) *curves.*
A Venkatesh, MIT (997-11-117)

4:30PM *Geodesic cycles on modular curves and special*
(118) *values of Rankin L-series.*
Alexandru Popa, Princeton University (997-11-254)

5:00PM *The orthogonality of Hecke eigenvalues.* Preliminary
(119) report.
Xiaoqing Li* and **Henryk Iwaniec.**, Rutgers
University (997-11-161)

5:15PM *Meromorphic continuation of Eisenstein series via*
(120) *the Selberg-Bernstein method.* Preliminary report.
Feryal Alayont, University of Arizona (997-11-12)

Special Session on Tomography and Integral Geometry, II

2:30 PM – 4:50 PM	Room 208, Science and Technology Center

Organizers: **Andrew Markoe**, Rider University
Eric Todd Quinto, Tufts University

2:30PM *The ray transform and inverse problems for elastic*
(121) *media.*
Lizabeth V Rachele, University at Albany, SUNY
(997-35-145)

3:00PM *Radon transforms, the Heisenberg group, and*
(122) *discrete analogues.*
Elias M. Stein, Princeton University (997-26-107)

3:30PM *Novikov's formula for the attenuated Radon*
(123) *transform — a new approach.*
Jan Boman*, Stockholm University, and **Jan-Olov**
Stromberg, KTH, Stockholm (997-44-110)

4:00PM *Theory of valuations and integral geometry.*
(124) Preliminary report.
Semyon Alesker, Tel Aviv University (997-52-59)

4:30PM *Reconstruction on spheres.*
(125) **Mark L. Agranovsky**, Bar-Ilan University
(997-45-140)

Special Session on Homotopy Theory (in Honor of William Browder's 70th Birthday), II

2:30 PM – 5:20 PM	Room 304, Memorial Hall

Organizers: **Martin Bendersky**, Hunter College
Donald Davis, Lehigh University

2:30PM *A modular description of the K(2)-local sphere at*
(126) *the prime 3.* Preliminary report.
Mark J Behrens, MIT (997-55-87)

3:00PM *Representations of Spaces.* Preliminary report.
(127) **Wojciech Chacholski***, Royal Institute of
Technology, and **J. Scherer**, Universitat Autònoma
de Barcelona (997-55-148)

3:30PM *Self-maps of loop spaces.* Preliminary report.
(128) **F. R. Cohen**, University of Rochester (997-55-266)

4:00PM *Heinz Hopf in Princeton.* Preliminary report.
► (129) **John McCleary**, Vassar College (997-01-238)

4:30PM *Extending Browder's work on H-spaces.* Preliminary
(130) report.
James P Lin, University of California at San Diego
(997-55-83)

5:00PM *A review of progress on the Kervaire Invariant*
(131) *problem after Browder's theorem.* Preliminary
report.
Mark Mahowald, Northwestern University
(997-55-76)

Special Session on Algebraic Geometry and Mirror Symmetry, II

2:30 PM – 5:20 PM	Room 203, Memorial Hall

Organizer: **Ciprian Borcea**, Rider University

2:30PM *On the moduli of certain Fano fourfolds.* Preliminary
(132) report.
Walter L. Baily, University of Chicago (997-14-152)

3:00PM *Crepant Resolutions of Calabi-Yau Orbifolds.*
(133) **Anda Degeratu**, MSRI/Duke University
(997-53-210)

3:30PM *Orbifold Chow rings of toric Deligne-Mumford*
(134) *stacks.*
Lev Borisov, University of Wisconsin, **Linda Chen***,
Columbia University, and **Gregory Smith**, Barnard
College, Columbia University (997-14-194)

4:00PM *Hochschild homology of algebraic varieties and an*
(135) *extended TQFT.* Preliminary report.
Andrei Caldararu, University of Pennsylvania
(997-14-202)

4:30PM Discussion

5:00PM *Tangents to quadrics and nested Calabi-Yau*
(136) *varieties.* Preliminary report.
Ciprian S. Borcea, Rider University (997-14-150)

Special Session on Geometry of Protein Modelling, II

2:30 PM – 4:50 PM   **Room 102, Science and Technology Center**

Organizers: **Ileana Streinu**, Smith College

Jack Snoeyink, University of North Carolina at Chapel Hill

2:30PM *Are there Graphical Solutions to Protein structure*
▶ (137) *Prediction Bottlenecks?*
John Moult, CARB (997-92-217)

3:00PM *Extreme Elevation on a 2-Manifold.*
(138) **Pankaj K Agarwal**, Duke University (997-51-214)

3:30PM *Functional annotation by identification of protein*
▶ (139) *local surface similarities: a novel tool for structural genomics.*
Fabrizio Ferre, Boston College (997-92-242)

4:00PM *Algorithms for Curvature Quantification using*
(140) *Least Sum of Squares Fitting of Spheres.*
Michael A. Burr, Tufts University, **Alan C. Cheng**, Pfizer Discovery Technology Center, **Ryan G. Coleman***, Tufts University/Pfizer DTC, and **Diane L. Souvaine**, Tufts University (997-68-129)

4:30PM *Computational Methods Towards Predicting Aspects*
▶ (141) *of Protein Structure and Interactions.*
Mona Singh, Princeton University (997-92-178)

Special Session on Strings and Branes, II

2:30 PM – 5:20 PM   **Room 317, Memorial Hall**

Organizers: **Thomas P. Branson**, University of Iowa
S. James Gates, University of Maryland

2:30PM *Conformally compact Einstein manifolds and*
(142) *renormalized volume.*
Alice Chang, Princeton University, **Jie Qing***, UC Santa Cruz, and **Paul Yang**, Princeton University (997-53-187)

3:05PM *Conformally invariant Maxwell type operators on*
(143) *forms and global conformal invariants.* Preliminary report.
A Rod Gover, University of Auckland (997-58-103)

3:40PM *Recent progress on the study of the BCOV torsion.*
(144) **Hao Fang**, Courant Institute of Mathematical Sciences, New York University (997-53-205)

4:15PM *Maxwell–Born–Infeld fields with point defects.*
(145) **Michael K.-H. Kiessling**, Rutgers University (997-83-243)

4:50PM *Morse Theory for the H-surface equation.*
(146) **Sagun Chanillo***, Rutgers Univ., New Brunswick, NJ, and **Andrea Malchiodi**, SISSA, Trieste, Italy. (997-58-98)

Special Session on Homotopical Physics, II

2:30 PM – 4:50 PM   **Room 303, Memorial Hall**

Organizers: **James Stasheff**, University of North Carolina

Thomas J. Lada, North Carolina State University

Alexander A. Voronov, University of Minnesota

2:30PM *A canonical semi-classical star-product.* Preliminary
▶ (147) report.
Lucian Miti Ionescu, Illinois State University (997-81-227)

3:00PM *Examples of finite dimensional L_∞ algebras in*
(148) *gauge theory.*
Tom Lada and **Marilyn Daily***, North Carolina State University (997-18-186)

3:30PM *Examples of Miniversal Deformations of Infinity*
(149) *Algebras.*
Michael R Penkava, University of Wisconsin-Eau Claire (997-18-271)

4:00PM *String topology for transversal families.* Preliminary
(150) report.
Uwe Kaiser, Boise State University (997-57-90)

4:30PM *Some examples of homotopy Batalin-Vilkovisky*
(151) *algebras.* Preliminary report.
Fusun Akman, Coastal Carolina University (997-18-225)

Special Session on Elliptic Surfaces and Elliptic Fibrations, II

2:30 PM – 4:50 PM   **Room 201, Memorial Hall**

Organizers: **William L. Hoyt**, Rutgers University
Joseph H. Silverman, Brown University
Charles F. Schwartz, Rider University

2:30PM *F-theory/Heterotic duality for Lattice Polarized*
(152) *Elliptic K3 Surfaces with Section.*
Charles Doran*, Columbia University, and **Adrian Clingher**, Stanford University (997-14-167)

3:00PM *Mordell-Weil Ranks of Cyclic Covers of Rational*
(153) *Elliptic Surfaces.* Preliminary report.
Lisa Fastenberg, Pace University (997-11-188)

3:30PM *Selmer groups of elliptic curves over towers of*
(154) *function fields.*
Jordan S Ellenberg, Princeton University (997-14-70)

4:00PM *Pullbacks and Drinfeld Modular Curves.*
(155) **Christopher J Hall**, Princeton University (997-11-128)

4:30PM *Integral points on elliptic curves and 3-torsion in*
(156) *class groups.*
Harald Andres Helfgott, Yale (997-11-80)

Concert in Celebration of William Browder's 70th Birthday

7:00 PM – 8:00 PM   **Taplin Room, Fine Hall, Princeton University Campus**

All participants are invited to this free concert featuring performances by Risa Browder and John Moran. Banquet following for those holding tickets.

Sunday, April 18

Meeting Registration

7:30 AM – NOON   **Calvalla Room, Bart Luedeke (Student) Center**

AMS Exhibit and Book Sale

7:30 AM – NOON   **Calvalla Room, Bart Luedeke (Student) Center**

Special Session on CR Geometry and Singularities, III

8:00 AM – 10:55 AM   **Room 218, Memorial Hall**

Organizers: **Joseph J. Kohn**, Princeton University

John P. D'Angelo, University of Illinois
Xiaojun Huang, Rutgers University
Andreea Nicoara, Harvard University

8:00AM (157) *Fefferman's surface area and holomorphic sublevel sets.* Preliminary report.
David E Barrett, University of Michigan (997-32-195)

8:45AM (158) *Cusp-type singularities of real analytic curves in the complex plane.*
Patrick Ahern and **Xianghong Gong***, University of Wisconsin (997-32-39)

9:30AM (159) *Global invariants for strongly pseudoconvex varieties with isolated sigularities: Bergman functions.*
Stephen S.-T. Yau, University of Illinois at Chicago (997-32-32)

10:15AM (160) *CR singularities of real 3-manifolds in $\mathbb{C}^4$.*
Adam Coffman, Indiana University - Purdue University Fort Wayne (997-32-36)

Special Session on Commutative Algebra and Algebraic Geometry, III

8:00 AM – 10:50 AM   Room 210, Memorial Hall

Organizers: **Alberto Corso**, University of Kentucky
Claudia Polini, University of Notre Dame
Wolmer V. Vasconcelos, Rutgers University

8:00AM (161) *Asymptotic limits of local cohomology modules.*
S D Cutkosky, T Ha, H Srinivasan* and **E Theodorescu**, University of Missouri (997-13-184)

8:30AM (162) *Asymptotic behavior of length of local cohomology.*
S Dale Cutkosky*, **Tai Ha**, **Hema Srinivasan** and **Emanoil Theodorescu**, Univ. Missouri (997-13-143)

9:00AM (163) *Applications of the purity of non-standard Frobenius.*
Hans Schoutens, CUNY–NYC College of Technology (997-14-52)

9:30AM (164) *A tight closure analogue of analytic spread.*
Neil M. Epstein, University of Kansas (997-13-58)

10:00AM (165) *Almost Gorenstein rings.* Preliminary report.
Craig Huneke, University of Kansas, and **Adela Vraciu***, University of South Carolina (997-13-84)

10:30AM (166) *Tor-algebra operations and linkage.*
Andreea N. Brezaie, Carrie E. Finch, Sara M Gabrielli, Andrew R. Kustin*, Derek J. Owens, Frank A. Sanacory, William H Streyer, Adela Vraciu and **Brooks D Willet**, University of South Carolina (997-13-196)

Special Session on Homotopy Theory (in Honor of William Browder's 70th Birthday), III

8:00 AM – 10:50 AM   Room 304, Memorial Hall

Organizers: **Martin Bendersky**, Hunter College
Donald Davis, Lehigh University

8:00AM (167) *Homology and Cohomology of E-infinity Ring Spectra.*
Maria Basterra*, University of New Hampshire, and **Michael A Mandell**, University of Chicago (997-55-179)

8:30AM (168) *Mapping spaces and homology isomorphisms.*
Nicholas J. Kuhn, University of Virginia (997-55-15)

9:00AM (169) *Familial homology theories based on the subgroups of the unitary group.* Preliminary report.
Greg Arone, University of Virginia, and **Kathryn Lesh***, Union College (997-55-231)

9:30AM (170) *A spectral sequence for the first layer of the Taylor tower of a Γ-module.* Preliminary report.
Michele Intermont, Kalamazoo College, **Brenda Johnson***, Union College, and **Randy McCarthy**, University of Illinois at Urbana-Champaign (997-55-236)

10:00AM (171) *An unstable Adams spectral sequence derived from the Goodwillie tower of the identity functor.* Preliminary report.
Kristine Baxter Bauer, University of Calgary, **Brenda Johnson**, Union College, and **Jack Morava***, Johns Hopkins University (997-55-93)

10:30AM (172) *Finite type knot invariants and calculus of functors.*
Ismar Volic, University of Virginia (997-55-16)

Special Session on Variational Methods in Classical Mechanics

8:30 AM – 11:00 AM   Room 219, Memorial Hall

Organizers: **John N. Mather**, Princeton University
Vadim Y. Kaloshin, Institute for Advanced Study

8:30AM (173) *Topologically monotone periodic orbits for surface homeomorphisms.*
Kamlesh Parwani, Northwestern University (997-37-270)

9:25AM (174) *Regularity of transport coefficients for Lorenz gas.*
Dmitry Dolgopyat, University of Maryland (997-37-155)

10:20AM (175) *Instability of totally elliptic points of 4-dimensional symplectic maps.*
Vadim Y. Kaloshin, Caltech, AIM, IAS (997-37-272)

Special Session on Automorphic Forms and Analytic Number Theory, III

8:30 AM – 10:50 AM   Room 201, Science and Technology Center

Organizers: **Stephen Miller**, Rutgers University
Ramin Takloo-Bighash, Princeton University

8:30AM ▶ (176) *On the cubic moment of quadratic Dirichlet L-functions.*
Qiao Zhang, The Johns Hopkins University (997-11-160)

9:00AM (177) *Summation formulas and moments of the Riemann zeta function.*
Jennifer Beineke*, Western New England College, and **Daniel Bump**, Stanford University (997-11-144)

9:30AM (178) *Cubic twists of $GL(2)$ automorphic L-functions.* Preliminary report.
Ben Brubaker, Stanford University, **Solomon Friedberg***, Boston College, and **Jeffrey Hoffstein**, Brown University (997-11-48)

10:00AM (179) *Cancellation in additively-twisted sums of Hecke eigenvalues.*
Stephen David Miller, Rutgers University (997-11-34)

10:30AM (180) *Integral moments of GL(2) L-functions.* Preliminary report.
Dorian Goldfeld* and **Adrian Diadonu**, Columbia University (997-11-85)

Special Session on Tomography and Integral Geometry, III

8:30 AM – 10:50 AM   **Room 208, Science and Technology Center**

Organizers: **Andrew Markoe**, Rider University
     Eric Todd Quinto, Tufts University

8:30AM *Groups, wavelets, and harmonic analysis on R^n.*
(181) Preliminary report.
Gestur Olafsson, Louisiana State University
(997-42-122)

9:00AM *The Radon transform and PDE.* Preliminary report.
(182) **Leon Ehrenpreis**, Temple University (997-44-101)

9:30AM *Radon transforms on Isotropic Planes.* Preliminary
(183) report.
Eric L. Grinberg, University of New Hampshire
(997-44-164)

10:00AM *Moment Conditions and Support Theorems for*
(184) *Radon Transforms on Affine Grassmannians.*
Preliminary report.
Fulton B Gonzalez*, Tufts University, and
Tomoyuki Kakehi, University of Tsukuba
(997-44-69)

10:30AM *Mean Value Extension Theorems and Microlocal*
(185) *Analysis.*
Eric Todd Quinto, Tufts University (997-44-21)

Special Session on Geometry of Protein Modelling, III

8:30 AM – 10:50 AM   **Room 102, Science and Technology Center**

Organizers: **Ileana Streinu**, Smith College
     Jack Snoeyink, University of North Carolina at Chapel Hill

8:30AM *Reconstructing evasive protein states using NMR*
(186) *and molecular modeling: the Focal Adhesion Kinase*
story. Preliminary report.
Nikolay V Dokholyan*, **Richard Dixon**, **Yiwen Chen**, **Feng Ding**, **Sagar D Khare**, **Kirk Prutzman**, **Michelle King**, **Michael D Schaller** and **Sharon Campbell**, University of North Carolina at Chapel Hill (997-92-115)

9:00AM *Bayesian Restraint Potentials for Consistent*
(187) *Inference of Biomolecular Structure from NMR Data.*
Jeffrey C. Hoch*, University of Connecticut Health Center, and **Alan S. Stern**, Rowland Institute at Harvard (997-92-74)

9:30AM *Protein Geometry and its Role in Structural*
(188) *Molecular Biology and Proteomics.*
Bruce R. Donald, Dartmouth College (997-51-112)

10:00AM *Some Geometric Problems in NMR Structural*
(189) *Biology: Using Residual Dipolar Couplings to*
Identify Protein-Protein Interfaces and for
Resonance Assignments. Preliminary report.
Ramgopal R. Mettu, Dartmouth College
(997-51-135)

10:30AM *An Atomistic Model of Emergent Protein*
▶ (190) *Homochirality.* Preliminary report.
Vikas Nanda* and **William F DeGrado**, University of Pennsylvania School of Medicine (997-92-201)

Special Session on Strings and Branes, III

8:30 AM – 11:00 AM   **Room 317, Memorial Hall**

Organizers: **Thomas P. Branson**, University of Iowa
     S. James Gates, University of Maryland

8:30AM *A construction of critical GJMS operators using*
(191) *Wodzicki's residue.*
William J. Ugalde, Purdue University (997-53-172)

9:10AM *Invertible functions on noncommutative two-tori*
(192) *and holomorphic structures.* Preliminary report.
Alexander Polishchuk, University of Oregon
(997-58-94)

9:50AM *Geometry of the lifts of orientifold six-planes from*
(193) *type IIA string theory to M-theory.*
Amy E Ksir*, United States Naval Academy, and
Stephen G Naculich, Bowdoin College (997-81-228)

10:30AM *Calabi-Yau Orientifolds: Gepner Crosscaps,*
(194) *Charges, and Moduli.*
Brandon Bates, **Charles Doran***, Columbia University, **Lennaert Huiszoon**, I.T.F., K.U.Leuven, and **Koenraad Schalm**, I.S.C.A.P., Columbia
(997-14-168)

Special Session on Homotopical Physics, III

8:30 AM – 10:50 AM   **Room 303, Memorial Hall**

Organizers: **James Stasheff**, University of North Carolina
     Thomas J. Lada, North Carolina State University
     Alexander A. Voronov, University of Minnesota

8:30AM *The A-infinity operad and the moduli space of*
(195) *curves.*
Kevin Costello, Imperial College, London
(997-51-77)

9:00AM *Operations in the algebraic topology of open-closed*
(196) *string theory.*
Eric Neal Harrelson, University of Minnesota
(997-55-221)

9:30AM *Homotopy algebraic structures in classical*
(197) *open-closed strings.* Preliminary report.
Hiroshige Kajiura*, Yukawa Institute for Theoretical Physics, Kyoto University, and **J Stasheff**, University of Pennsylvania (997-18-133)

10:00AM *Arcs, strings and homotopy algebras.*
(198) **Ralph M Kaufmann**, Oklahoma State University
(997-55-181)

10:30AM *Gauge groups and string topology.*
(199) **Paolo Salvatore**, University of Rome 2 (997-55-229)

Special Session on Elliptic Surfaces and Elliptic Fibrations, III

8:30 AM – 10:45 AM   **Room 201, Memorial Hall**

Organizers: **William L. Hoyt**, Rutgers University
     Joseph H. Silverman, Brown University
     Charles F. Schwartz, Rider University

8:00AM *Algebraic Geometry, Object Recognition, and*
(200) *Computer Vision.*
Peter Stiller, Institute for Scientific Computation, Texas A&M University (997-14-274)

8:30AM *Vector-valued modular forms associated to*
(201) *Jacobi-like forms.* Preliminary report.
Min Ho Lee, University of Northern Iowa
(997-11-55)

9:00AM *The density of elliptic curves having a global*
(202) *minimal Weierstrass equation.*
E Bekyel, Sabanci University, Turkey (997-11-109)

9:30AM *Twenty-eight bitangents of a plane quartic curve,*
(203)   *decomposition of its Jacobian and the theory of*
        Mordell-Weil lattices.
        Masato Kuwata, Department of Economics, Chuo
        University (997-14-166)

10:00AM *Elliptic Surfaces and Davenport-Stothers Triples.*
(204)   **Tetsuji Shioda**, Rikkyo University, Tokyo,Japan
        (997-14-73)

Special Session on Convergence of Riemannian Manifolds, III

8:40 AM – 11:00 AM   **Room 321, Memorial Hall**

Organizers: **Christina Sormani**, Herbert H. Lehman
             College (CUNY)
             Xiaochun Rong, Rutgers State
             University
             Guofang Wei, University of California
             Santa Barbara

8:40AM Discussion

9:30AM *The curvature tensor and the convergence of*
(205)   *metrics under the Ricci flow.* Preliminary report.
        Natasa Sesum, MIT (997-53-124)

10:20AM *Deforming mappings by geometric flows.*
(206)   **Mu-Tao Wang**, Columbia University (997-53-114)

Special Session on Analytic Convex Geometry, III

9:00 AM – 10:50 AM   **Room 302, Memorial Hall**

Organizers: **Alina Stancu**, Polytechnic University
             Elisabeth Werner, Case Western
             Reserve University

9:00AM *The randomized integer convex hull.*
(207)   **Imre Barany**, Microsoft Research (997-52-54)

9:30AM *Smallest singular value of a random matrix.*
(208)   **Alexandr Litvak**, University of Alberta, **Alain
        Pajor**, Universite de Marne-la-Valee, **Mark
        Rudelson***, University of Missouri, and **Nicole
        Tomczak-Jaegermann**, University of Alberta
        (997-52-139)

10:00AM *Geometry of random polytopes.* Preliminary report.
(209)   **Alexander Litvak***, University of Alberta, **Alain
        Pajor**, Université de Marne-la-Vallee, **Mark
        Rudelson**, University of Missouri, and **Nicole
        Tomczak-Jaegermann**, University of Alberta
        (997-52-120)

10:30AM *On the Distribution of the Number of Vertices of a*
(210)   *Random Polygon.* Preliminary report.
        Christian Buchta, Salzburg University (997-52-177)

Special Session on Group Cohomology and Related Topics (in Honor of William Browder's 70th Birthday), III

9:00 AM – 10:50 AM   **Room 301, Memorial Hall**

Organizers: **Alejandro Adem**, University of
             Wisconsin
             Jonathan Pakianathan, University of
             Rochester

9:00AM *Weighted L^2 cohomology of Coxeter groups.*
(211)   **Michael W. Davis***, The Ohio State University, **Jan
        Dymara**, Instytut Matematyczny, **Tadeusz
        Januszkiewicz**, The Ohio State University, and
        Boris Okun, University of Wisconsin - Milwaukee
        (997-20-31)

9:30AM *Stability of surface mapping spaces and the*
(212)   *homology of mapping class groups.* Preliminary
        report.
        Ralph L Cohen, Stanford University (997-55-30)

10:00AM *Components of a Variety of Matrices and Free*
(213)   *Actions of Elementary Abelian 2-Groups on a*
        Product of Spheres. Preliminary report.
        Dikran B. Karagueuzian, SUNY Binghamton
        (997-57-193)

10:30AM *Equivariant Gysin maps and pulling back fixed*
(214)   *points.*
        Bernhard A Hanke*, University of Munich, and
        Volker Puppe, University of Constance (997-55-72)

Special Session on Surgery (in Honor of William Browder's 70th Birthday), II

9:00 AM – 10:50 AM   **Room 306, Memorial Hall**

Organizer: **Frank S. Quinn**, Virginia Polytechnic
             Institute & State University

9:00AM *Smoothing loop spaces.*
(215)   **Tilman Bauer**, Münster University, **Nitu Kitchloo**,
        Johns Hopkins University, **Dietrich Notbohm**,
        Leicester University, and **Erik Kjær Pedersen***,
        Binghamton University (997-57-123)

9:30AM *Surgery on topological 4-manifolds?* Preliminary
(216)   report.
        Frank Quinn, Virginia Tech (997-57-88)

10:00AM *A topological constraint on the Ricci flow.*
(217)   **F. T. Farrell***, Binghamton University, and **P.
        Ontaneda**, UFPE (997-53-28)

10:30AM *New Topological Methods in Study of Biological*
▶ (218) *Intelligence.* Preliminary report.
        Amir H Assadi, University of Wisconsin-Madison
        (997-92-08)

Invited Address

11:10 AM – NOON   **Theater, Bart Luedeke (Student) Center**

(219)   *Vortices in the Ginzburg-Landau model of*
        superconductivity.
        Sylvia Serfaty, New York University-Courant
        Institute (997-35-03)

Invited Address

1:30 PM – 2:20 PM   **Theater, Bart Luedeke (Student) Center**

(220)   *Problems in topology left over from the twentieth*
        century.
        William Browder, Princeton University

Special Session on CR Geometry and Singularities, IV

2:30 PM – 5:25 PM   **Room 218, Memorial Hall**

Organizers: **Joseph J. Kohn**, Princeton University
             John P. D'Angelo, University of Illinois
             Xiaojun Huang, Rutgers University
             Andreea Nicoara, Harvard University

2:30PM *Interpolation and Sampling for divisors in $\mathbb{C}^n$.*
(221)   **Dror Varolin**, UIUC (997-32-220)

3:15PM *Whitney and Mizohata Structures.*
(222)   **Howard Jacobowitz**, Rutgers University
        (997-58-111)

4:00PM *Global problems in Cauchy-Riemann theory.*
▶ (223) Preliminary report.
        Roman Dwilewicz, University of Missouri
        (997-32-104)

4:45PM   *Noncommutative geometric techniques in CR*
(224)   *geometry.*
         Raphael S Ponge, Ohio State University
         (997-58-240)

Special Session on Convergence of Riemannian Manifolds, IV

2:30 PM – 5:40 PM   Room 321, Memorial Hall

Organizers: **Christina Sormani**, Herbert H. Lehman
             College (CUNY)
             Xiaochun Rong, Rutgers State
             University
             Guofang Wei, University of California
             Santa Barbara

2:30PM   *Rigidity of 5-manifolds of pinched positive sectional*
(225)   *curvature.* Preliminary report.
         Fuquan Fang, Nankai Institute of Mathemactis,
         Nankai University, China (997-53-60)

3:20PM   *Negative pinching and nilpotent groups.* Preliminary
(226)   report.
         Igor Belegradek*, Georgia Tech, and **Vilali
         Kapovitch**, University of California Santa Barbara
         (997-53-97)

4:10PM   *Classification of negatively pinched manifolds with*
(227)   *almost nilpotent fundamental groups.*
         Vitali Kapovitch*, University of California at Santa
         Barbara, and **Igor Belegradek**, Georgia Institute of
         Technology, (997-53-07)

5:00PM   Discussion of Pinching

Special Session on Analytic Convex Geometry, IV

2:30 PM – 4:50 PM   Room 302, Memorial Hall

Organizers: **Alina Stancu**, Polytechnic University
             Elisabeth Werner, Case Western
             Reserve University

2:30PM   *An integral geometric approach to strip*
(228)   *discrepancy estimates.*
         Allen D. Rogers, Elmhurst Collge (997-52-86)

3:00PM   *Convex bodies and harmonic analysis.* Preliminary
(229)   report.
         Eric L Grinberg, University of New Hampshire
         (997-52-209)

3:30PM   *Geometry of unit spheres in normed spaces.*
(230)   Preliminary report.
         Juan Carlos Alvarez Paiva, Polytechnic University
         (997-52-79)

4:00PM   *Intersection bodies and chordal symmetrals.*
(231)   Preliminary report.
         Monika Ludwig, TU Wien (997-52-216)

4:30PM   *Isometry invariant valuations on hyperbolic space.*
(232)   **Dan Klain**, UMass Lowell (997-52-156)

Special Session on Automorphic Forms and Analytic Number Theory, IV

2:30 PM – 5:20 PM   Room 201, Science and
                                     Technology Center

Organizers: **Stephen Miller**, Rutgers University
             Ramin Takloo-Bighash, Princeton
             University

2:30PM   *Quantum ergodicity on* $SL(2, \mathbb{Z}\backslash SL(2, \mathbb{R})$.
(233)   **Florin Spinu**, Johns Hopkins (997-11-252)

3:00PM   *On the exponents of the mod p reductions of an*
(234)   *elliptic curve.*
         William Duke, UCLA (997-11-247)

3:30PM   *An efficient characterization of prime numbers.*
(235)   **Manindra Agrawal**, IAS (997-11-250)

4:00PM   *On Quantum Unique Ergodicity for Locally*
(236)   *Symmetric Spaces.*
         Lior Silberman*, Princeton University, and **Akshay
         Venkatesh**, MIT (997-11-212)

4:30PM   *On Li's coefficients for automorphic L-functions.*
(237)   Preliminary report.
         Jeffrey C Lagarias, AT&T Labs-Research
         (997-11-43)

5:00PM   *Mean values of biquadratic zeta functions.*
(238)   **Gautam Chinta**, Brown (997-11-255)

Special Session on Homotopy Theory (in Honor of William Browder's 70th Birthday), IV

2:30 PM – 4:50 PM   Room 304, Memorial Hall

Organizers: **Martin Bendersky**, Hunter College
             Donald Davis, Lehigh University

2:30PM   *Noncommutative cohomology.* Preliminary report.
(239)   **J. Michael Boardman**, Johns Hopkins University
         (997-55-62)

3:00PM   *An Introduction to real Johnson-Wilson spectra.*
(240)   **Nitu Kitchloo** and **W Stephen Wilson***, Johns
         Hopkins University (997-55-27)

3:30PM   *Steenrod Operations and the Cohomology of Hopf*
(241)   *Algebra Extensions.*
         William M. Singer, Fordham University (997-55-99)

4:00PM   *The number of summands in* ν_1-*periodic homotopy*
(242)   *groups of* $SU(n)$.
         Katarzyna Potocka, Lehigh University (997-55-53)

4:30PM   *The Bousfield-Kan spectral sequence for Morava*
(243)   *K-theory.*
         José La Luz, The Graduate Center, City University
         of New York (997-55-38)

Special Session on Geometry of Protein Modelling, IV

2:30 PM – 4:50 PM   Room 102, Science and
                                     Technology Center

Organizers: **Ileana Streinu**, Smith College
             Jack Snoeyink, University of North
             Carolina at Chapel Hill

2:30PM   *Computational Proteomics.*
(244)   **Mark Gerstein**, Yale University (997-92-230)

3:00PM   *Protein Evolution within a Structural Space.*
(245)   **Eric J Deeds***, Department of Molecular and
         Cellular Biology, Harvard University, **Nikolay V
         Dokholyan**, Department of Biochemistry and
         Biophysics, University of North Carolina School of
         Medicine, and **Eugene I Shakhnocich**, Department
         of Chemistry and Chemical Biology, Harvard
         University (997-92-224)

3:30PM   *Using Motion Planning to Approximate Protein*
▶ (246) *Folding Landscapes.*
         Nancy M. Amato, Texas A&M University
         (997-92-208)

4:00PM   *Global Search in High-dimensional Conformation*
▶ (247) *Spaces.* Preliminary report.
         Oliver Brock*, Univeristy of Massachusetts
         Amherst, and **TJ Brunette**, University of
         Massachusettes Amherst (997-92-190)

4:30PM   *Atomic Details of DNA Polymerase* β
(248)   *Conformational Transition Pathway Revealed by*
         Novel Simulation Methods.
         Karunesh Arora*, New York University, and **Tamar
         Schlick**, Department of Chemistry and Courant
         Institute of Mathematical Sciences (997-92-134)

Special Session on Homotopical Physics, IV

2:30 PM – 5:20 PM   **Room 303, Memorial Hall**

Organizers: **James Stasheff**, University of North Carolina
            Thomas J. Lada, North Carolina State University
            Alexander A. Voronov, University of Minnesota

2:30PM (249)   *A chain-level version of string topology.* Preliminary report.
James E. McClure* and **Jeffrey H. Smith**, Purdue University (997-55-131)

3:00PM (250)   *A Morse theoretic approach to string topology.* Preliminary report.
Ralph L Cohen, Stanford University (997-57-64)

3:30PM ▶ (251)   *Rational curves, sigma models and string topology.* Preliminary report.
Sadok Kallel, University of Lille (997-55-222)

4:00PM (252)   *Algebraic structures on generalized strings and applications.*
Vladimir V. Chernov*, Dartmouth College, and **Yuli B Rudyak**, University of Florida (997-57-49)

4:30PM (253)   *Graphs in String Topology.*
Veronique Godin, Stanford University (997-55-183)

5:00PM (254)   *Algebraic structures and string topology.*
Dennis Sullivan, SUNY at StonyBrook & Graduate Center of CUNY (997-22-239)

Special Session on Elliptic Surfaces and Elliptic Fibrations, IV

2:30 PM – 3:20 PM   **Room 201, Memorial Hall**

Organizers: **William L. Hoyt**, Rutgers University
            Joseph H. Silverman, Brown University
            Charles F. Schwartz, Rider University

2:30PM ▶ (255)   *The effect of zeros of elliptic curve L-functions at the central point on nearby zeros.* Preliminary report.
Steven J Miller*, The Ohio State University, **Eduardo Duenez**, Johns Hopkins University, and **Aaron Lint**, The Ohio State University (997-11-136)

3:00PM (256)   *Moments of the rank of elliptic curves.* Preliminary report.
Siman Wong, University of Massachusetts Amherst (997-11-105)

Lesley M. Sibner
Associate Secretary
Brooklyn, New York