Program of the Sessions

Williamstown, Massachusetts, October 13–14, 2001

Saturday, October 13

AMS Exhibit and Book Sale

7:30 AM – 4:00 PM   Science Court, Bronfman Science Center

Meeting Registration

7:30 AM – 4:00 PM   Science Court, Bronfman Science Center

Special Session on Number Theory, Holomorphic Dynamics, and Algebraic Dynamics, I

8:30 AM – 10:50 AM   Room 106, Bronfman Science Center

Organizers: **Robert L. Benedetto**, University of Rochester

John W. Milnor, IMS and SUNY at Stony Brook

Kevin M. Pilgrim, University of Missouri at Rolla

8:30AM (1) *On the arithmetical dynamics of affine automorphisms.*
Sandra Marcello, Institut de mathematiques de Jussieu, Universite Paris 7 (971-11-10)

9:00AM ► (2) *On asymptotic distribution ($p \to \infty$) of cycles for p-adic dynamical systems.*
Andrei Khrennikov* and **Marcus Nilsson**, Vaxjo University (971-37-11)

9:30AM *Discussion.*

10:00AM (3) *Notes on repelling density in p-adic dynamics.* Preliminary report.
Robert L Benedetto, Boston University (971-37-99)

10:30AM (4) *Algebraic $\mathbb{Z}^d$-Actions and Commutative Algebra.*
Douglas Lind, University of Washington (971-37-56)

Special Session on Commutative Algebra, I

8:30 AM – 10:50 AM   Room 103, Bronfman Science Center

Organizers: **Susan R. Loepp**, Williams College

Graham J. Leuschke, University of Kansas

8:30AM (5) *Some examples on tight closure and completion.* Preliminary report.
Christel Rotthaus*, Michigan State University, and **Susan Loepp**, Williams College (971-13-104)

9:00AM (6) *Computing Test Ideals.*
Moira A McDermott, Gustavus Adolphus College (971-13-179)

9:30AM (7) *Limit Hilbert-Kunz Multiplicities.* Preliminary report.
Claudia Miller*, University of Toronto, and **Anurag K Singh**, University of Utah (971-13-205)

10:00AM (8) *The Plus Closure of an Ideal.* Preliminary report.
Leslie D Hayes, St. Joseph's University (971-13-157)

10:30AM (9) *The Direct Summand Conjecture in Dimension Three.*
Raymond C Heitmann, University of Texas at Austin (971-13-128)

Special Session on Algebraic and Topological Combinatorics, I

8:30 AM – 10:20 AM   Room 105, Clark Hall

Organizers: **Eva Maria Feichtner**, ETH, Zürich, Switzerland

Dmitry N. Kozlov, KTH, Stockholm, Sweden

8:30AM (10) *Combinatorics of complex line arrangements with essential jumping loci.* Preliminary report.
Sergey Yuzvinsky, University of Oregon, Eugene (971-05-49)

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 22, Issue 4 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.

9:00AM *Lower central series and free resolutions of*
(11) *arrangements.*
Henry K. Schenck, Texas A&M University, and
Alexander I. Suciu*, Northeastern University
(971-16-78)

9:30AM *Algebras generated by reciprocals of linear forms.*
(12) **Hiroaki Terao**, Tokyo Metropolitan University
(971-05-178)

10:00AM *Tutte Polynomials of Hyperplane Arrangements.*
(13) **Federico Ardila**, M.I.T. (971-05-191)

Special Session on Harmonic Analysis since the Williamstown Conference of 1978, I

8:30 AM – 10:50 AM   Room 104, Bronfman Science Center

Organizers: **Janine E. Wittwer**, Williams College
David Cruz-Uribe, Trinity College

8:30AM *BMO, weighted norm inequalities, and product*
(14) *spaces: old and new.*
Cora Sadosky, Howard University (971-42-41)

9:30AM *One dimensional weighted norm inequalities since*
(15) *the 1978 Williamstown conference.*
Benjamin Muckenhoupt, Rutgers University
(971-42-158)

10:00AM *Sharp Weighted Estimates.*
(16) **Stefanie Petermichl**, IAS (971-42-118)

10:30AM Discussion.

Special Session on Ergodic Theory, I

8:30 AM – 10:50 AM   Room 105, Bronfman Science Center

Organizer: **Cesar Silva**, Williams College

8:30AM *Multidimensional Tiling Systems.*
(17) **Ethan Coven**, Wesleyan University, **Aimee Johnson***, Swarthmore College, **Natasa Jonoska**, University of South Florida, and **Kathleen Madden**, Drew University (971-37-172)

9:00AM *Sets that force recurrence.*
(18) **Alexander Blokh**, University of Alabama at Birmingham, and **Adam Fieldsteel***, Wesleyan University (971-37-117)

10:00AM *Markov Partitions for Julia Sets Arising From*
(19) *Numerical Root Finding Algorithms.* Preliminary report.
Kyle E Kneisl, University of North Carolina, Chapel Hill (971-37-173)

10:30AM *Dynamics of the Weierstrass Elliptic Function.*
(20) **Lorelei Koss***, Dickinson College, and **Jane Hawkins**, University of North Carolina - Chapel Hill (971-37-151)

Special Session on Integrable Systems and Quantum Groups, I

8:30 AM – 10:50 AM   Room 205, Thompson Physics Lab

Organizers: **Pavel I. Etingof**, Massachusetts Institute of Technology
Emma Previato, Boston University

8:30AM *Family algebras and characteristic identities.*
(21) **Natalia Rozhkovskaya**, University of Pennsylvania (971-15-37)

9:00AM *The Worst Thing That's Ever Happened To The*
(22) *Burgers Equation.*
Boris A. Kupershmidt, The University of Tennessee Space Institute (971-37-14)

9:30AM *A counterpart of the Verlinde algebra for the small*
(23) *quantum group.*
Anna Lachowska, MIT (971-20-212)

10:00AM *Unital Pseudoalgebras and Their Representations.*
(24) **Alexander Retakh**, Yale University (971-16-126)

10:30AM *On some categorical analogues of Bernstein's*
(25) *center.*
Alexander Braverman, Harvard University
(971-14-209)

Special Session on History of Mathematics, I

9:00 AM – 10:50 AM   Room 112, Thompson Biology Lab

Organizers: **Glen R. Van Brummelen**, Bennington College
Della D. Fenster, Richmond University
James J. Tattersall, Providence College
Shawnee L. McMurran, California State University, San Bernadino

9:00AM *Barnaba Tortolini (1808-1874) and the Foundation*
► (26) *of the "Annali di scienze matematiche e fisiche."*
Preliminary report.
Laura Martini, University of Virginia (971-01-145)

9:30AM *The Development of a Publication Community:*
► (27) *Nineteenth-Century Mathematics in British Scientific*
Journals. Preliminary report.
Sloan E Despeaux, University of Virginia
(971-01-143)

10:00AM *Clark University, 1889-1892.*
► (28) **David M Burton**, University of New Hampshire
(971-01-81)

10:30AM *Funds for Mathematics: Carnegie Institution of*
► (29) *Washington support for Mathematics from*
1902-1921. Preliminary report.
Della D. Fenster, University of Richmond
(971-01-149)

Special Session on Geometry and Topology of the Universe, I

9:00 AM – 10:50 AM   Room 123 (Wege Auditorium), Thompson Chemistry Lab

Organizers: **Colin C. Adams**, Williams College
Glenn Starkmann, Case Western Reserve University
Jeffrey R. Weeks, Canton, New York

9:00AM *Elementary Introduction to Cosmic Crystallography.*
(30) **Jean-Pierre Luminet**, Paris Observatory, France
(971-83-51)

9:40AM *Elementary Introduction to Cosmic Topology and*
(31) *the Microwave Background.*
Tarun Souradeep, I.U.C.A.A., Pune, India
(971-85-137)

10:20AM *Elementary Introduction to Brane Cosmology.*
(32) **Nima Arkani-Hamed**, Lawrence Berkeley Lab
(971-85-160)

Special Session on Diophantine Problems, I

9:00 AM – 10:50 AM   Room 202, Thompson Chemistry Lab

Organizers: **Edward B. Burger**, Williams College
Jeffrey D. Vaaler, University of Texas at Austin

9:00AM *"The Magic Matrix", a composition by Daniel Shanks.*
► (33) **Alfred J (Alf) van der Poorten**, Macquarie University, Sydney (971-11-31)

9:30AM *From Additive Number Theory to Rohlin's Lemma.*
(34) **Wolfgang M. Schmidt**, University of Colorado (971-11-93)

10:00AM *Weyl's inequality.*
▶ (35) **Roger C Baker**, BYU (971-11-38)

10:30AM *Ternary Diophantine equations via modular forms.*
(36) **Michael A Bennett***, U.B.C. / Illinois, and **Chris Skinner**, U. of Michigan (971-11-155)

Special Session on Nonlinear PDEs and Calculus of Variations, I

9:00 AM – 10:50 AM   **Room 202, Thompson Biology Lab**

Organizers: **Yisong Yang**, Polytechnic University
Fanghua Lin, Courant Institute, New York University
Nader Masmoudi, Courant Institute, New York University

9:00AM *Exterior systems without cohomology.*
(37) **Thomas H. Otway**, Yeshiva University (971-35-97)

9:30AM *Limiting Wall Energies for Micromagnetic Materials with Planar Anisotropy.*
(38) **Sylvia L Serfaty**, Courant Institute (971-35-50)

10:00AM *Topology of Sobolev Mappings.*
(39) **Fengbo Hang*** and **Fanghua Lin**, Courant Institute, NYU (971-49-65)

10:30AM *Removable Point Singularities in Generalized Yang-Mills Equations.* Preliminary report.
(40) **Lesley M Sibner***, Polytechnic University, **Robert J Sibner**, CUNY, Graduate Center and Brooklyn College, and **Yisong Yang**, Polytechnic University (971-35-123)

Special Session on Abelian Varieties, I

9:00 AM – 10:45 AM   **Room 203, Thompson Physics Lab**

Organizers: **Alexander Polishchuk**, Boston University
Emma Previato, Boston University

9:00AM *Mordell-Weil ranks of quadratic twists of pairs of elliptic curves.*
(41) **Gwynneth G Coogan***, University of Wisconsin, Madison, and **Jorge Jimenez-Urroz**, Universidad Autonoma De Madrid (971-11-197)

9:30AM *integral motives and special values of zeta functions.*
(42) **Niranjan Ramachandran**, University of Maryland (971-14-32)

10:00AM *Geometry of Hilbert modular varieties over ramified primes.*
(43) **Eyal Z Goren***, McGill University, and **Fabrizio Andreatta**, University of Padova (971-14-119)

Invited Address

11:00 AM – 11:50 AM   **Auditorium, Bronfman Science Center**

(44) *Theta functions, old and new.*
Emma Previato, Boston University (971-14-03)

Invited Address

1:30 PM – 2:20 PM   **Auditorium, Bronfman Science Center**

(45) *Harmonic maps, gauge fields, and magnetic vortices.*
Yisong Yang, Polytechnic University (971-35-02)

Special Session on History of Mathematics, II

2:30 PM – 5:50 PM   **Room 112, Thompson Biology Lab**

Organizers: **Glen R. Van Brummelen**, Bennington College
Della D. Fenster, Richmond University
James J. Tattersall, Providence College
Shawnee L. McMurran, California State University, San Bernadino

2:30PM *Calculus in Sanskrit? Indian mathematics and*
▶ (46) *infinitesimal analysis.*
Kim Plofker, Dibner Institute for the History of Science and Technology, MIT (971-01-185)

3:00PM *Cartwright and Littlewood on Van der Pol's*
▶ (47) *Equation.*
Shawnee L McMurran*, California State University, San Bernardino, and **James J Tattersall**, Providence College (971-01-200)

3:30PM *Multiple Trigonometric Series and Number Theory.*
(48) **Victor L Shapiro**, University of California, Riverside (971-01-22)

4:00PM *Mathematics at the University of Virginia,*
▶ (49) *1825-1900.*
Adrian C Rice*, Randolph-Macon College, **Karen H Parshall**, **Sloan E Despeaux** and **Laura Martini**, University of Virginia (971-01-55)

4:30PM *Euler and the Gamma Function.*
▶ (50) **Edward Sandifer**, Western Connecticut State U (971-01-21)

5:00PM *H.J.S. Smith and Prime Numbers.* Preliminary
▶ (51) report.
Francine F. Abeles, Kean University (971-11-40)

5:30PM *Robert Murphy - Cork, Cambridge, and London.*
▶ (52) Preliminary report.
Patricia R Allaire, Queensborough Community College, CUNY (971-01-20)

Special Session on Number Theory, Holomorphic Dynamics, and Algebraic Dynamics, II

2:30 PM – 5:20 PM   **Room 106, Bronfman Science Center**

Organizers: **Robert L. Benedetto**, University of Rochester
John W. Milnor, IMS and SUNY at Stony Brook
Kevin M. Pilgrim, University of Missouri at Rolla

2:30PM *Expansive subdynamics for algebraic $\mathbb{Z}^d$-actions.*
(53) **Manfred L. Einsiedler**, Penn State University (971-37-199)

3:00PM *Mixing for $\mathbb{Z}^d$-actions and tight polyhedra.*
(54) **Manfred Einsiedler**, University of Vienna, and **Thomas Ward***, University of East Anglia (971-37-43)

3:30PM Discussion.

4:00PM *Interpretations of Thurston Rigidity.*
(55) **Adam L Epstein**, University of Warwick (971-37-139)

4:30PM *Dessins d'enfants and Hubbard trees.*
(56) **Kevin M Pilgrim**, Indiana University, Bloomington (971-37-150)

5:00PM *Integral Points in Orbits of Rational Maps.*
▶ (57) **Joseph H Silverman**, Brown University (971-11-15)

Special Session on Commutative Algebra, II

2:30 PM – 5:20 PM   Room 103, Bronfman Science Center

Organizers: **Susan R. Loepp**, Williams College
Graham J. Leuschke, University of Kansas

2:30PM *Computing the multiplicity of monomial ideals.*
(58) *Preliminary report.*
Donatella Delfino, **Amelia Taylor***, **Wolmer Vasconcelos**, Rutgers University, **Rafael Villarreal**, Centro de Investigacion y de Estudios Avanzados dellPN, and **Nick Weinginger**, Rutgers University (971-13-85)

3:00PM *The facet ideal of a simplicial complex.* Preliminary
(59) report.
Sara Faridi, George Washington University (971-13-80)

3:30PM *Primary Decomposition: Compatibility,*
(60) *Independence and Linear Growth.*
Yongwei Yao, University of Kansas (971-13-45)

4:00PM *Symbolic Powers of Prime Ideals.* Preliminary report.
(61) **Sean M Sather-Wagstaff**, University of Illinois at Urbana-Champaign (971-13-96)

4:30PM *Direct-sum cancellation in cubic orders.* Preliminary
(62) report.
Ryan Karr, University of Nebraska-Lincoln (971-13-175)

5:00PM *A numerical characterization of the S_2-ification of a*
(63) *Rees algebra.*
Cătălin Ciupercă, University of California at Riverside (971-13-79)

Special Session on Algebraic and Topological Combinatorics, II

2:30 PM – 5:50 PM   Room 105, Clark Hall

Organizers: **Eva Maria Feichtner**, ETH, Zürich, Switzerland
Dmitry N. Kozlov, KTH, Stockholm, Sweden

2:30PM *Free probability for combinatorialists.* Preliminary
(64) report.
Richard P Stanley, M.I.T. (971-05-68)

4:00PM *Quasisymmetric functions and Eulerian*
(65) *enumeration.*
Louis J Billera*, **Samuel K Hsiao** and **Stephanie van Willigenburg**, Cornell University (971-05-89)

4:30PM *Variations of hyperoctahedral descent algebras.*
(66) *Preliminary report.*
Ira M Gessel, Brandeis University (971-05-59)

5:00PM *Lower bounds for Kazhdan-Lusztig polynomials*
(67) *from patterns.* Preliminary report.
Sara Billey, MIT, and **Tom Braden***, University of Massachusetts, Amherst (971-05-144)

5:30PM *P-kernels, IC bases, and Kazhdan-Lusztig*
(68) *polynomials.* Preliminary report.
Francesco Brenti, Universita' di Roma "Tor Vergata" (971-05-182)

Special Session on Geometry and Topology of the Universe, II

2:30 PM – 5:35 PM   Room 123 (Wege Auditorium), Thompson Chemistry Lab

Organizers: **Colin C. Adams**, Williams College
Glenn Starkmann, Case Western Reserve University

Jeffrey R. Weeks, Canton, New York

2:30PM *Elementary Introduction to the Geometry of*
(69) *Manifolds.* Preliminary report.
John G Ratcliffe, Vanderbilt University (971-53-75)

3:10PM *Elementary Introduction to Spin Structures.*
(70) **Roger Penrose**, Oxford University (971-81-184)

3:50PM *Elementary Introduction to the Laplace Operator*
▶ (71) *and its Generalizations.*
Sigurdur Helgason, MIT (971-53-58)

4:30PM *Elementary Introduction to Topological Defects.*
(72) **Jean-Philippe Uzan**, Laboratoire de Physique Theorique, Orsay, France (971-85-35)

5:10PM *A guided tour of spherical 3-manifolds.*
▶ (73) **Jeffrey R. Weeks**, Canton NY (971-57-13)

5:20PM *Topological lensing in spherical spaces.*
(74) **Roland Lehoucq**, CEA Saclay, Service d'astrophysique (971-85-42)

Special Session on Diophantine Problems, II

2:30 PM – 4:50 PM   Room 202, Thompson Chemistry Lab

Organizers: **Edward B. Burger**, Williams College
Jeffrey D. Vaaler, University of Texas at Austin

2:30PM *Vu's thin basis theorem in Waring's problem.*
(75) **Trevor D Wooley**, University of Michigan (971-11-176)

3:00PM *The Ideal Class Pairing and Isogenies of Elliptic*
(76) *Curves.*
Duncan A Buell, University of South Carolina, and **Gregory S Call***, Amherst College (971-11-122)

3:30PM *Dense Egyptian Fractions.*
(77) **Greg Martin**, University of British Columbia (971-11-17)

4:00PM *Congruences like Ramanujan's for the partition*
▶ (78) *function.*
Scott D Ahlgren*, University of Illinois at Urbana-Champaign, and **Ken Ono**, University of Wisconsin at Madison (971-11-114)

4:30PM *Numerical calculation of Mahler's measure.*
▶ (79) *Preliminary report.*
Fernando Rodriguez Villegas, University of Texas at Austin (971-11-54)

Special Session on Harmonic Analysis since the Williamstown Conference of 1978, II

2:30 PM – 4:50 PM   Room 104, Bronfman Science Center

Organizers: **Janine E. Wittwer**, Williams College
David Cruz-Uribe, Trinity College

2:30PM *Translation averages of dyadic weights are not*
(80) *always good weights.*
Lesley A. Ward, Harvey Mudd College (971-42-67)

3:00PM *Matrix weighted Besov spaces.* Preliminary report.
(81) **Svetlana Roudenko**, Michigan State University (971-42-70)

3:30PM *Some Coefficient Estimates for H^p functions and a*
(82) *Conjecture of Hummel, Scheinberg, and Zalcman.*
Preliminary report.
Catherine A Beneteau*, Seton Hall University, and **Boris Korenblum**, The University at Albany (971-42-44)

4:00PM *Decaying stopping times, weights and applications.*
(83) **Maria C. Pereyra**, University of New Mexico, Albuquerque, NM (971-47-170)

4:30PM *Best constant inequalities involving the Fourier and*
(84) *Hilbert transforms.*
Brian Hollenbeck, Emporia State University, **Nigel J Kalton**, University of Missouri, and **Igor E Verbitsky***, Univ. of Missouri (971-42-111)

Special Session on Ergodic Theory, II

2:30 PM – 5:50 PM   **Room 105, Bronfman Science Center**

Organizer: **Cesar Silva**, Williams College

2:30PM *Endomorphisms isomorphic to the Bernoulli p-shift.*
(85) Preliminary report.
Peter Jong and **Andres del Junco***, University of Toronto (971-28-63)

3:00PM *Conjugations between T and T^2. Preliminary report.*
(86) **Geoffrey R Goodson**, Towson University (971-37-34)

3:30PM *Convergence and Divergence of Multiparameter*
(87) *Processes.*
Georgios Argiris and **Joseph Rosenblatt***, University of Illinois at Champaign-Urbana (971-28-48)

4:00PM Discussion.

4:30PM *Entropy Gaps in $\mathbb{Z}^d$ Shifts of Finite Type.* Preliminary
(88) report.
Anthony Quas, University of Memphis, and **Ayse A Sahin***, DePaul University (971-37-168)

5:00PM *Measures of maximal relative entropy.* Preliminary
(89) report.
Karl Petersen*, University of North Carolina, **Anthony Quas**, University of Memphis, and **Sujin Shin**, University of Victoria (971-37-84)

5:30PM *Positive Livciz theorem for Anosov diffeomorphisms*
(90) *and flows and applications to maximizing measures.*
Philippe Thieullen, Univeristy of Paris - Orsay (971-37-73)

Special Session on Nonlinear PDEs and Calculus of Variations, II

2:30 PM – 4:20 PM   **Room 202, Thompson Biology Lab**

Organizers: **Yisong Yang**, Polytechnic University
Fanghua Lin, Courant Institute, New York University
Nader Masmoudi, Courant Institute, New York University

2:30PM *Some local and global properties of solutions to a*
(91) *Hession quotient equation.*
Jiguang Bao, Beijing Normal Unversity, ChinaColu, **Jingyi Chen**, University of British Columbia, Canada, **Bo Guan***, University of Tennessee, USA, and **Min Ji**, Chinese Academy of Sciences, China (971-35-95)

3:00PM *Two Dimensional Minimal Graphs over Unbounded*
(92) *Domains.*
Joel Spruck, Johns Hopkins University (971-35-103)

4:00PM *Hydrodynamic limit of the Boltzmann equation.*
(93) **Nader Masmoudi**, Courant Institute (971-76-72)

Special Session on Abelian Varieties, II

2:30 PM – 4:50 PM   **Room 203, Thompson Physics Lab**

Organizers: **Alexander Polishchuk**, Boston University
Emma Previato, Boston University

(94) *Algebraic varieties modulo Zariski dense*
equivalence relations. Preliminary report.
Alexandru Buium, University of New Mexico (971-14-57)

(95) *Quaternionic pryms and Hodge classes.*
Bert van Geemen, University of Pavia, Italy (971-14-211)

2:30PM *The Clifford algebra of a binary form.*
(96) **Rajesh S. Kulkarni**, University of Wisconsin, Madison (971-14-147)

3:00PM *Hodge structures on abelian varieties.* Preliminary
(97) report.
Salman Abdulali, East Carolina University (971-14-141)

3:30PM *Hyperelliptic jacobians and ℓ-adic representations.*
(98) Preliminary report.
Yuri G Zarhin, Penn State University (971-14-90)

4:00PM *Intersections of certain modular threefolds.*
▶ (99) Preliminary report.
William L. Hoyt*, Rutgers University, and **Charles F. Schwartz**, Rider University (971-14-25)

4:30PM *On Sections of Yoshida Elliptic Surfaces and*
(100) *Negative Vectors.* Preliminary report.
William L. Hoyt, Rutgers University, and **Charles F. Schwartz***, Rider University (971-14-28)

Special Session on Integrable Systems and Quantum Groups, II

2:30 PM – 5:50 PM   **Room 205, Thompson Physics Lab**

Organizers: **Pavel I. Etingof**, Massachusetts Institute of Technology
Emma Previato, Boston University

2:30PM *Universal Algebras of Pseudo-solutions of*
(101) *Noncommutative Differential Polynomials.*
Preliminary report.
Vladimir Retakh, Rutgers University (971-16-130)

3:00PM *Quantum McKay correspondence.*
(102) **Viktor V Ostrik**, MIT (971-20-164)

3:30PM *Weak Hopf algebras and dynamical quantum*
(103) *groups at roots of unity.*
Dmitri Nikshych, University of New Hampshire (971-16-134)

4:00PM *Field Analog of The Elliptic Calogero-Moser System.*
(104) **Alexei A Akhmetshin***, **Igor Krichever**, Columbia University, and **Yuri Volvovsky** (971-37-154)

4:30PM *Noncommutative instantons and quantum groups.*
(105) Preliminary report.
Igor Frenkel, Yale University, and **Marcos Jardim***, University of Pennsylvania (971-16-29)

5:00PM *Quantum dynamical Yang-Baxter equation over a*
(106) *nonabelian base.* Preliminary report.
Ping Xu, Penn State University (971-81-180)

5:30PM *On a q analogue of McKay correspondence.*
(107) **Alexander A. Kirillov***, SUNY at Stony Brook, and **Viktor Ostrik**, MIT (971-18-215)

Session for Contributed Papers

2:30 PM – 4:40 PM   **Room 206, Thompson Chemistry Lab**

2:45PM *Systems of additive forms over p-adic fields.*
(108) **Michael P Knapp**, University of Rochester (971-11-27)

3:00PM *Evaluation of Additive Weil Sums Whose Terms*
(109) *Have Weight-2 Exponents.*
Donald D Mills, USMA (971-11-64)

3:15PM (110) *A CR sequence containing infinitely many quasireflexive spaces.* Preliminary report. **Andrew B Perry**, Springfield College (971-46-66)

3:30PM (111) *New examples of fibered arrangements.* Preliminary report. **Michael J Falk***, Northern Arizona University, **Cahmlo P Olive**, Lawrence University, and **Eric Samansky**, Haverford College (971-57-153)

3:45PM (112) *Generalized Billiard Paths and Morse Theory for Manifolds with Corners.* **David G Handron**, Carnegie Mellon University (971-57-190)

4:00PM (113) *Topology and Ricci Curvature.* **Christina A Sormani**, Lehman College, City University of New York (971-58-112)

4:15PM (114) *On the Formal Analogy Between Multi-Particle Quantum Entanglement and Entanglement in Link Theory.* Preliminary report. **P. Robert Kotiuga**, Boston University , Dept. of ECE (971-81-26)

4:30PM ▶ (115) *Generalized Coset Codes.* **Sarah A Spence**, Cornell University (971-94-187)

Williams College Department of Mathematics Reception

6:00 PM – 7:00 PM   **Faculty House, Williams College**

Sunday, October 14

AMS Exhibit and Book Sale

7:30 AM – NOON   **Science Court, Bronfman Science Center**

Meeting Registration

7:30 AM – NOON   **Science Court, Bronfman Science Center**

Special Session on Ergodic Theory, III

8:00 AM – 10:50 AM   **Room 105, Bronfman Science Center**

Organizer: **Cesar Silva**, Williams College

8:00AM ▶ (116) *Ergodicity of monomial maps at p-adic spheres.* **Andrei Yurievich Khrennikov**, Vaxjo University (971-37-214)

8:30AM ▶ (117) *Ergodicity results for queuing systems.* Preliminary report. **Patricia Giurgescu**, Pace University (971-60-169)

9:00AM (118) *Sequences of integers associated to infinite measure preserving transformations.* Preliminary report. **Stanley Eigen**, Northeastern University (971-37-107)

9:30AM (119) *Rank one $\mathbb{Z}^d$ actions with singular spectral type.* Preliminary report. **Karin B Reinhold*** and **Darlene Olsen**, University at Albany, SUNY (971-37-195)

10:00AM (120) *On Restricted Weak Type (1,1); The Discrete Case.* **Roger L Jones***, DePaul University, **Mustafa Akcoglu**, University of Toronto, **John Baxter**, University of Minneapolis, and **Alexandra Bellow**, Northwestern University (971-42-46)

10:30AM (121) *Volume preserving homeomorphisms of the Hilbert cube.* **Vidhu S Prasad**, University of Massachusetts Lowell (971-37-198)

Special Session on Geometry and Topology of the Universe, III

8:15 AM – 10:50 PM   **Room 123 (Wege Auditorium), Thompson Chemistry Lab**

Organizers: **Colin C. Adams**, Williams College

Glenn Starkmann, Case Western Reserve University

Jeffrey R. Weeks, Canton, New York

8:15AM (122) *Quest for a self-tuning brane-world solution to the cosmological constant problem.* **James M Cline**, McGill University (971-83-116)

8:35AM (123) *Inflationary Models - Basic Theory, Observational Implications and Tests.* **Marek Demianski**, Warsaw University (971-85-152)

8:55AM (124) *Cosmic Crystallographic Methods vs. Observational Uncertainties.* **Jean-Pierre Luminet**, Paris Observatory (971-83-52)

9:15AM (125) *Measuring Statistical isotropy of the Cosmic Microwave background.* Preliminary report. **Tarun Souradeep**, I.U.C.A.A. (971-85-138)

9:35AM ▶ (126) *Implementing the matched circle search with MAP data.* Preliminary report. **Neil J Cornish**, Montana State University (971-51-171)

9:55AM (127) *Compact Hyperbolic Manifolds as Extra Spatial Dimensions.* **Mark Trodden**, Syracuse University (971-83-82)

10:15AM (128) *Cosmology of Compact Hyperbolic Extra Dimensions.* **Glenn D. Starkman***, Case Western Reserve University, **Mark Trodden**, Syracuse University, and **Dejan Stojkovic**, University of Alberta (971-83-102)

10:35AM (129) *(De)Constructing Dimensions.* **Nima Arkani-Hamed**, Lawrence Berkeley Lab (971-85-161)

Special Session on Number Theory, Holomorphic Dynamics, and Algebraic Dynamics, III

8:30 AM – 10:50 AM   **Room 106, Bronfman Science Center**

Organizers: **Robert L. Benedetto**, University of Rochester

John W. Milnor, IMS and SUNY at Stony Brook

Kevin M. Pilgrim, University of Missouri at Rolla

8:30AM (130) *Heights and Rational Dynamics.* Preliminary report. **Susan Goldstine**, Ohio State University (971-11-201)

9:00AM *Discussion.*

9:30AM (131) *Computer-assisted analysis of discontinuous rational rotations on a torus.* **Franco Vivaldi***, Queen Mary, University of London, and **John H. Lowenstein**, New York University (971-37-39)

10:00AM (132) *A Thurston Algorithm for non-postsingularly finite polynomials and exponential functions.* **David A Brown**, Ithaca College (971-37-129)

10:30AM (133) *Diophantine approximation on manifolds via homogeneous dynamics.* **Dmitry Y Kleinbock**, Brandeis University (971-11-159)

Special Session on Commutative Algebra, III

8:30 AM – 10:50 AM   **Room 103, Bronfman Science Center**

Organizers: **Susan R. Loepp**, Williams College
Graham J. Leuschke, University of Kansas

8:30AM *Bounded versus finite representation type.*
(134) Preliminary report.
Roger A Wiegand* and **Sylvia M Wiegand**, University of Nebraska (971-13-132)

9:00AM *Bounds on multiplicities of local rings.*
(135) **Douglas A Hanes**, University of Minnesota (971-13-36)

9:30AM *Gorenstein Artin Algebras.* Preliminary report.
(136) **Hema Srinivasan***, University of Missouri, and **Anthony Iarrobino**, Northeastern University (971-13-83)

10:00AM *Vanishing of Ext and Gorenstein rings.*
(137) **Craig Huneke**, Department of Mathematics, University of Kansas, and **David A Jorgensen***, Department of Mathematics, University of Texas at Arlington (971-13-194)

10:30AM *Bounds for Indecomposable Modules Over*
(138) *One-Dimensional Rings.* Preliminary report.
Meral Arnavut, SUNY Fredonia, and **Sylvia M Wiegand***, University of Nebraska (971-13-133)

Special Session on Algebraic and Topological Combinatorics, III

8:30 AM – 10:50 AM   **Room 105, Clark Hall**

Organizers: **Eva Maria Feichtner**, ETH, Zürich, Switzerland
Dmitry N. Kozlov, KTH, Stockholm, Sweden

8:30AM *Recent progress in the topology of simplicial*
(139) *complexes.*
Victor S Reiner, University of Minnesota (971-05-94)

9:30AM *Multiplicity of the trivial representation in*
(140) *rank-selected homology of the partition lattice.*
Philip Hanlon and **Patricia Hersh***, University of Michigan (971-05-47)

10:00AM *The Distribution of Values in The Quadratic*
(141) *Assignment Problem.*
Tamon Stephen, University of Michigan (971-90-124)

10:30AM *A Geometric Classification of Trapezoid Orders.*
(142) **Kenneth P Bogart**, Dartmouth College (971-06-162)

Special Session on Harmonic Analysis since the Williamstown Conference of 1978, III

8:30 AM – 10:50 AM   **Room 104, Bronfman Science Center**

Organizers: **Janine E. Wittwer**, Williams College
David Cruz-Uribe, Trinity College

8:30AM *On the two weight problem for Singular Integral*
(143) *Operators.*
Carlos Pérez*, Universidad de Sevilla, and **David Cruz-Uribe**, Trinity College (971-42-60)

9:00AM *Inequalities for gradients on non-smooth domains.*
(144) **Caroline Sweezy**, New Mexico State University, and **James M Wilson***, University of Vermont (971-42-115)

9:30AM *Local Smoothing Results for a Family of Averaging*
(145) *Operators.*
David T Kung, St. Mary's College of Maryland (971-42-207)

10:00AM *Norm inequalities for time and space gradients of*
(146) *caloric functions on various domains.* Preliminary report.
Caroline Sweezy*, New Mexico State University, and **Michael Wilson**, University of Vermont (971-42-121)

10:30AM *Regularity results for a class of degenerate*
(147) *equations, preliminary report.* Preliminary report.
Richard L Wheeden, Rutgers University (971-35-206)

Special Session on Abelian Varieties, III

8:30 AM – 10:50 AM   **Room 203, Thompson Physics Lab**

Organizers: **Alexander Polishchuk**, Boston University
Emma Previato, Boston University

8:30AM *Rank Two Vector Bundles on Singular Curves.*
(148) Preliminary report.
Daniele Arcara, U. Georgia, Athens (971-14-196)

9:00AM *Locus of indeterminacy of the Prym map.*
(149) **Vitaly N Vologodsky**, University of Georgia (971-14-181)

9:30AM *On the geometry of certain rank 2 sheaves on Prym*
(150) *theta divisors.* Preliminary report.
Roy C Smith and **Robert Varley***, University of Georgia (971-14-189)

10:00AM *On multiplicities of points on Prym theta divisors.*
(151) Preliminary report.
Roy C Smith* and **Robert Varley**, University of Georgia (971-14-186)

10:30AM *Seshadri Constants of Abelian Varieties.*
(152) **Olivier V Debarre**, Universite de Strasbourg, France (971-14-30)

Special Session on Integrable Systems and Quantum Groups, III

8:30 AM – 10:50 AM   **Room 205, Thompson Physics Lab**

Organizers: **Pavel I. Etingof**, Massachusetts Institute of Technology
Emma Previato, Boston University

8:30AM *Quantum Zonal Spherical Functions.* Preliminary
(153) report.
Gail R Letzter, Virginia Tech (971-17-87)

9:00AM *Local systems on nilpotent orbits.* Preliminary
(154) report.
Eric N Sommers, University Of Massachusetts–Amherst (971-17-101)

9:30AM *Quantum Haar measures and spherical functions.*
(155) Preliminary report.
Milen T Yakimov, Cornell University (971-22-120)

10:00AM *Lusztig's bijection and tilting modules for quantum*
(156) *groups.* Preliminary report.
James E Humphreys, U. Massachusetts, Amherst (971-17-108)

10:30AM *On Lie algebras of BPS states.* Preliminary report.
(157) **Maxim Vybornov**, UMASS/MIT (971-17-174)

Special Session on History of Mathematics, III

9:00 AM – 10:50 AM   **Room 112, Thompson Biology Lab**

Organizers: **Glen R. Van Brummelen**, Bennington College

Della D. Fenster, Richmond University

James J. Tattersall, Providence College

Shawnee L. McMurran, California State University, San Bernadino

9:00AM (158) ▶ *A Description and History of the Olivier String Models at the United States Military Academy.* Preliminary report.
Amy E Shell, United States Military Academy (971-01-05)

9:30AM (159) ▶ *On using a table of logarithms.*
Daniel E. Otero, Xavier University (971-01-146)

10:00AM (160) ▶ *"Irrestistible to the boys": The Introduction of Graphical Techniques in Mathematics Teaching and the Creation of a New Class of Standard Problems, 1900-1920.* Preliminary report.
Eisso J Atzema, University of Maine (971-01-61)

10:30AM (161) ▶ *Calculus at West Point in the Nineteenth Century.* Preliminary report.
V. Frederick Rickey, West Point (971-01-193)

Special Session on Diophantine Problems, III

9:00 AM – 10:50 AM   Room 202, Thompson Chemistry Lab

Organizers: **Edward B. Burger**, Williams College

Jeffrey D. Vaaler, University of Texas at Austin

9:00AM (162) *Multivariate Diophantine equations with many solutions.*
Jan-Hendrik Evertse, Universiteit Leiden, **Pieter Moree**, Universiteit van Amsterdam, **Cameron L Stewart***, University of Waterloo, and **Robert Tijdeman**, Universiteit Leiden (971-11-62)

9:30AM (163) *The Four Faces of Lifting for the Elliptic Curve Discrete Logarithm Problem.* Preliminary report.
Joseph H Silverman, Brown University (971-11-16)

10:00AM (164) *Placeholder only; will not appear anywhere unless real title/abstract materializes. Submitted by Salter.*
John Tate, University of Texas at Austin (971-00-213)

10:30AM (165) *Algebraic Independence in Positive Characteristic.* Preliminary report.
Greg W Anderson, University of Minnesota, **W. Dale Brownawell***, Penn State, and **Matthew A Papanikolas**, Brown University (971-11-163)

Special Session on Nonlinear PDEs and Calculus of Variations, III

9:00 AM – 10:50 AM   Room 202, Thompson Biology Lab

Organizers: **Yisong Yang**, Polytechnic University

Fanghua Lin, Courant Institute, New York University

Nader Masmoudi, Courant Institute, New York University

9:00AM (166) *Boundary blow-up solutions for a class of semilinear elliptic equations.*
Seick Kim, University of Minnesota (971-35-69)

9:30AM (167) *Comparison principle for solutions of parabolic inequalities.*
Vasyl V. Kurta, Mathematical Reviews (971-35-113)

10:00AM (168) *On a nonlinear parabolic system- modeling chemical reactions in rivers.*
Wenxiong Chen*, Southwest Missouri State University, **Congming Li**, Univ of Colorado, and **Eric S Wright**, U of Colorado (971-35-91)

10:30AM (169) *A Blow up Result for a Nonlinear Heat Equation.*
Canan Celik, Michigan State University (971-35-127)

Invited Address

11:00 AM – 11:50 AM   Auditorium, Bronfman Science Center

(170) *On the Mass of Higher Dimensional Black Holes.*
Hubert Bray, Massachusetts Institute of Technology (971-53-01)

Invited Address

1:30 PM – 2:20 PM   Auditorium, Bronfman Science Center

(171) *An Introduction to Discrete Morse Theory.*
Robin Forman, Rice University (971-57-04)

Special Session on History of Mathematics, IV

2:30 PM – 5:20 PM   Room 112, Thompson Biology Lab

Organizers: **Glen R. Van Brummelen**, Bennington College

Della D. Fenster, Richmond University

James J. Tattersall, Providence College

Shawnee L. McMurran, California State University, San Bernadino

2:30PM (172) ▶ *Christoffel, the Equivalence Problem, and the Origins of Tensor Calculus.* Preliminary report.
Paul R Wolfson, West Chester University (971-01-131)

3:00PM (173) ▶ *How it was and how it might have been: why Carl Runge never worked in Stockholm.*
Roger L Cooke, University of Vermont (971-01-33)

3:30PM (174) *Some history of class numbers.*
Hardy Grant, York University, Toronto (971-01-86)

4:00PM (175) ▶ *Propriety, Polemic and Priority: The Euler-d'Alembert Correspondence.* Preliminary report.
Robert E Bradley, Adelphi University (971-01-19)

4:30PM (176) ▶ *200 Notable Mathematicians in 200 Years of West Point Mathematics.* Preliminary report.
David C Arney, The College of Saint Rose (971-01-23)

5:00PM (177) ▶ *Agustín Aragón, Mexican journalist and historian of science.* Preliminary report.
Alejandro R Garciadiego, Cinvestav/UNAM (971-01-156)

Special Session on Number Theory, Holomorphic Dynamics, and Algebraic Dynamics, IV

2:30 PM – 3:00 PM   Room 106, Bronfman Science Center

Organizers: **Robert L. Benedetto**, University of Rochester

John W. Milnor, IMS and SUNY at Stony Brook

Kevin M. Pilgrim, University of Missouri at Rolla

2:30PM *Problem session.*

Special Session on Algebraic and Topological Combinatorics, IV

2:30 PM – 5:20 PM   Room 105, Clark Hall

Organizers: **Eva Maria Feichtner**, ETH, Zürich, Switzerland

Dmitry N. Kozlov, KTH, Stockholm, Sweden

2:30PM (178) *A B_n-analogue of the chessboard complex.* Preliminary report.
Michelle L Wachs, University of Miami (971-05-203)

3:00PM (179) *The probabalistic zeta function and coset poset of a finite group.*
John Shareshian, Washington Univeristy, St. Louis (971-05-136)

3:30PM (180) ► *The matroid Grassmannian is homotopy equivalent to the real Grassmannian.*
Daniel K Biss, MIT (971-52-92)

4:00PM (181) *Webs in Grassmann Cells.*
Alexander Postnikov, MIT, Dept. Math (971-05-142)

4:30PM (182) *Moduli spaces and the Littlewood-Richardson cone.* Preliminary report.
Eric K Babson, University of Washington, and **Paul E Gunnells***, Rutgers University (971-14-188)

5:00PM (183) *Poset bundles.*
Laura M Anderson*, SUNY at Binghamton, and **Eric K Babson**, University of Washington (971-05-183)

Special Session on Diophantine Problems, IV

2:30 PM – 4:20 PM   Room 202, Thompson Chemistry Lab

Organizers: **Edward B. Burger**, Williams College
Jeffrey D. Vaaler, University of Texas at Austin

2:30PM (184) *View obstruction and lonely runners.*
Thomas W Cusick, SUNY at Buffalo (971-11-53)

3:00PM (185) *Why most Thue inequalities should have few solutions.* Preliminary report.
Jeffrey L Thunder, Northern Illinois University (971-11-110)

3:30PM (186) *The linear diophantine problem of Frobenius.* Preliminary report.
Matthias Beck, SUNY Binghamton (971-11-24)

4:00PM (187) ► *A Multi-dimensional Continued Fraction Algorithm: Triangle Sequences.* Preliminary report.
Thomas A Garrity, Williams College (971-11-140)

Special Session on Harmonic Analysis since the Williamstown Conference of 1978, IV

2:30 PM – 4:20 PM   Room 104, Bronfman Science Center

Organizers: **Janine E. Wittwer**, Williams College
David Cruz-Uribe, Trinity College

2:30PM (188) *Weighted norm inequalities for rough Calderón–Zygmund operators having no Fourier transform decay.*
David K Watson, Hightstown, New Jersey (971-42-71)

3:00PM (189) ► *Estimates with Global range for Oscillatory integrals with Concave phase.*
Björn G. Walther, University of Kalmar (971-42-105)

3:30PM (190) *Sharp weighted bounds for the Harmonic Square function.*
Janine Wittwer, Williams College, MA (971-42-100)

4:00PM (191) *On the well-posedness of the wave map problem in high dimensions.*
Andrea Nahmod*, **Atanas Stefanov**, The University of Massachusetts at Amherst, and **Karen Uhlenbeck**, The University of Texas at Austin (971-35-165)

Special Session on Nonlinear PDEs and Calculus of Variations, IV

2:30 PM – 3:20 PM   Room 202, Thompson Biology Lab

Organizers: **Yisong Yang**, Polytechnic University
Fanghua Lin, Courant Institute, New York University
Nader Masmoudi, Courant Institute, New York University

2:30PM (192) *Modified wave operators for the Hartree equation.*
Kenji Nakanishi, Graduate School of Mathematics, Nagoya University (971-35-210)

3:00PM (193) *On the shape of the vortex lattice for a layered superconductor in a parallel field.*
Stanley Alama*, **John Berlinsky** and **Lia Bronsard**, McMaster University (971-35-208)

Special Session on Abelian Varieties, IV

2:30 PM – 4:50 PM   Room 203, Thompson Physics Lab

Organizers: **Alexander Polishchuk**, Boston University
Emma Previato, Boston University

2:30PM (194) *Monodromy groups and abelian varieties.* Preliminary report.
Jeffrey D Achter, Columbia University (971-14-12)

3:00PM *Discussion on open questions on Abelian Varieties.*

3:30PM (195) *Vanishing thetanulls for some dihedral coverings of Riemann surfaces.* Preliminary report.
Robert D. M. Accola, Brown University (971-14-166)

4:00PM (196) *Differential and Algebraic Equations for Theta Functions and Constants.* Preliminary report.
Samuel Grushevsky, Harvard University (971-14-204)

4:30PM (197) *A new proof of the non-rationality of cubic threefolds.*
Tawanda Gwena, University of Georgia (971-14-202)

Special Session on Integrable Systems and Quantum Groups, IV

2:30 PM – 4:50 PM   Room 205, Thompson Physics Lab

Organizers: **Pavel I. Etingof**, Massachusetts Institute of Technology
Emma Previato, Boston University

2:30PM (198) *Symmetries in Feynman Graphs.* Preliminary report.
Dirk Kreimer, Boston University (971-81-192)

3:00PM (199) *Ideal Classes of the Weyl Algebra and Noncommutative Projective Geometry.*
Yuri Berest*, Cornell University, and **George Wilson**, Imperial College (971-14-177)

3:30PM (200) ► *"Almost" Operator Identities, Solitons and Particles.*
Alex Kasman, University of Charleston (971-15-74)

4:00PM (201) *Elliptic Sklyanin integrable systems for arbitrary reductive groups.* Preliminary report.
Jacques Hurtubise, Centre de Recherches Mathematiques, Universite de Montreal and Department of Mathematics, McGill University, and **Eyal Markman***, University of Massachusetts, Amherst (971-14-106)

4:30PM *Harmonic maps from a 2-torus to the 3-sphere:*
 (202) *some existence results.*
        Emma E Carberry, M.I.T. (971-51-76)

Lesley M. Sibner
Associate Secretary
Brooklyn, New York