
Program of the Sessions

Buffalo, New York, April 24–25, 1999

Saturday, April 24

Meeting Registration

7:30 AM – 4:00 PM Room 114, Diefendorf Hall

AMS Exhibit and Book Sale

7:30 AM – 4:00 PM Rotunda, Diefendorf Hall

Special Session on Knot and 3-Manifolds, I

8:00 AM – 10:50 AM Room 2, Diefendorf Hall

Organizers: **Thang T.Q. Le**, State University of New York at Buffalo
William W. Menasco, SUNY at Buffalo
Morwen B. Thistlethwaite, University of Tennessee

- 8:00AM (1) *Constructing horizontal and vertical compositions in cobordism and tangle double categories.*
Thomas Kerler*, The Ohio State University, and **Volodymyr V. Lyubashenko**, University of Kiev (943-57-172)
- 8:30AM (2) *Positive links are strongly quasipositive.*
▶ **Lee Rudolph**, Clark University (943-57-127)
- 9:00AM (3) *Non-trivial Invariants of Knotted Surfaces.*
▶ **J. Scott Carter***, University of South Alabama, **Daniel Jelsovsky**, University of South Florida, **Seiichi Kamada**, Osaka City University, **Laurel Langford**, University of Wisconsin at River Falls, and **Masahico Saito**, University of South Florida (943-57-94)
- 9:30AM (4) *Coloring Virtual Knots and Links.*
▶ **Daniel S. Silver*** and **Susan G. Williams**, Univ. of South Alabama (943-57-120)
- 10:00AM (5) *Ordering groups of pure braids and hyperplane arrangements.* Preliminary report.
▶ **Dale P. Rolfsen*** and **Djun M. Kim**, Univ. of BC (943-55-22)

- 10:30AM (6) *Continuous Fraction Expansions for Surface Diffeomorphisms.* Preliminary report.
Klaus Johannson, University of Tennessee (943-57-117)

Special Session on Representations of Lie Algebras, I

8:00 AM – 10:50 AM Room 8, Diefendorf Hall

Organizer: **Duncan J. Melville**, Saint Lawrence University

- 8:00AM (7) *Generalized Cartan type H Lie algebras.* Preliminary report.
Yuting Jia, Queen's University (943-17-48)
- 8:30AM (8) *The Fourier transform on finite and p-adic Lie algebras.*
Clifton Cunningham, University of Massachusetts at Amherst (943-22-125)
- 9:00AM (9) *Centralizer Algebras of $SO(2n, \mathbb{C})$.*
Cheryl P. Good, Swarthmore College (943-17-43)
- 9:30AM (10) *Tensor Product Realizations of Torsion Free Lie Modules.* Preliminary report.
Francis W. Lemire* and **Daniel J. Britten**, University of Windsor (943-17-24)
- 10:00AM (11) *On the Goldie Quotient Ring of the Enveloping Algebra of a Classical Simple Lie Superalgebra.*
Ian M. Musson, University of Wisconsin-Milwaukee (943-17-42)
- 10:30AM (12) *Down-up Algebras and Weyl Algebras.* Preliminary report.
Georgia Benkart, University of Wisconsin, Madison (943-16-84)

Special Session on Complex Geometry, I

8:00 AM – 10:40 AM Room 103, Diefendorf Hall

Organizers: **Terrence Napier**, Lehigh University
Mohan Ramachandran, State University of New York at Buffalo

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 20, 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.

- 8:00AM (13) *Transversely holomorphic foliations and CR structures.*
Howard Jacobowitz, Rutgers University (943-32-97)
- 9:00AM (14) *On the Projection of Runge Domains.*
Cezar Joita, SUNY at Buffalo (943-32-82)
- 10:00AM (15) *Lattice-invariant Riemann surfaces in the ball.*
Finnur Lárússon, University of Western Ontario (943-32-93)

Special Session on Integrable Systems, I

8:40 AM – 10:50 AM Room 104, Diefendorf Hall

- Organizers: **Michèle Audin**, Université Louis Pasteur et NCRS
Lisa Claire Jeffrey, University of Toronto
- 8:40AM (16) *A New Class of Homogeneous Manifolds with Liouville-Integrable Geodesic Flows.*
Leo Thomas Butler, Queen's University (943-58-15)
- 9:15AM (17) *Kaehler Structures On Four Dimensional Closed Hamiltonian S^1 Orbifolds With Isolated Fixed Points.* Preliminary report.
Janet C. Talvacchia, Swarthmore College (943-53-86)
- 9:50AM (18) *Invariants for Legendrian Tangles.* Preliminary report.
Lisa M. Traynor, Bryn Mawr College (943-58-55)
- 10:25AM (19) *Number Theory and Quantization of Toric Actions.* Preliminary report.
Ana M. Cannas da Silva, Instituto Superior Tecnico (943-51-113)

Special Session on Smooth Categories in Geometry and Mechanics, I

9:00 AM – 10:50 AM Room 5, Diefendorf Hall

- Organizer: **F. William Lawvere**, SUNY at Buffalo
- 9:00AM (20) *A Synthetic Approach to Characteristic Cohomology.*
James J. Faran, V., SUNY at Buffalo (943-18-72)
- 9:30AM (21) *Infinitesimal Calculus of Variation.*
Hirokazu Nishimura, University of Tsukuba, Japan (943-18-71)
- 10:00AM (22) *Lebesgue Toposes.*
Jonathon Funk, University of British Columbia (943-18-65)
- 10:30AM (23) *Strongly Separable Morphisms.*
George Janelidze*, Georgian Academy of Science, and **Walter Tholen**, York University, Ontario, Canada (943-18-73)

Special Session on Thin Films: Solid and Liquid, I

9:00 AM – 10:50 AM Room 148, Diefendorf Hall

- Organizers: **E. Bruce Pitman**, SUNY at Buffalo
Brian Spencer, State University of New York at Buffalo
- 9:00AM (24) *The Dynamics of a Spreading and Melting Drop on a Heated Substrate.*
Daniel M. Anderson*, **M. G. Forest**, **D. D. Glick** and **R. Superfine**, University of North Carolina (943-76-130)
- 9:40AM (25) *Undercompressive shocks in thin film flow.*
Andrea L. Bertozzi*, **Andreas Münch**, Duke University, and **Michael Shearer**, North Carolina State University (943-35-28)
- 10:20AM (26) *Long-wave instabilities in thin film equations – blow-up, saturation, and steady-states.*
Mary Pugh, University of Pennsylvania (943-76-83)

Special Session on Combinatorics and Graph Theory, I

9:00 AM – 10:50 AM Room 6, Diefendorf Hall

- Organizer: **Harris Kwong**, SUNY College at Fredonia
- 9:00AM (27) *Congruences of Stirling numbers and Bell numbers via Weyl algebra.*
Ofer Hadas, Wayne State University, Detroit (943-11-59)
- 9:30AM (28) *Tautologies of Boolean Variables and Combinatorial Identities.* Preliminary report.
Melkamu Zeleke, William Paterson University (943-05-144)
- 10:00AM (29) *Some families of algebraically defined graphs and their applications.*
Felix Lazebnik, University of Delaware (943-05-81)
- 10:30AM (30) *Covering a Bipartite Graph with Independent Quadrilaterals.* Preliminary report.
Xiangwen Li*, West Virginia University, **Bin Wei** and **Fan Yang**, Institute of Systems, Academia Sinica, China (943-05-35)

Special Session on Mathematical Physics, I

9:00 AM – 10:45 AM Room 7, Diefendorf Hall

- Organizer: **Jonathan Dimock**, SUNY at Buffalo
- 9:00AM (31) *Algebraic Structures on Generalized Gauge Symmetries.* Preliminary report.
Glenn Barnich, Universitat de Valencia, **Ron Fulp**, N.C. State University, **Tom Lada***, N.C. State University, and **Jim Stasheff**, UNC-Chapel Hill (943-17-12)
- 9:30AM (32) *Regularization of Yang-Mills Theory by Non-linear Wavelet Expansion.* Preliminary report.
Paul G. Federbush, University of Michigan (943-81-52)
- 10:00AM (33) *Geometry of Infinite Grassmannians and the Structure of the Proton.*
Sarada G. Rajeev, University of Rochester (943-81-80)

Special Session on Operads, Algebras, and Their Applications, I

9:00 AM – 10:50 AM Room 4, Diefendorf Hall

- Organizer: **Alexander A. Voronov**, Michigan State University
- 9:00AM (34) *Constructions of E_n Operads.* Preliminary report.
Zbigniew Fiedorowicz, Ohio State University (943-55-53)
- 9:40AM (35) *Cohomology of graded generalizations of Poisson algebras.* Preliminary report.
Gregg J. Zuckerman, Yale University (943-17-89)
- 10:20AM (36) *Fukaya's A_∞ category and a CHAC operad.* Preliminary report.
Jack Morava, The Johns Hopkins University (943-18-147)

Session on Contributed Papers

9:00 AM – 10:25 AM Room 205, Diefendorf Hall

- 9:00AM (37) *Constrained Leja Points and Numerical Solution of the Constrained Energy Problem.*
Dan Coroian and **Peter Dragnev***, Indiana-Purdue University (943-31-91)

- 9:15AM (38) *Invariant Vector Fields on Flows of Certain Closed 3-Manifolds and their Confoliations*. Preliminary report.
Richard H. Escobales Jr., Canisius College (943-53-63)
- 9:30AM (39) *An exact solution of $\pi(x)$ for any X* .
Robert J. Mack (943-11-19)
- 9:45AM (40) *A sifter-type characterization for the Banach-Mazur game*. Preliminary report.
Aaron R. Todd, Bernard Baruch College (943-54-112)
- 10:00AM (41) *The Friedman Projection to Facet Measure Three Obeys the Euler Formula*. Preliminary report.
C. S. Felicitas and **Freddie Friedman***, CFCTE, Inc. (943-53-20)
- 10:15AM (42) *Braid structures in 3-manifolds*. Preliminary report.
Sofia Lambropoulou, Universitaet Goettingen (943-57-169)

Invited Address

- 11:00 AM – 11:50 AM **Room 148, Diefendorf Hall**
 (43) *Symmetric Spectra*.
Jeffrey H. Smith, Purdue University

Invited Address

- 1:30 PM – 2:20 PM **Room 148, Diefendorf Hall**
 (44) *Integrable systems and spaces of curves*.
Michele Audin, Université Louis Pasteur (943-58-173)

Special Session on Smooth Categories in Geometry and Mechanics, II

- 2:30 PM – 5:20 PM **Room 5, Diefendorf Hall**
 Organizer: **F. William Lawvere**, SUNY at Buffalo
- 2:30PM (45) *Atoms and categories of differential equations in Synthetic Differential Geometry*. Preliminary report.
Gonzalo E Reyes*, Montreal University, and **Anders Kock**, Aarhus University (943-18-109)
- 3:00PM (46) *Transversal stability for infinitesimally represented germs*.
Felipe Gago, University of Santiago de Compostela, Spain (943-18-66)
- 3:30PM (47) *Infinitesimal Geometric Aspects of Riemannian Metrics*.
Anders Kock, Aarhus University, Denmark (943-18-68)
- 4:00PM Break.
- 4:30PM (48) *Infinitesimal Deformations in SDG*.
Rene Lavendhomme, University of Louvain, Belgium (943-18-70)
- 5:00PM (49) *Single universe for intensive and extensive quantities in a topos*. Preliminary report.
Marta C. Bunge, McGill University (943-18-76)

Special Session on Thin Films: Solid and Liquid, II

- 2:30 PM – 4:20 PM **Room 148, Diefendorf Hall**
 Organizers: **E. Bruce Pitman**, SUNY at Buffalo
Brian Spencer, State University of New York at Buffalo
- 2:30PM (50) *Morphological Stability of Rods in the Presence of Surface Energy and Elastic Stress*.
Dimitri J. Kirill, Northwestern University, **Harris Wong**, Louisiana State University, **Stephen H. Davis**, **Michael J. Miksis*** and **Peter W. Voorhees**, Northwestern University (943-73-40)

- 3:10PM (51) *A continuum model for the growth of thin solid films*. Preliminary report.
Tim P. Schulze* and **Weinan E**, New York University (943-73-99)
- 3:50PM Discussion.

Special Session on Mathematical Physics, II

- 2:30 PM – 4:50 PM **Room 7, Diefendorf Hall**
 Organizer: **Jonathan Dimock**, SUNY at Buffalo
- 2:30PM (52) *Quantum field theory and the renormalization group*. Preliminary report.
David C. Brydges*, University of Virginia, **Jon Dimock**, SUNY at Buffalo, and **Tom R. Hurd**, McMaster University (943-82-143)
- 3:30PM (53) *Potts model duality on the annulus*. Preliminary report.
Christopher K. King, Northeastern University (943-82-61)
- 4:00PM (54) *Probabilistic Considerations on Interacting Particle Systems*. Preliminary report.
Patricia Giurgescu, Pace University (943-60-49)
- 4:30PM (55) *Stochastic dynamics for classical spin models*. Preliminary report.
Tadeusz Balaban, Rutgers University (943-82-146)

Special Session on Knot and 3-Manifolds, II

- 2:30 PM – 5:20 PM **Room 2, Diefendorf Hall**
 Organizers: **Thang T. Q. Le**, State University of New York at Buffalo
William W. Menasco, SUNY at Buffalo
Morwen B. Thistlethwaite, University of Tennessee
- 2:30PM (56) *Improper group actions and duality*. Preliminary report.
John Meier*, Lafayette College, and **Kenneth S. Brown**, Cornell University (943-20-131)
- 3:00PM (57) *A contribution of $U(1)$ -reducible connections to the colored Jones polynomial and p -adic properties of quantum invariants*. Preliminary report.
Lev Rozansky, Yale University (943-57-122)
- 3:30PM (58) *n -string Tangles*.
John W. Emert*, Ball State University, and **Claus Ernst**, Western Kentucky University (943-57-16)
- 4:00PM (59) *q -homotopy skein module of 3-manifolds; properties and applications*.
Jozef H. Przytycki, GWU (943-57-148)
- 4:30PM (60) *Brunnian braids and links, n -triviality, and group commutators*.
Theodore B. Stanford, United States Naval Academy (943-57-129)

Special Session on Knot and 3-Manifolds, III

- 2:30 PM – 5:20 PM **Room 4, Diefendorf Hall**
 Organizers: **Thang T. Q. Le**, State University of New York at Buffalo
William W. Menasco, SUNY at Buffalo
Morwen B. Thistlethwaite, University of Tennessee
- 2:30PM (61) *Kauffman Bracket Skein Module at 4th Root of Unity*. Preliminary report.
Adam S. Sikora, UMCP and SUNY Buffalo (943-57-167)

- 3:00PM (62) *The subgroup separable property in the braid groups.*
Oliver T. Dasbach, Heinrich-Heine-Universität, and **Brian S. Mangum***, Barnard College, Columbia University (943-57-158)
- 3:30PM (63) *Group actions on order trees.*
Rachel Roberts, Washington University at St Louis, and **Melanie Stein***, Trinity College (943-57-87)
- 4:00PM (64) *Results on Thin Position.*
Curtis Feist, Marshall University (943-57-98)
- 4:30PM (65) *Extension of incompressible surfaces on the boundaries of 3-manifolds .*
Michael Freedman, UCSD, Microsoft, **Hugh N. Howards***, Wake Forest University, and **Wu Ying-Qing**, University of Iowa (943-57-134)
- 5:00PM (66) *Combinatorial Decomposition of Chinese Characters.* Preliminary report.
Michael E. McDaniel, Aquinas College (943-57-60)

Special Session on Representations of Lie Algebras, II

2:30 PM – 5:20 PM **Room 8, Diefendorf Hall**

- Organizer: **Duncan J. Melville**, Saint Lawrence University
- 2:30PM (67) *Representations of reduced enveloping algebras arising from the subregular nilpotent orbit.* Preliminary report.
James E. Humphreys, University of Massachusetts, Amherst (943-17-50)
- 3:00PM (68) *On idempotents in enveloping algebras.* Preliminary report.
George B. Seligman, Yale University (943-17-33)
- 3:30PM (69) *Schemes of Tori and the Structure of Tame Restricted Lie Algebras.*
Rolf Farnsteiner, University of Wisconsin (943-17-45)
- 4:00PM (70) *Nonrestricted representations of Cartan-type Lie algebras.*
Randall R. Holmes, Auburn University (943-17-101)
- 4:30PM (71) *Blocks of Finite Type in Reduced Enveloping Algebras for Classical Lie Algebras.*
Daniel K. Nakano, Utah State University, and **David Pollack***, Queen's University (943-17-114)
- 5:00PM (72) *Complexity for modules over classical Lie algebras and finite Chevalley groups.*
Zongzhu Lin, Kansas St. University, and **Daniel K. Nakano***, Utah St. University (943-17-36)

Special Session on Operads, Algebras, and Their Applications, II

2:30 PM – 4:20 PM **Room 308, Diefendorf Hall**

- Organizer: **Alexander A. Voronov**, Michigan State University
- 2:30PM (73) *Some problems in deformation theory and quantum groups.*
Murray Gerstenhaber, University of Pennsylvania (943-16-137)
- 3:10PM (74) *On Some Duality Theorems.*
Sorin Dascalescu, University of Bucharest, **Florin F. Nichita***, SUNY at Buffalo, Institute of Mathematics of the Romanian Academy, and **Samuel D. Schack**, SUNY at Buffalo (943-16-27)
- 3:50PM (75) *Integrable Hierarchies, Stable Maps, and Spin Curves.*
Tyler J. Jarvis, Brigham Young University, and **Takashi Kimura***, Boston University (943-14-159)

Special Session on Integrable Systems, II

2:30 PM – 5:15 PM **Room 104, Diefendorf Hall**

- Organizers: **Michèle Audin**, Université Louis Pasteur et NCRS
Lisa Claire Jeffrey, University of Toronto
- 2:30PM (76) *Stiefel-Whitney classes and eigenvalue inequalities.* Preliminary report.
Arkady Berenstein and **Reyer Sjamaar***, Cornell University (943-58-115)
- 3:05PM (77) *Vanishing theorems for the kernel of a Dirac operator.*
Maxim Braverman, Ohio State University (943-32-126)
- 3:40PM (78) *Moduli of bundles with weighted frames.*
Jacques Hurtubise*, McGill University, and **Lisa C. Jeffrey**, University of Toronto (943-14-75)
- 4:15PM (79) *Holomorphic bundles over complex surfaces.*
Boris Khesin*, University of Toronto, and **Alexei Rosly**, ITEP, Moscow (943-58-135)
- 4:50PM (80) *Automorphism group actions on moduli spaces.* Preliminary report.
William M. Goldman, University of Maryland (943-53-31)

Special Session on Combinatorics and Graph Theory, II

3:00 PM – 5:20 PM **Room 6, Diefendorf Hall**

- Organizer: **Harris Kwong**, SUNY College at Fredonia
- 3:00PM (81) *Extending colorings of locally planar graphs.*
Michael O. Albertson, Smith College, and **Joan P. Hutchinson***, Macalester College (943-05-57)
- 3:30PM (82) *Circulants and the Circular Chromatic Number.* Preliminary report.
Karen L. Collins, Wesleyan University (943-05-46)
- 4:00PM (83) *Graph Coloring and Noncommutative Symmetric Functions.* Preliminary report.
Bruce E. Sagan*, Michigan State University, and **David D. Gebhard**, Lenoir-Rhyne College (943-05-21)
- 4:30PM (84) *Group Coloring of a Graph.* Preliminary report.
Hong-Jian Lai, West Virginia University (943-05-96)
- 5:00PM (85) *Dynamic Vertex Coloring.* Preliminary report.
Bruce Montgomery, West Virginia University (943-05-90)

Special Session on Complex Geometry, II

3:00 PM – 4:40 PM **Room 103, Diefendorf Hall**

- Organizers: **Terrence Napier**, Lehigh University
Mohan Ramachandran, State University of New York at Buffalo
- 3:00PM (86) *Uniqueness of Grauert tubes.*
Richard K. Hind, University of Michigan (943-51-128)
- 4:00PM (87) *Singular Levi-flat real analytic hypersurfaces.*
Daniel M. Burns Jr.* and **Xianghong Gong**, Univ. of Michigan (943-32-165)

Invited Address

5:30 PM – 6:20 PM **Room 148, Diefendorf Hall**

- (88) *Atomistic, continuum and bulk models for epitaxial growth.* Preliminary report.
Russel E. Caflisch, UCLA (943-82-41)

UB Department of Mathematics Dinner Reception

7:00 PM – 9:00 PM

Location To Be Announced

Sunday, April 25**AMS Exhibit and Book Sale**

8:00 AM – NOON

Rotunda, Diefendorf Hall

Meeting Registration

8:00 AM – NOON

Room 114, Diefendorf Hall

Special Session on Knot and 3-Manifolds, IV

8:00 AM – 10:50 AM

Room 2, Diefendorf Hall

Organizers: **Thang T. Q. Le**, State University of New York at Buffalo**William W. Menasco**, SUNY at Buffalo**Morwen B. Thistlethwaite**, University of Tennessee8:00AM *Knots in non-Haken 3-Manifolds*. Preliminary report.
(89) **Marc Culler**, University of Illinois at Chicago (943-57-171)8:30AM *Yang-Mills measure in the Kauffman bracket skein module*. Preliminary report.
(90) **Doug Bullock**, Boise State University, **Charles Frohman**, University of Iowa, and **Joanna Kania-Bartoszyńska***, Boise State University (943-57-121)9:00AM *The A-polynomial from the Noncommutative Viewpoint*.
(91) **Charles D. Frohman***, The University of Iowa, **Razvan Gelca**, The University of Michigan, and **Walter LoFaro**, Boise State University (943-57-54)9:30AM *Contact Structures On 3-Manifolds That Fiber Over S^1* . Preliminary report.
(92) **Andrew P. Lewis**, UC Berkeley (943-57-139)10:00AM *Constructing tight contact 3-manifolds*.
(93) **John B. Etnyre**, Stanford, and **Robert W. Ghrist***, Georgia Institute of Technology (943-58-29)10:30AM *A dynamics proof that Alexander polynomials multiply under connected sums*.
(94) **Michael C. Sullivan**, Southern Illinois University (943-58-09)**Special Session on Representations of Lie Algebras, III**

8:00 AM – 10:50 AM

Room 8, Diefendorf Hall

Organizer: **Duncan J. Melville**, Saint Lawrence University8:00AM *A Homological Invariant of Weyl modules for GL_n* . Preliminary report.
(95) **Upendra B. Kulkarni**, University of Massachusetts (943-20-85)8:30AM *Gröbner-Shirshov Pair in Representation Theory*.
(96) **Seok-Jin Kang** and **Kyu-Hwan Lee***, Seoul National University, Korea (943-17-26)9:00AM *Combinatorics of Crystals for Demazure modules*.
(97) **Kailash C. Misra**, North Carolina State University (943-17-133)9:30AM *Symmetric functions and $U_q(\widehat{sl}_2)$* .
(98) **Naihuan Jing**, MSRI and N.C. State Univ. (943-17-132)10:00AM *Fusion Rules From Elementary Group Theory*. Preliminary report.
(99) **Alex J. Feingold**, Binghamton University (943-17-156)10:30AM *Realization of affine algebras*. Preliminary report.
(100) **Albert John Coleman**, Queen's University (943-17-58)**Special Session on Complex Geometry, III**

8:00 AM – 10:40 AM

Room 103, Diefendorf Hall

Organizers: **Terrence Napier**, Lehigh University**Mohan Ramachandran**, State University of New York at Buffalo8:00AM *On the fundamental group of an elliptic fibration*.
(101) **Stephen S. Y. Lu**, Pure Math. Dept., University of Waterloo. (943-32-44)9:00AM *Hermitian-Einstein Metrics for Vector Bundles on Complete Kahler Manifolds*.
(102) **Lei Ni**, Purdue University (943-58-104)10:00AM *Extended bisectors in complex projective space*. Preliminary report.
(103) **William M. Goldman**, University of Maryland (943-53-30)**Special Session on Combinatorics and Graph Theory, III**

8:30 AM – 10:50 AM

Room 6, Diefendorf Hall

Organizer: **Harris Kwong**, SUNY College at Fredonia8:30AM *Vertex reinforced random walks on arbitrary graphs*.
(104) **Stanislav Volkov**, University of Toronto (943-05-174)9:00AM *Condensation Method*.
(105) **Tewodros Amdeberhan**, DeVry Institute of Technology (943-05-166)9:30AM *Probabilistic Group Testing in the Presence of Errors and its Applications to DNA Library Screening*.
▶ (106) **Arkadii G. D'yachkov**, SUNY Geneseo/Moscow State Univ., **Anthony J. Macula***, SUNY Geneseo, and **Vyacheslav V. Rykov**, SUNY Geneseo/ Moscow State Univ. (943-05-10)10:00AM *d-Dimensional Perfect Matchings*. Preliminary report.
▶ (107) **William Goh**, Drexel University, **Pawel Hitczenko**, N.C. State University, **Ljubomir Perkovic**, **Eric J. Schmutz*** and **Li Sheng**, Drexel University (943-05-160)10:30AM *Cospectral Graphs with Arbitrary Centers*.
▶ (108) **Ian C. Walter Jr.**, D'Youville College (943-05-11)**Special Session on Integrable Systems, III**

8:40 AM – 10:50 AM

Room 104, Diefendorf Hall

Organizers: **Michèle Audin**, Université Louis Pasteur et NCRS**Lisa Claire Jeffrey**, University of Toronto8:40AM *Contact forms on Frobenius manifolds*. Preliminary report.
(109) **Michèle Audin**, Université Louis Pasteur et CNRS, and **Emma Previato***, Boston University (943-58-118)9:15AM *Localization in equivariant cohomology for invariant submanifolds*. Preliminary report.
(110) **Mikhail Kogan**, MIT (943-53-123)

- 9:50AM *Localization theorems for manifolds with boundary and geometric quantization.*
(111) **David S. Metzler**, Rice University (943-53-116)
- 10:25AM *Cohomology Ring of Weight Varieties.*
(112) **Rebecca F. Goldin**, Massachusetts Institute of Technology (943-51-155)

Special Session on Smooth Categories in Geometry and Mechanics, III

- 9:00 AM – 10:50 AM **Room 5, Diefendorf Hall**
Organizer: **F. William Lawvere**, SUNY at Buffalo
- 9:00AM *Arithmetic Categories.*
(113) **Peter Freyd**, University of Pennsylvania (943-18-69)
- 9:30AM *Vertex Algebras - An example of a relaxed multilinear category.*
(114) **Craig T. Snyder**, Cambridge University (943-18-67)
- 10:00AM *Conceptual Mathematics, Categories, Functors, and Tensors.*
(115) **Walter Noll**, Carnegie Mellon University (943-18-176)
- 10:30AM *Smoothness of Cubical Splines.*
(116) **F. William Lawvere**, SUNY at Buffalo (943-18-145)

Special Session on Mathematical Physics, III

- 9:00 AM – 10:45 AM **Room 7, Diefendorf Hall**
Organizer: **Jonathan Dimock**, SUNY at Buffalo
- 9:00AM *Heat kernel analysis on infinite dimensional complex groups.*
(117) **Maria Gordina**, McMaster University (943-46-136)
- 9:30AM *Boundary conformal field theory on the upper half plane.* Preliminary report.
(118) **Jürg Fröhlich**, ETHZ Zürich, **Olivier Grandjean***, Harvard University, **Andreas Recknagel**, MPI Leipzig, and **Volker Schomerus**, Hamburg University (943-81-111)
- 10:00AM *Supersymmetry with a Twist.*
(119) **Arthur M. Jaffe**, Harvard University (943-81-62)

Special Session on Operads, Algebras, and Their Applications, III

- 9:00 AM – 10:50 AM **Room 4, Diefendorf Hall**
Organizer: **Alexander A. Voronov**, Michigan State University
- 9:00AM *Homology of A_∞ and L_∞ -algebras.*
(120) **Masoud Khalkhali**, University of Western Ontario (943-18-142)
- 9:40AM *Formality conjectures for chains and characteristic classes.*
(121) **Boris L. Tsygan**, Penn State University (943-18-170)
- 10:20AM *A master identity for homotopy Gerstenhaber algebras.*
(122) **Fusun Akman**, Coastal Carolina University (943-17-100)

Invited Address

- 11:00 AM – 11:50 AM **Room 148, Diefendorf Hall**
(123) *Operad Theory and Some Applications.*
Alexander A. Voronov, Michigan State University (943-18-05)

Invited Address

- 1:30 PM – 2:20 PM **Room 148, Diefendorf Hall**
(124) *Harmonic Algebra.* Preliminary report.
Gregg J. Zuckerman, Yale University (943-17-175)

Special Session on Smooth Categories in Geometry and Mechanics, IV

- 2:30 PM – 4:00 PM **Room 5, Diefendorf Hall**
Organizer: **F. William Lawvere**, SUNY at Buffalo
2:30PM Round Table Discussion.

Special Session on Mathematical Physics, IV

- 2:30 PM – 4:50 PM **Room 7, Diefendorf Hall**
Organizer: **Jonathan Dimock**, SUNY at Buffalo
- 2:30PM *Quantization of Massive Vector Fields in Curved Spacetime.*
▶ (125) **Edward P. Furlani**, SUNY at Buffalo (943-81-17)
- 3:00PM *The Faddeev formula in the inverse scattering for Dirac operators.*
(126) **Ghias Hachem**, Institut Galilée, Université Paris 13, France. (943-47-23)
- 3:30PM *Dynamic Stability of Magnetic Vortices.*
(127) **Stephen J. Gustafson**, University of Toronto (943-35-105)
- 4:00PM *Properties of the Laplacian on a Sierpinski Gasket.*
▶ (128) **Alexander Teplyaev**, McMaster University (943-35-157)
- 4:30PM *On separability of the Toda lattice.* Preliminary report.
▶ (129) **Raymond G. McLenaghan** and **Roman G. Smirnov***, University of Waterloo (943-58-149)

Special Session on Knot and 3-Manifolds, V

- 2:30 PM – 5:20 PM **Room 2, Diefendorf Hall**
Organizers: **Thang T. Q. Le**, State University of New York at Buffalo
William W. Menasco, SUNY at Buffalo
Morwen B. Thistlethwaite, University of Tennessee
- 2:30PM *The Casson-Walker-Lescop Invariant and Link Invariants.*
(130) **Jeff Johannes**, University of Nevada, Las Vegas (943-57-18)
- 3:00PM *The Casson-Walker invariant for double covers of rational homology 3-spheres.* Preliminary report.
(131) **Cynthia L. Curtis**, The College of New Jersey (943-57-37)
- 3:30PM *Comparison among finite type 3-manifold invariants.*
(132) **Stavros Garoufalidis***, Harvard University, **Michael Polyak**, Tel Aviv University, and **Mikhail Goussarov**, POMI, St. Petersburg, Russia (943-57-88)
- 4:00PM *Finite-type invariants, Massey products and the Johnson homomorphism.* Preliminary report.
(133) **Jerome P. Levine***, Brandeis University, and **Stavros Garoufalidis**, Harvard University (943-57-103)
- 4:30PM *Norm duality and hyperbolic 3-manifolds.*
(134) Preliminary report.
Steven P. Boyer*, Université du Québec à Montréal, and **Xingru Zhang**, SUNY Buffalo (943-57-119)
- 5:00PM *On Simple Points Of Character Varieties Of 3-Manifolds.* Preliminary report.
(135) **Steven Boyer**, UQAM, and **Xingru Zhang***, SUNY at Buffalo (943-57-38)

Special Session on Representations of Lie Algebras, IV

- 2:30 PM – 5:50 PM **Room 8, Diefendorf Hall**
Organizer: **Duncan J. Melville**, Saint Lawrence University

- 2:30PM *Peterson's formula for generalized Kac-Moody superalgebras.*
(136) **Seok-Jin Kang***, **Jae-Hoon Kwon** and **Young-Tak Oh**, Seoul National University, Korea (943-17-138)
- 3:00PM *Irreducible representations for toroidal Lie algebras.*
(137) **Stephen Berman***, Univ. of Sask., and **Yuly Billig**, Univ. of New Brunswick (943-17-34)
- 3:30PM *Stratification of algebras.* Preliminary report.
(138) **Vlastimil Dlab**, Carleton University (943-16-140)
- 4:00PM *Affine braids, quantum groups and Jantzen filtrations.*
(139) **Rosa Orellana**, University of California, San Diego, and **Arun Ram***, Princeton University (943-16-110)
- 4:30PM *Representation theory of reductive normal algebraic monoids.*
(140) **Stephen R. Doty**, Loyola University Chicago (943-20-102)
- 5:00PM *Representations of Kac-Moody algebras and the sine-Gordon equation.*
▶ (141) **Yuly Billig**, University of New Brunswick (943-17-47)
- 5:30PM *A realization of the infinite wedge space representation of gl_∞ .* Preliminary report.
(142) **R. Michael Howe**, University of Wisconsin-Eau Claire (943-17-106)

Special Session on Operads, Algebras, and Their Applications, IV

2:30 PM – 4:20 PM Room 4, Diefendorf Hall

Organizer: **Alexander A. Voronov**, Michigan State University

- 2:30PM *A Tale of Two Quantizations.*
(143) **Jim Stasheff**, UNC-CH (943-81-95)
- 3:10PM *Semi-infinite forms and topological vertex operator algebras.*
(144) **Yi-Zhi Huang***, Rutgers University, and **Wenhua Zhao**, University of Chicago (943-17-64)
- 3:50PM *The Operads of locally trivialized holomorphic G-bundles over Riemann sphere.*
(145) **Wenhua Zhao**, University of Chicago (943-81-107)

Special Session on Integrable Systems, IV

2:30 PM – 4:40 PM Room 104, Diefendorf Hall

Organizers: **Michèle Audin**, Université Louis Pasteur et NCRS
Lisa Claire Jeffrey, University of Toronto

- 2:30PM *Convex polytopes and moment maps in the geometry of an integrable system.*
(146) **Barbara A. Shipman**, The University of Texas at Arlington (943-70-51)
- 3:05PM *Extended integrability and bi-Hamiltonian systems.*
(147) **Oleg I. Bogoyavlenskij**, Queen's University (943-58-151)
- 3:40PM *Representations of Fundamental Groups of Riemann Surfaces.*
(148) **Mark Hoyle**, Michigan State University (943-58-152)
- 4:15PM *Moduli spaces of flat connections on Riemann surfaces.* Preliminary report.
(149) **Lisa C. Jeffrey**, University of Toronto (943-58-141)

Special Session on Combinatorics and Graph Theory, IV

3:00 PM – 4:50 PM Room 6, Diefendorf Hall

Organizer: **Harris Kwong**, SUNY College at Fredonia

- 3:00PM *Aspects of Representability of Bias Matroids of Signed Graphs.*
(150) **Steven R. Pagano**, University of Kentucky (943-05-74)
- 3:30PM *Symplectic matroids the easy way.*
(151) **Timothy Y. Chow**, Tellabs Research Center (943-05-25)
- 4:00PM *Superimposed Codes based on Reed-Solomon Codes.*
(152) **Arkadii G. D'yachkov**, SUNY Geneseo/Moscow State Univ., **Anthony J. Macula***, SUNY Geneseo, and **Vyacheslav V. Rykov**, SUNY Geneseo/Moscow State Univ. (943-05-14)
- 4:30PM *New Applications and Results of Superimposed Code Theory.*
(153) **Arkadii G. D'yachkov***, SUNY Geneseo/Moscow State Univ., **Anthony J. Macula**, SUNY Geneseo, and **Vyacheslav V. Rykov**, SUNY Geneseo/Moscow State Univ. (943-05-13)

Special Session on Complex Geometry, IV

3:00 PM – 3:40 PM Room 103, Diefendorf Hall

Organizers: **Terrence Napier**, Lehigh University
Mohan Ramachandran, State University of New York at Buffalo

- 3:00PM *A Generalized Boundary Schwarz's Lemma.*
▶ (154) Preliminary report.
Dov N. Chelst, Drew University (943-30-161)

Lesley M. Sibner
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