
Program of the Sessions

Portland, Oregon, June 20–22, 2002

Thursday, June 20

Meeting Registration

8:00 AM – 4:00 PM Atrium, Third Floor, Neuberger Hall

MAA Minicourse

8:30 AM – 10:50 AM Room 465, Neuberger Hall

Using Geometer's Sketchpad (version 4) in undergraduate mathematics courses.

Organizer: **Keith Leatham**, Portland State University

MAA Minicourse

8:30 AM – 10:50 AM Room 343, Neuberger Hall

Senior capstones: Meaningful closure to the undergraduate experience.

Organizers: **Dusty E. Sabo**, Southern Oregon University
Kemle R. Yates, Southern Oregon University

AMS Special Session on Matroid Theory, I

9:00 AM – 10:50 AM Room 387, Neuberger Hall

Organizers: **Jennifer M. McNulty**, University of Montana
Nancy Ann Neudauer, Pacific University

9:00AM *Cocircuit Covers of Bicircular Matroids.*
(1) **Jenny McNulty***, The University of Montana, and
Nancy Neudauer, Pacific University (978-05-126)

9:30AM *Circuits intersecting Cocircuits in Graphs and Matroids.*
(2) **Sean W Mcguinness**, University of Montana/
University of Umeå (978-05-58)

10:00AM *On Largest Circuits in Matroids.* Preliminary report.
▶ (3) **Nolan B McMurray*** and **Talmage J Reid**, The University of Mississippi (978-05-39)

10:30AM *On edges meeting vertices of degree k in a minimally k -connected graph.*
▶ (4) **Talmage J Reid*** and **Haidong Wu**, The University of Mississippi (978-05-40)

AMS Invited Address

11:00 AM – 11:50 AM Room 338, Smith Memorial Center

(5) *New solutions for the N -body problem.*
Richard W. Montgomery, University of California Santa Cruz (978-70-03)

Exhibits and Book Sales

NOON – 4:00 PM Room 307, Neuberger Hall

AMS Invited Address

1:30 PM – 2:20 PM Room 338, Smith Memorial Center

(6) *The Navier–Stokes and Other Related Equations.*
Edriss S. Titi, University of California Irvine (978-35-04)

AMS Special Session on Qualitative Properties and Applications of Functional Equations, I

2:30 PM – 4:50 PM Room 388, Neuberger Hall

Organizer: **Theodore A. Burton**, Southern Illinois University

2:30PM *An Exponential Function on a Time Scale.*
▶ (7) **Allan C Peterson**, University of Nebraska-Lincoln (978-34-08)

3:00PM *Qualitative Behavior of Solutions of a Certain Hybrid System.* Preliminary report.
(8) **George Seifert**, Iowa State University (978-34-36)

The time limit for each AMS contributed paper in the sessions is ten minutes. The time limit for each MAA contributed paper varies. 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 23, 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. MAA abstracts are listed toward the back of the issue under the 00 classification sorted by session name.

- 3:30PM *Filippov solutions, dry friction and hysteresis.*
(9) **Bogdana Georgieva**, Pacific University, and **Ronald Guenther***, Oregon State University (978-34-67)
- 4:00PM *Asymptotic behavior of solutions of functional differential equations by fixed point theorems.*
(10) **T. A. Burton**, Northwest Research Institute, and **Tetsuo Furumochi***, Shimane University (978-34-15)
- 4:30PM Questions/Conjectures.

AMS Special Session on Mathematical Biology, I

- 2:30 PM – 4:50 PM **Room 373, Neuberger Hall**
Organizers: **Richard S. Gomulkiewicz**, Washington State University
Sebastian Schreiber, Western Washington University
- 2:30PM *Models for Marine Reserves.* Preliminary report.
▶ (11) **Alan Hastings**, University of California, Davis (978-92-88)
- 3:00PM *Dispersal, Competition and Spatio-temporal Heterogeneity.*
(12) **Konstantin Mischaikow**, Georgia Institute of Technology (978-92-59)
- 3:30PM *Edg-linked dynamics and the scale-dependence of competitive dominance.*
▶ (13) **R S Cantrell**, **Chris Cosner***, University of Miami, and **W Fagan**, University of Maryland (978-92-32)
- 4:00PM *Oscillation and synchronization in parallel neural circuits.* Preliminary report.
▶ (14) **R. Edwards**, University of Victoria (978-92-107)
- 4:30PM Discussion.

AMS Special Session on Low Dimensional Homotopy and Combinatorial Group Theory, I

- 2:30 PM – 4:50 PM **Room 364, Neuberger Hall**
Organizers: **F. Rudolf Beyl**, Portland State University
Paul Latiolais, Portland State University
William A. Bogley, Oregon State University
Micheal N. Dyer, University of Oregon
- 2:30PM *A Generalization of the Bias Invariant.*
(15) **Katherine S Byler**, University of Oregon (978-55-113)
- 3:00PM *Exotic homotopy types of algebraic 2-complexes.* Preliminary report.
(16) **F. Rudolf Beyl** and **Nancy Waller***, Portland State University (978-57-97)
- 3:30PM *Embedded 2-polyhedra with Regular Neighborhoods which have Sphere Boundaries.* Preliminary report.
(17) **Marcia Lynne Burdon**, Portland State University (978-57-120)
- 4:00PM *Some interesting new results concerning the fundamental groups of one-dimensional spaces.*
(18) **Gregory R Conner***, **Erin Summers** and **Kristin Spencer**, BYU (978-57-119)
- 4:30PM *Multiplicative Invariants of Special 2-Complexes.*
(19) **John Rosson**, University of Minnesota, Morris Campus (978-57-128)

AMS Special Session on Association Schemes and Distance-Regular Graphs, I

- 2:30 PM – 5:00 PM **Room 341, Neuberger Hall**
Organizers: **John S. Caughman**, Portland State University
Paul M. Terwilliger, University of Wisconsin
- 2:30PM *Two linear transformations each tridiagonal with respect to an eigenbasis for the other.* Preliminary report.
▶ (20) **Paul M. Terwilliger**, University of Wisconsin-Madison (978-05-73)
- 3:25PM *A p-adic generalization of the Johnson Scheme.*
(21) **Gregory M Hill**, University of Portland (978-05-65)
- 4:20PM *Jones Pairs and Association Schemes.*
(22) **Ada Chan**, University of Waterloo (978-05-61)

MAA Minicourse

- 2:30 PM – 5:00 PM **Room 350, Neuberger Hall**
What to teach and how not to teach it.
Organizer: **Edward B. Burger**, Williams College

MAA Minicourse

- 2:30 PM – 5:00 PM **Room 343, Neuberger Hall**
Visualization in Mathematics: Using proofs without words in your classrooms.
Organizers: **Roger B. Nelsen**, Lewis & Clark College
Jeanette R. Palmiter, Portland State University

Reception

- 5:30 PM – 7:00 PM **Foyer, Simon Benson House**

Friday, June 21

Meeting Registration

- 8:00 AM – 4:00 PM **Atrium, Third Floor, Neuberger Hall**

Exhibits and Book Sales

- 8:00 AM – 4:00 PM **Room 307, Neuberger Hall**

AMS Special Session on Algebraic Geometry and Combinatorics, I

- 8:20 AM – 10:50 AM **Room 385, Neuberger Hall**
Organizers: **Eric Babson**, University of Washington
Rekha Thomas, University of Washington
Sergey Yuzvinsky, University of Oregon
- 8:20AM *Vector configurations and toric varieties.* Preliminary report.
(23) **Gregory G Smith**, Barnard College (978-14-117)
- 9:00AM *Combinatorics and Quotients of Toric Varieties.*
(24) **Yi Hu**, University of Arizona (978-05-106)

Program of the Sessions – Portland, OR, Friday, June 21 (cont'd.)

- 9:40AM *Cohomology of wonderful compactifications and intersection theory on toric varieties.* Preliminary report.
(25) **Eva-Maria E. Feichtner***, ETH Zurich, and **Sergey Yuzvinsky**, University of Oregon (978-51-100)
- 10:20AM *A simple formula for the Todd class of a toric variety (that sometimes works).* Preliminary Report.
(26) Preliminary report.
Graham Denham and **Hugh Thomas***, University of Western Ontario (978-14-53)

AMS Special Session on Qualitative Properties and Applications of Functional Equations, II

8:30 AM – 10:50 AM Room 388, Neuberger Hall

Organizer: **Theodore A. Burton**, Southern Illinois University

- 8:30AM *Absolute Stability for Neutral Systems.*
(27) **C. Corduneanu**, Univ. of Texas, Arlington (978-34-16)
- 9:00AM *Asymptotic behavior in some classes of functional differential equations.*
(28) **Mehran Mahdavi**, Bowie State University (978-45-69)
- 9:30AM *A Quenching Problem for a Nonlinear Volterra Integral Equation.*
(29) **Colleen M. Kirk***, California Polytechnic State University, San Luis Obispo, and **Catherine A. Roberts**, College of the Holy Cross (978-45-47)
- 10:00AM *The analysis of some characteristic equations arising in population and epidemic models.*
(30) **Fred Brauer**, University of British Columbia (978-92-50)
- 10:30AM Questions/Conjectures.

AMS Special Session on Mathematical Biology, II

8:30 AM – 10:50 AM Room 373, Neuberger Hall

Organizers: **Richard S. Gomulkiewicz**, Washington State University
Sebastian Schreiber, Western Washington University

- 8:30AM *Nonequilibrium Thermodynamics of Living Biochemical Processes - Motor Proteins, GTPase Signaling, and Large-Scale Biochemical Networks.*
▶ (31) **Hong Qian**, University of Washington (978-92-27)
- 9:00AM *Ratchets, Power Strokes, and Molecular Motors.*
(32) **Hongyun Wang**, University of California, Santa Cruz (978-35-99)
- 9:30AM *An integrative model of internal axoneme mechanics and external fluid dynamics in sperm motility.* Preliminary report.
▶ (33) **Robert Dillon***, Washington State University, **Lisa Fauci**, Tulane University, and **Charlotte Omoto**, Washington State University (978-92-48)
- 10:00AM *Determining the mobility of actin proteins in the cell nucleus with a compartmental model.*
▶ (34) Preliminary report.
Gerda de Vries, University of Alberta (978-92-105)
- 10:30AM Discussion.

AMS Special Session on Quantum Topology, I

8:30 AM – 10:45 AM Room 381, Neuberger Hall

Organizers: **Douglas G. Bullock**, Boise State University
Joanna M. Kania-Bartoszyńska, Boise State University

- Uwe Kaiser**, Boise State University
- 8:30AM *Generalized Casson Invariants and Gauge Theory.*
(35) Preliminary report.
Christopher M. Herald, University of Nevada, Reno (978-57-93)
- 9:30AM *Cyclotomic Integer Expansion of the Fibonacci TQFT and Applications.* Preliminary report.
(36) **Thomas Kerler**, The Ohio State University (978-57-74)
- 10:00AM *Quantum Invariants away from roots of unity.*
(37) **Charles D Frohman***, University of Iowa, and **Joanna M Kania-Bartoszyńska**, Boise State University (978-57-49)

MAA Session on Innovations in Teaching Undergraduates

8:30 AM – 10:50 AM Room 364, Neuberger Hall

Organizer: **Monte Boisen**, University of Idaho

MAA Session on Undergraduate Research: Programs That Work

8:30 AM – 10:50 AM Room 343, Neuberger Hall

Organizer: **Daniel Kim**, Southern Oregon University

MAA Special Presentation

10:00 AM – 10:50 AM Room 350, Neuberger Hall

Mathematically inspired, computer-generated poster art.

Presenter: **Jeffrey Ely**, Lewis & Clark College

MAA Invited Address

11:00 AM – 11:50 AM Room 338, Smith Memorial Center

- (38) *The MAA's role in the future of undergraduate mathematics.*
Tina H. Straley, Mathematical Association of America (978-00-10)

AMS-MAA Invited Address

1:30 PM – 2:20 PM Room 338, Smith Memorial Center

- (39) *Modular curves and their twisted analogues.*
Kenneth A. Ribet, University of California Berkeley (978-11-02)

AMS Special Session on Qualitative Properties and Applications of Functional Equations, III

2:30 PM – 4:50 PM Room 388, Neuberger Hall

Organizer: **Theodore A. Burton**, Southern Illinois University

- 2:30PM *Local Boundedness in Functional Differential Equations.*
(40) **Junji Kato**, Miyagi University (978-34-26)
- 3:00PM *Formulas of Liapunov Functions for Systems of Linear Partial Differential Equations.* Preliminary report.
(41) **Bo Zhang**, Fayetteville State University (978-35-51)
- 3:30PM *Jensen's Inequality and Liapunov's Direct Method.*
(42) **Leigh C Becker***, Christian Brothers University, and **Theodore A Burton**, Southern Illinois University (978-34-31)

- 4:00PM *Regularity of weak solutions to Maxwell's equations and applications to microwave heating.* (43) **Hong-Ming Yin**, Washington State University (978-35-24)
- 4:30PM Questions/Conjectures.

AMS Special Session on Algebraic Geometry and Combinatorics, II

2:30 PM – 5:40 PM Room 385, Neuberger Hall

Organizers: **Eric Babson**, University of Washington
Rekha Thomas, University of Washington
Sergey Yuzvinsky, University of Oregon

- 2:30PM *On orbifold cohomology.* Preliminary report. (44) **Arkady Vaintrob**, University of Oregon (978-14-91)
- 3:10PM *Stable reductive varieties.* (45) **Valery Alexeev**, University of Georgia (978-14-85)
- 3:50PM *Wonderful blowups associated to group actions.* (46) **Lev A. Borisov**, Columbia University, and **Paul E. Gunnells***, University of Massachusetts (978-14-30)
- 4:30PM *Affine approach to quantum Schubert calculus.* (47) **Alexander Postnikov**, M.I.T. (978-05-78)
- 5:10PM $X^2 = 0$ and upper triangular matrices. Preliminary report. (48) **Brian David Rothbach**, U.C. Berkeley (978-05-115)

AMS Special Session on The Quintic Equation: Algebra and Geometry, I

2:30 PM – 5:40 PM Room 343, Neuberger Hall

Organizers: **Jerry Shurman**, Reed College
Scott Crass, California State University, Long Beach

- 2:30PM *Questions related to quintics.* (49) **David S Dummit**, University of Vermont (978-12-37)
- 3:20PM *Generic Polynomials with Few Parameters.* Preliminary report. (50) **Joe P Buhler**, Reed College (978-11-92)
- 4:10PM *Folding Viète's Postulates.* Preliminary report. (51) **Roger C. Alperin**, San Jose State University (978-12-80)
- 5:00PM *The Kiepert Algorithm for Solution of the General Quintic Equation: An Exercise in "Mathematical Archaeology".* (52) **R. Bruce King**, University of Georgia (978-12-21)

AMS Special Session on Mathematical Biology, III

2:30 PM – 4:50 PM Room 373, Neuberger Hall

Organizers: **Richard S. Gomulkiewicz**, Washington State University
Sebastian Schreiber, Western Washington University

- 2:30PM *Virus Dynamics: a global analysis.* (53) **Hal L Smith*** and **Patrick Deleenheer**, Arizona State University (978-92-34)
- 3:00PM *Disease induced oscillations between two competing species.* (54) **P. van den Driessche**, University of Victoria, and **M.L. Zeeman***, University of Texas at San Antonio (978-92-82)
- 3:30PM *Likelihood, Simulation and Evaluation of a Class on Non-Neutral Models with Selection.* (55) **Paul Joyce**, University of Utah (978-62-46)

- 4:00PM *Stochastic Demography and Coalescent Theory.* Preliminary report. (56) **Ingemar Kaj**, Uppsala University, **Stephen Krone***, University of Idaho, **Martin Lascoux**, Uppsala University, and **Magnus Nordborg**, University of Southern California (978-60-81)
- 4:30PM Discussion.

AMS Special Session on Matroid Theory, II

2:30 PM – 5:20 PM Room 387, Neuberger Hall

Organizers: **Jennifer M. McNulty**, University of Montana
Nancy Ann Neudauer, Pacific University

- 2:30PM *A Determinantal Identity for Oriented Matroids.* (57) **Thomas H. Brylawski**, University of North Carolina at Chapel Hill (978-05-108)
- 3:00PM *Max-Flow Min-Cut Duality for a Paint Shop Problem.* Preliminary report. (58) **Winfried Hochstaettler***, BT University, Cottbus, **Thomas Epping**, BT University Cottbus, and **Marco Luebbcke**, TU Braunschweig (978-90-75)
- 3:30PM *Various Chromatic Numbers of a Matroid.* Preliminary report. (59) **Luis A Goddyn***, Simon Fraser University, and **Laura Chavez-Lomeli**, Simon Fraser University (978-05-121)
- 4:00PM *Broken circuit and independence complexes of matroids.* (60) **Ed Swartz**, Cornell University (978-05-56)
- 4:30PM *Perfect Matroids.* (61) **Allan D. Mills**, Tennessee Tech. University (978-05-54)
- 5:00PM *Greedoid Invariants.* Preliminary report. (62) **Chris A Clouse**, University of Montana (978-05-95)

AMS Special Session on Quantum Topology, II

2:30 PM – 5:00 PM Room 381, Neuberger Hall

Organizers: **Douglas G. Bullock**, Boise State University
Joanna M. Kania-Bartoszyńska, Boise State University
Uwe Kaiser, Boise State University

- 2:30PM *Symplectic Lie algebras, operads and graphs.* (63) **James R Conant*** and **Karen Vogtmann**, Cornell University (978-17-35)
- 3:30PM *Rational moves on links measured by Burnside type groups.* Preliminary report. (64) **Mieczysław K. Dabkowski**, GWU, and **Jozef H. Przytycki***, George Washington University (978-57-66)
- 4:00PM *Burnside group of a link as an obstructions to the Montesinos-Nakanishi 3-move conjecture.* Preliminary report. (65) **Mieczysław K. Dabkowski*** and **Jozef H. Przytycki**, George Washington University (978-57-23)
- 4:30PM *Twist sequences and finite quotients of knot groups.* (66) **Ted Stanford**, New Mexico State University (978-57-125)

AMS Special Session on Association Schemes and Distance-Regular Graphs, II

2:30 PM – 5:00 PM Room 341, Neuberger Hall

Organizers: **John S. Caughman**, Portland State University
Paul M. Terwilliger, University of Wisconsin

- 2:30PM *On the Covering Radius of Simplex Codes.* (67)
Bharti Bhandari, I. I. T. Kanpur (978-05-109)
- 3:25PM *The Last Subconstituent of a Bipartite Q-polynomial Distance-regular Graph.* Preliminary report. (68)
John Caughman, Portland State University (978-05-110)
- 4:20PM *Products of association schemes and their representations.* Preliminary report. (69)
Sejeong Bang, POSTECH, Korea, **Mitsugu Hirasaka**, Busan National University, Korea, and **Sung-Yell Song***, Iowa State University (978-05-64)

MAA Session on Mathematics Education Research

2:30 PM – 5:00 PM Room 364, Neuberger Hall

Organizers: **Barbara E. Edwards**, Oregon State University
Sam Hall, Willamette University

AMS Session for Contributed Papers

3:00 PM – 4:10 PM Room 350, Neuberger Hall

- 3:00PM *An Extended Gap Theorem.* Preliminary report. (70)
Dennis H. Nemzer, California State University, Stanislaus (978-42-07)
- 3:15PM *On the Covering Radius of Simplex Codes.* (71)
M. C. Bhandari*, Indian Institute of Technology Kanpur, India, and **C Durairajan**, Govt. Arts College, Musri, T.Nadu, India. (978-94-14)
- 3:30PM *A Picard's type theorem for one operator of generalised integrodifferentiation.* (72)
Sergey N Kabanov, Saratov State University, Russia (978-45-13)
- 3:45PM *Virtual Knots and Stable Handle Equivalence (Preliminary Report).* Preliminary report. (73)
Heather A. Dye, University of Illinois at Chicago (978-55-22)
- 4:00PM *Cortical Orientation Response Fields Are Canonical Coordinates for Constancy Lie Transformation Groups.* (74)
William C Hoffman, Institute for Topological Psychology (978-92-28)

MAA Banquet and Invited Address

7:00 PM – 10:00 PM Second Floor, Great China Seafood Restaurant

- (75) *Innovative Experiments...and how I survived them.*
Edward B. Burger, Williams College (978-00-09)

Saturday, June 22

Exhibits and Book Sales

8:00 AM – 4:00 PM Room 307, Neuberger Hall

AMS Special Session on Algebraic Geometry and Combinatorics, III

8:20 AM – 10:50 AM Room 385, Neuberger Hall

Organizers: **Eric Babson**, University of Washington
Rekha Thomas, University of Washington
Sergey Yuzvinsky, University of Oregon

- 8:20AM *Chen ranks of arrangements.* Preliminary report. (76)
Alexander I Suciu, Northeastern University (978-20-112)
- 9:00AM *Linearity of resonance components in characteristic p.* (77)
Michael J. Falk, Northern Arizona University (978-14-94)
- 9:40AM *A Bézout-type formula for bivariate hypergeometric systems.* Preliminary report. (78)
Alicia Dickenstein, Universidad de Buenos Aires, **Laura Felicia Matusevich***, UC Berkeley, and **Timur Sadykov**, Stockholm University (978-14-57)
- 10:20AM *A short simplicial h-vector and the Upper Bound Theorem.* (79)
Patricia L Hersh, University of Michigan, Ann Arbor, and **Isabella Novik***, University of Washington, Seattle (978-05-43)

AMS Special Session on Qualitative Properties and Applications of Functional Equations, IV

8:30 AM – 10:50 AM Room 388, Neuberger Hall

Organizer: **Theodore A. Burton**, Southern Illinois University

- 8:30AM *Dynamics of Differential Equations on Invariant Manifolds.* (80)
James S Muldowney*, University Of Alberta, and **Michael Y Li**, University of Alberta (978-34-33)
- 9:00AM *Some principles in dynamical systems.* Preliminary report. (81)
John R Haddock, University of Memphis (978-34-70)
- 9:30AM *Stability In Linear Volterra Integrodifferential Equations With Nonlinear Perturbation.* Preliminary report. (82)
Youssef N Raffoul* and **Muhammad N Islam**, University of Dayton (978-45-12)
- 10:00AM *Stable Periodic Solutions in Functional Equations.* Preliminary report. (83)
Roger H. Hering, University of Missouri-Rolla (978-34-79)
- 10:30AM *Stability by Fixed Point Theory or Liapunov Theory: A Comparison.* (84)
Theodore A Burton, Southern Illinois University (978-34-42)

AMS Special Session on Matroid Theory, III

8:30 AM – 10:50 AM Room 387, Neuberger Hall

Organizers: **Jennifer M. McNulty**, University of Montana
Nancy Ann Neudauer, Pacific University

- 8:30AM *An operation for matroids.* Preliminary report. (85)
Scott Jones, The University of Montana (978-05-60)
- 9:00AM *Modularly contractible GF(q)-representable matroids.* Preliminary report. (86)
David L Neel, Truman State University (978-05-84)

- 9:30AM *Semiunique representation of some graph-like matroids.*
(87) **Thomas Zaslavsky**, SUNY at Binghamton (978-05-29)
- 10:00AM *Survey and catalog of finite linear spaces viewed as matroids.*
(88) **Sandra R Kingan**, Penn State Harrisburg (978-05-68)
- 10:30AM *Pseudo-triangulations and Rigidity.* Preliminary report.
(89) **Brigitte Servatius**, Worcester Polytechnic Institute (978-05-101)

AMS Special Session on Flat Structures, Moduli Spaces, and Minimal Surfaces, I

8:30 AM – 10:20 AM Room 373, Neuberger Hall

Organizers: **Matthias Weber**, Indiana University
Michael Wolf, Rice University

- 8:30AM *Helicoidal Minimal Surfaces.*
▶ (90) **Matthias Weber**, Indiana University, Bloomington (978-51-111)
- 9:00AM *Harmonic univalent mappings and minimal graphs in R^3 .*
(91) **Michael J Dorff**, Brigham Young University (978-49-44)
- 9:30AM *Area-minimizing minimal graphs over nonconvex domains.*
(92) **Denise M Halverson***, **Michael Dorff** and **Gary Lawlor**, Brigham Young University (978-30-17)
- 10:00AM *Solutions to the H-Surface Equation.*
▶ (93) **Henry C Wente**, University Of Toledo (978-35-38)

AMS Special Session on Quantum Topology, III

8:30 AM – 10:50 AM Room 381, Neuberger Hall

Organizers: **Douglas G. Bullock**, Boise State University
Joanna M. Kania-Bartoszynska, Boise State University
Uwe Kaiser, Boise State University

- 8:30AM *On the potential functions for the hyperbolic structures of a knot complement.*
(94) **Yoshiyuki Yokota**, Tokyo Metropolitan University (978-57-55)
- 9:30AM *TQFT arising from operator algebras.*
(95) **Marta Asaeda**, Univ of Maryland (978-81-96)
- 10:00AM *Property P for some knots.* Preliminary report.
(96) **Oliver T Dasbach***, LSU, and **Tao Li**, Oklahoma State University (978-57-90)
- 10:30AM *A curious curve.* Preliminary report.
▶ (97) **Steven A. Bleiler**, Portland State University (978-57-62)

AMS Special Session on Low Dimensional Homotopy and Combinatorial Group Theory, II

8:30 AM – 10:50 AM Room 350, Neuberger Hall

Organizers: **F. Rudolf Beyl**, Portland State University
Paul Latiolais, Portland State University
William A. Bogley, Oregon State University
Micheal N. Dyer, University of Oregon

- 9:00AM *A Consistency Test for Asphericity.*
(98) **Travis R Kelm**, University of Oregon (978-55-114)

- 9:30AM *Finiteness properties and the topology of monoid presentations.* Preliminary report.
(99) **Susan Hermiller***, University of Nebraska, and **John Meier**, Lafayette College (978-20-63)
- 10:00AM *Finitely presented subgroups of groups with higher finiteness properties.* Preliminary report.
(100) **W. A. Bogley** and **Jens Harlander***, Oregon State University (978-20-129)
- 10:30AM Problem/Discussion.

MAA Session on the Use of Technology in Community College Mathematics Courses

8:30 AM – 10:50 AM Room 343, Neuberger Hall

Organizer: **Peter Haberman**, Portland Community College

MAA Session by Junior Faculty on their Research

8:30 AM – 10:50 AM Room 341, Neuberger Hall

Organizer: **Jennifer Ann Firkins**, Linfield College

PNW-MAA Teaching Award Winner

10:00 AM – 10:50 AM Room 364, Neuberger Hall

Presenter: **Andrew Chang-Fung Liu**, University of Alberta

AMS Invited Address

11:00 AM – 11:50 AM Room 338, Smith Memorial Center

- (101) *Techmuller theory and minimal surfaces in space.*
Michael Wolf, Rice University (978-53-05)

MAA Invited Address

1:30 PM – 2:20 PM Room 338, Smith Memorial Center

- (102) *Improving pc graphics.*
Jim H. Valerio, Intel Desktop Architecture Labs (978-00-11)

AMS Special Session on Algebraic Geometry and Combinatorics, IV

2:30 PM – 5:40 PM Room 385, Neuberger Hall

Organizers: **Eric Babson**, University of Washington
Rekha Thomas, University of Washington
Sergey Yuzvinsky, University of Oregon

- 2:30PM *Discrete models for algebraic invariants of spaces of polynomials.*
▶ (103) **Dmitry N Kozlov**, Bern University/KTH Stockholm (978-57-71)
- 3:10PM *Gromov-Witten invariants on Grassmannians.*
(104) **Anders S. Buch***, M.I.T., **Andrew Kresch**, University of Pennsylvania, and **Harry Tamvakis**, Brandeis University (978-14-124)
- 3:50PM *Period Integrals and Feynman diagrams.*
(105) **Prakash Belkale**, University of Utah, and **Patrick G Brosnan***, University of California, Los Angeles (978-14-86)
- 4:30PM *Eliminating Two Variables from Three Sparse Unmixed Polynomial Equations.*
▶ (106) **Amit Khetan**, University of California Berkeley (978-14-116)

- 5:10PM *Schubert calculus on Grassmannians, via puzzles: ordinary, equivariant, K-theory, and quantum.*
(107) **Allen Knutson***, UC Berkeley, and **Terence Tao**, UCLA (978-14-127)

AMS Special Session on The Quintic Equation: Algebra and Geometry, II

2:30 PM – 5:40 PM Room 343, Neuberger Hall

Organizers: **Jerry Shurman**, Reed College
Scott Crass, California State University, Long Beach

- 2:30PM *Solving the quintic by iteration in three dimensions.*
▶ (108) **Scott Crass**, CSU, Long Beach (978-37-104)
- 3:20PM *Klein's Galois Theory of the Icosahedral Group via Elliptic Curves.*
(109) **Edray Herber Goins**, Caltech/Harvard (978-11-102)
- 4:10PM *Icosahedral Galois Representations and Modular Forms.* Preliminary report.
(110) **Mark Dickinson**, University of Michigan (978-11-87)
- 5:00PM *A minimalist approach to the insolvability of the quintic.* Preliminary report.
▶ (111) **David McKay**, Cal State Long Beach (978-12-122)

AMS Special Session on Flat Structures, Moduli Spaces, and Minimal Surfaces, II

2:30 PM – 4:50 PM Room 373, Neuberger Hall

Organizers: **Matthias Weber**, Indiana University
Michael Wolf, Rice University

- 2:30PM *An Hurwitz function on moduli space.*
(112) **Sa'ar D Hersonsky***, Ben-Gurion University, Israel, and **Frederic Paulin**, ENS-Paris, France (978-53-123)
- 3:00PM *Toward a Compactification of the Moduli Space of Convex $\mathbb{R}P^2$ Surfaces.* Preliminary report.
(113) **John C. Loftin**, Columbia University (978-53-72)
- 3:30PM *The Asymptotic Flatness of the Weil-Petersson Metric on Teichmüller Space.* Preliminary report.
(114) **Zheng Huang**, Rice University (978-53-89)
- 4:00PM *Veech surfaces and complete periodicity in genus 2.*
(115) **Kariane Calta**, University of Chicago (978-51-98)
- 4:30PM *Harmonic Maps Between Hyperbolic Spaces.* Preliminary report.
(116) **Michael Wolf***, Rice University, and **Scott D Pauls**, Dartmouth College (978-58-103)

AMS Special Session on Quantum Topology, IV

2:30 PM – 4:20 PM Room 381, Neuberger Hall

Organizers: **Douglas G. Bullock**, Boise State University
Joanna M. Kania-Bartoszyńska, Boise State University
Uwe Kaiser, Boise State University

- 2:30PM *Cocycle knot invariants from dynamical cocycles of quandles and Yang-Baxter cocycles of ubiquitous.*
(117) **Masahico Saito**, University of South Florida (978-57-76)
- 3:30PM *A generalization of quandles and homology theory of set-theoretic Yang-Baxter equations.*
(118) **Mohamed Elhamdadi**, University of South Florida (978-57-77)
- 4:00PM *On the completeness of the involutory Kuperberg invariant of 3-manifolds.*
(119) **Fernando J. O. Souza**, Univ. of Waterloo, Canada (978-57-118)

MAA Special Presentation

3:30 PM – 5:00 PM

Room 364, Neuberger Hall

Supporting Assessment in Undergraduate Mathematics: Why and how you should integrate assessment of student learning in your instructional programs.

Organizer: **Bonnie Gold**, Monmouth University