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# Program of the Sessions

San Francisco, California, October 21–22, 2000

## Saturday, October 21

### Meetings Registration

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7:30 AM – 4:30 PM Lobby (3rd/Main Floor), Thornton Hall

### AMS Exhibit and Book Sale

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7:30 AM – 4:30 PM Room 425, Thornton Hall

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

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8:00 AM – 10:50 AM Room 310, HSS Building

Organizers: **Jesus De Loera**, University of California, Davis

**Frank Sottile**, University of Wisconsin

8:00AM (1) *A point configuration whose space of triangulations is disconnected.*

**Francisco Santos**, University of Cantabria, SPAIN (958-52-215)

8:30AM (2) *Categories of triangulations and classifying spaces.*

**Laura M. Anderson\***, Texas A&M University, and **Nikolai Y. Mnëv**, Steklov Institute-St. Petersburg (958-05-220)

9:00AM (3) *Recovering Lexicographic Triangulations.*

Preliminary report. **Carl W Lee\***, University of Kentucky, and **Wendy Weber**, Central College (958-52-173)

9:30AM (4) *Circuit admissible triangulations of oriented matroids.*

**Jörg Rambau**, Konrad-Zuse-Zentrum für Informationstechnik Berlin (958-05-216)

10:00AM (5) *Flag numbers of generalized Eulerian posets.*

Preliminary report. **Margaret M Bayer**, University of Kansas, and **Gabor Hetyei\***, UNC Charlotte (958-05-270)

10:30AM (6) *The Combinatorics of Multipllices and Ordinary Polytopes.* Preliminary report.

**Margaret M Bayer\***, **Aaron M Bruening** and **Joshua Stewart**, University of Kansas (958-52-175)

### Special Session on Holomorphic Spaces, I

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8:00 AM – 10:50 AM Room 327, Thornton Hall

Organizers: **Sheldon Axler**, San Francisco State University

**Alex Schuster**, San Francisco State University

8:00AM (7) *An Inverse Problem on Single Layer Potentials.* Preliminary report.

**Peter Ebenfelt**, Royal Institute of Technology, **Dmitry Khavinson\***, University of Arkansas & NSF, and **Harold S Shapiro**, Royal Institute of Technology (958-31-30)

8:30AM (8) *Qualitative properties of Pick interpolants.*

**Jim Agler**, UCSD, and **John E McCarthy\***, Washington University (958-46-89)

9:00AM (9) *Zero sets, interpolating sequences and sampling sequences for Bergman spaces.* Preliminary report.

**Daniel H Luecking**, University of Arkansas (958-30-184)

9:30AM (10) *Algebraic Properties of Finite Blaschke Products and Some Geometric Consequences.* Preliminary report.

**Pamela B Gorkin\***, **Ulrich Daepf**, Bucknell University, and **Raymond Mortini**, Universite de Metz (958-30-73)

10:00AM (11) *An extension of the Berger–Shaw theorem.*

**Sherwin Kouchekian\***, Virginia Tech, **John B. Conway**, University of Tennessee, and **Kyung H. Jin**, Kangwan National University (958-47-110)

10:30AM (12) *The majorization function in the Dirichlet space.*

**William T Ross**, University of Richmond (958-30-112)

### Special Session on Diagrammatic Morphisms in Algebra, Category Theory, and Topology, I

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8:00 AM – 10:50 AM Room 335, Thornton Hall

Organizers: **David Radford**, University of Illinois at Chicago

**Fernando Souza**, University of Waterloo

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

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

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

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

found in Volume 21, 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.

- David Yetter**, Kansas State University
- 8:00AM *Diagrammatic morphisms, or directly from*  
▶ (13) *geometry to algebra and back again: an overview.*  
**David N Yetter**, Kansas State University (958-01-222)
- 8:45AM *n-Categorical Physics.*  
(14) **John C Baez**, University of California, Riverside (958-83-242)
- 9:30AM *The Kauffman Bracket Skein as an Algebra of*  
(15) *Observables.*  
**Douglas Bullock**, Boise State University, **Charles Frohman**, The University of Iowa, and **Joanna Kania-Bartoszyńska\***, Boise State University (958-57-94)
- 10:15AM *The Yang Mills Measure in the Kauffman Bracket*  
(16) *Skein Module.*  
**Doug Bullock**, Boise State University, **Charles D Frohman\***, University of Iowa, and **Joanna M Kania-Bartoszyńska**, Boise State University (958-57-88)

### Special Session on History of Mathematics, I

8:30 AM – 10:50 AM Room 317, HSS Building

Organizers: **Shawnee McMurrin**, California State University San Bernardino  
**James J. Tattersall**, Providence College

- 8:30AM *Solving Victorian Math Problems: A Senior Project.*  
▶ (17) Preliminary report.  
**Shawnee L McMurrin**, California State University San Bernardino (958-01-257)
- 9:00AM *Arabic Algebra Before (?) al-Khwarizmi.*  
▶ (18) **Barnabas Hughes**, California State University, Northridge (958-01-48)
- 9:30AM *Mina Rees and Her Influence on Mathematical*  
▶ (19) *Research.* Preliminary report.  
**Amy E Shell**, United States Military Academy (958-01-117)
- 10:00AM *The evolutionary origins of mathematical ability:*  
▶ (20) *Preliminary Report.* Preliminary report.  
**Keith Devlin**, St Mary's College of California (958-01-84)
- 10:30AM *The functional equation of the Riemann zeta*  
▶ (21) *function.* Preliminary report.  
**Jennifer E Beineke**, Trinity College (958-01-241)

### Special Session on Quantum Algebra, I

8:30 AM – 10:20 AM Room 409, Thornton Hall

Organizer: **Nicolai Reshetikhin**, University of California, Berkeley

- 8:30AM *Cyclic homology of Iwahori-Hecke algebras.*  
(22) **Victor Nistor**, Pennsylvania State Univ. (958-19-302)
- 9:00AM Vyjayanthi Chari, TBA
- 9:30AM *Beyond Rectangles: Generalizing the*  
(23) *Kirillov-Reshetikhin Characters.*  
**Michael Kleber**, MIT (958-17-185)
- 10:00AM *Quantum Invariant Measures.*  
(24) **Nicolai Reshetikhin** and **Milen Yakimov\***, University of California at Berkeley (958-43-255)

### Special Session on Abstract Wavelet Theory, I

8:30 AM – 10:50 AM Room 325, Thornton Hall

Organizers: **Lawrence W. Baggett**, University of Colorado  
**Kathy D. Merrill**, The Colorado College

- 8:30AM *Construction of wavelets from generalized*  
(25) *conjugate mirror filters.* Preliminary report.  
**Lawrence W. Baggett\***, University of Colorado, **Jennifer E. Courter** and **Kathy D. Merrill**, The Colorado College (958-43-182)
- 9:00AM *Examples of Non-MRA Wavelets.*  
(26) **Lawrence W Baggett**, University of Colorado, Boulder, **Jennifer E Courter\***, California State University, Hayward, and **Kathy D Merrill**, Colorado College (958-43-201)
- 9:30AM *Combined MSF multiwavelets.*  
(27) **Marcin M Bownik**, University of Michigan (958-42-210)
- 10:00AM *Normalized Tight Frane Wavelet Sets in  $\mathbb{R}^d$ .*  
(28) Preliminary report.  
**Xingde Dai\***, **Yuanan Diao**, University of North Carolina at Charlotte, **Qing Gu**, Beijing University, and **Deguang Han**, McMaster University (958-42-187)
- 10:30AM *Examination of Battle-Lemarie Wavelet coefficients*  
(29) *for frequency estimation.* Preliminary report.  
**Joel K Glenn**, University of Colorado, Boulder (958-42-144)

### Special Session on Automorphic Forms and Representations, I

8:45 AM – 10:50 AM Room 305, HSS Building

Organizers: **Ehud Moshe Baruch**, University of California Santa Cruz  
**Dan Bump**, Stanford University  
**Olav Richter**, University of California Santa Cruz

- 8:45AM *Symmetries for a renormalized integral of*  
(30) *Eisenstein series.*  
**Jennifer E Beineke\***, Trinity College, and **Daniel Bump**, Stanford University (958-11-244)
- 9:30AM *Jacobi theta functions over number fields.*  
(31) **Olav K Richter\***, UC Santa Cruz, and **Howard Skogman**, USC (958-11-164)
- 10:15AM *Regulators for CM curves over number fields.*  
(32) Preliminary report.  
**Jeffrey Stopple**, UC Santa Barbara (958-11-103)

### Special Session on Harmonic Analysis, I

9:00 AM – 10:50 AM Room 432, Thornton Hall

Organizers: **Christoph Thiele**, University of California, Los Angeles  
**Thomas Wolff (deceased)**, California Institute of Technology  
**F. Michael Christ**, University of California, Berkeley  
**James Colliander**, University of California, Berkeley

- 9:00AM *Distribution of lattice points in convex domains.*  
▶ (33) **Luca Brandolini**, University of Bergamo, **Leonardo Colzani**, University of Milano, **Alex Iosevich\***, University of Missouri, **Anatoly Podkorytov**, University of St. Petersburg, and **Giancarlo Travaglini**, University of Milan (958-42-86)
- 9:30AM *On the spectral set conjecture in dimension 1.*  
(34) Preliminary report.  
**Izabella Laba**, UBC (958-42-271)
- 10:00AM *Mixed norm estimates for X-ray transform*  
(35) *restricted to a well-curved rigid line complex in  $\mathbb{R}^4$  and  $\mathbb{R}^3$ .*  
**Mehmet B Erdogan**, California Institute of Technology (958-44-168)

10:30AM *Functions with vanishing periodizations.* Preliminary report. (36)  
**Oleg Kovrizhkin**, Caltech, IAS (958-42-91)

**Special Session on Geometric and Symbolic Dynamical Systems, I**

9:00 AM – 10:50 AM Room 429, Thornton Hall

Organizers: **Arek Goetz**, San Francisco State University  
**Luca Zamboni**, University of North Texas

8:00AM Anatole Katok, TBA  
 9:00AM *Some extensions of Lagrange Theorem on the periodicity of the continued fraction extensions of quadratic irrationals.* (37)  
**Michael Boshernitzan**, Rice University (958-37-237)  
 9:30AM *Generic behaviour of special Euclidean group extensions  $SE(n)$  of uniformly hyperbolic dynamical systems.* (38)  
**Matthew Niccol**, University of Surrey, England (958-58-269)  
 10:00AM *Dynamics of expansive group actions on the circle.* (39)  
**Steven Hurder**, University of Illinois at Chicago (958-58-235)  
 10:30AM *On constructing partially hyperbolic systems with non absolutely continuous central foliations.* Preliminary report. (40)  
**Keith H Burns**, Northwestern University (958-37-166)

**Special Session on Singularities and Algebraic Geometry, I**

9:00 AM – 10:50 AM Room 302, HSS Building

Organizers: **Caroline Melles**, United States Naval Academy  
**Ruth Michler**, University of North Texas

9:00AM Introduction  
 9:10AM *A generalization of Chow's theorem for coherent sheaves of ideals.* (41)  
**Caroline G Melles\***, U. S. Naval Academy, and **Pierre Milman**, University of Toronto (958-14-226)  
 9:40AM *Using moment graphs to compute intersection cohomology.* (42)  
**Tom Braden\***, Harvard University, and **Robert MacPherson**, Institute for Advanced Study (958-14-197)  
 10:30AM *Complete Resolutions, Hsiang-Pati Coordinates, and the Nash Sheaf.* Preliminary report. (43)  
**Laura A Taalman**, James Madison University (958-14-209)

**Special Session on Banach Algebras, I**

9:00 AM – 10:50 AM Room 329, Thornton Hall

Organizers: **Suren Grigoryan**, Kazan State University  
**Thomas Tonev**, University of Montana-Missoula

9:00AM *Algebras of Multipliers of Holomorphic Besov Spaces.* Preliminary report. (44)  
**Richard Rochberg**, Washington University (958-46-246)  
 9:30AM *Triangular Toeplitz contractions and Cowen sets for analytic polynomials.* (45)  
**Raul E Curto**, The University of Iowa (958-46-152)

10:00AM *Holomorphic flows and Cocycles.* Preliminary report. (46)  
**Farhad Jafari\***, University of Wyoming, and **Keith Yale**, University of Montana (958-47-259)

10:30AM *Spectra of compact composition operators on function spaces of bounded symmetric domains.* (47)  
**Dana D Clahane**, California State University, San Marcos (958-47-260)

**Special Session on Operator Algebras, I**

9:00 AM – 10:50 AM Room 326, Thornton Hall

Organizers: **Steve Kaliszewski**, Arizona State University  
**John Quigg**, Arizona State University

9:00AM *Spin systems and symplectic forms* (48)  
**William B Arveson**, UC Berkeley (958-46-65)  
 9:30AM *Noncommutative Topological Entropy.* (49)  
**Nathanial P Brown\***, Berkeley, **Kenneth J Dykema**, Texas A&M, and **Dimitri Shlyakhtenko**, UCLA (958-46-76)  
 10:00AM *Free stochastic integrals and the Ito formula.* Preliminary report. (50)  
**Michael Anshelevich**, UC Berkeley (958-46-176)  
 10:30AM *Subfactors via Planar Algebra Techniques.* (51)  
**Dietmar Bisch**, UC Santa Barbara (958-46-66)

**Special Session on Nonlinear Evolution Equations, I**

9:00 AM – 10:55 AM Room 428, Thornton Hall

Organizers: **Lev Kapitanski**, Kansas State University  
**Gustavo Ponce**, University of California Santa Barbara

9:00AM *On the support of solutions to the generalized KdV equations.* (52)  
**Carlos E Kenig**, University Of Chicago, **Gustavo Ponce\***, University of California-Santa Barbara, and **Luis Vega**, Universidad del Pais Vasco (958-35-116)  
 9:40AM *Global wellposedness of KdV for data in  $H^s(\mathbb{R})$ ,  $s > -\frac{3}{4}$ .* (53)  
**James E Colliander\***, University of California, Berkeley, **Markus Keel**, California Institute of Technology, **Gigliola Staffilani**, Stanford University, **Hideo Takaoka**, Hokkaido Univeristy, and **Terence Tao**, University of California, Los Angeles (958-35-236)  
 10:20AM *Interior gradient bounds for the 2D Navier-Stokes equations.* Preliminary report. (54)  
**Igor Kukavica**, University of Southern California (958-35-285)

**Special Session on Low Genus Curves and Applications, I**

9:00 AM – 10:50 AM Room 523, Thornton Hall

Organizers: **Kristin Lauter**, Microsoft  
**Harold Stark**, University of California San Diego

9:00AM *Curves of genus two with maps of every degree to a fixed elliptic curve.* Preliminary report. (55)  
**Everett W Howe**, Center for Communications Research, La Jolla (958-14-196)  
 9:40AM *Applications of low genus curves to the theory of error-correcting codes.* (56)  
**Judy L Walker**, University of Nebraska (958-11-266)  
 10:20AM *Rational cuboid problem.* (57)  
**Noriko Yui**, Queen's University, Kingston, Ontario Canada K7L 3N6 (958-11-231)

**Invited Address**

11:10 AM – NOON Knuth Hall, Room 100, Creative Arts Bldg

- (58) *From Harmonic Analysis and Geometric Measure Theory to the Study of Large Data Sets*. Preliminary report.  
Peter W. Jones, Yale University (958-65-303)

**Invited Address**

1:30 PM – 2:20 PM Knuth Hall, Room 100, Creative Arts Bldg

- (59) *Curves over Finite Fields with Many Rational Points*. Preliminary report.  
Kristin E. Lauter, Microsoft Research (958-14-296)

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

3:00 PM – 5:50 PM Room 310, HSS Building

Organizers: **Jesus De Loera**, University of California, Davis  
**Frank Sottile**, University of Wisconsin

- 3:00PM (60) *Convex, acyclic, and free sets of an oriented matroid*.  
**Paul H Edelman**, Univ. of Minnesota, **Victor Reiner\***, University of Minnesota, and **Volkmar Welker**, Universitaat Marburg (958-05-59)
- 3:30PM (61) *Szyzygies of oriented matroids*.  
**Isabella Novik\***, **Alexander Postnikov** and **Bernd Sturmfels**, UC Berkeley (958-05-111)
- 4:00PM (62) *Binomial Residues*.  
**Bernd Sturmfels\***, UC Berkeley, **Eduardo Cattani**, University of Massachusetts, Amherst, and **Alicia Dickenstein**, Universidad de Buenos Aires, Argentina (958-05-67)
- 4:30PM (63) *Toric Initial Ideals without Embedded Primes*. Preliminary report.  
**Rekha R Thomas\***, University of Washington, and **Serkan Hosten**, San Fransisco State University (958-13-137)
- 5:00PM (64) *Geometry and complexity of Groebner fans of codimension three lattice ideals*.  
**Serkan Hosten\***, San Francisco State University, **Diane Maclagan**, Institute for Advanced Studies, and **Bernd Sturmfels**, UC Berkeley (958-52-280)
- 5:30PM (65) *Hilbert schemes and the  $n!$  conjecture*.  
**Mark D Haiman**, U.C. San Diego (958-05-106)

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

3:00 PM – 5:20 PM Room 317, HSS Building

Organizers: **Shawnee McMurrin**, California State University San Bernardino  
**James J. Tattersall**, Providence College

- 3:00PM (66) *Nineteenth-century Developments in Geometric Probability: J.J. Sylvester, M. Crofton, J.-E. Barbier, and J. Bertrand*.  
**Eugene Seneta**, University of Sydney, **Karen V. Parshall\***, University of Virginia, and **Francois Jongmans**, University of Liege (958-01-97)
- 3:30PM (67) *G.H. Hardy, the London Mathematical Society, and the rise of British pure mathematical research in the first half of the 20th century*. Preliminary report.  
**Adrian C Rice**, Randolph-Macon College (958-01-133)
- 4:00PM (68) *Statistics in the U.S. Comes of Age: A Case Study in American Influence Abroad*. Preliminary report.  
**Patti W Hunter**, Westmont College (958-01-130)

- 4:30PM (69) *Mathematics and Politics: Shaping the Mathematical Landscape in Post-Unification Italy*. Preliminary report.  
**Laura Martini**, University of Virginia (958-01-98)

- 5:00PM (70) *Quadric, cubic, and quartic cones*.  
**Anatoly B. Korchagin**, Texas Tech University (958-01-34)

**Special Session on Harmonic Analysis, II**

3:00 PM – 5:50 PM Room 432, Thornton Hall

Organizers: **Christoph Thiele**, University of California, Los Angeles  
**Thomas Wolff (deceased)**, California Institute of Technology  
**F. Michael Christ**, University of California, Berkeley  
**James Colliander**, University of California, Berkeley

- 3:00PM (71) *Sixty years of Bernoulli convolutions*.  
**Yuval Peres\***, University of California, **Wilhelm Schlag**, Princeton University, and **Boris Solomyak**, University of Washington (958-28-283)
- 4:00PM (72) *On discrete Schroedinger operators on the line and plane with deterministic potentials*.  
**Wilhelm Schlag**, Princeton University (958-81-251)
- 4:30PM (73) *New WKB methods for one-dimensional Schrödinger operators*.  
**Michael Christ**, University of California, Berkeley, and **Alex Kiselev\***, University of Chicago (958-34-262)
- 5:00PM (74) *Multilinear singular integrals related to the spectral theory of 1D Schrödinger operators*.  
**Camil Muscalu**, University of California, Los Angeles (958-42-206)
- 5:30PM (75) *Formal dimension for semisimple symmetric spaces*.  
**Bernhard Kroetz**, The Ohio State University (958-22-40)

**Special Session on Geometric and Symbolic Dynamical Systems, II**

3:00 PM – 5:50 PM Room 429, Thornton Hall

Organizers: **Arek Goetz**, San Francisco State University  
**Luca Zamboni**, University of North Texas

- 3:00PM (76) *Symbolic dynamics and integer tilings*.  
**Ethan Coven**, Wesleyan University, **William Geller\***, Indiana U. - Purdue U. Indpls., **Sylvia Silberger**, Hofstra University, and **William Thurston**, U.C. Davis (958-37-123)
- 3:30PM (77) *The symbolic dynamics of tilings of the multidimensional integers I*.  
**Ethan M Coven\***, Wesleyan University, **Aimee Johnson**, Swarthmore College, **Natasha Jonoska**, University of South Florida, and **Kathleen Madden**, Drew University (958-37-120)
- 4:00PM (78) *The symbolic dynamics of tilings of the multidimensional integers II*.  
**Ethan M Coven**, Wesleyan University, **Aimee Johnson**, Swarthmore College, **Natasha Jonoska\***, University of South Florida, and **Kathleen Madden**, Drew University (958-37-121)
- 4:30PM (79) *Invariants for substitution dynamical systems*.  
**Charles Radin**, University of Texas at Austin (958-37-115)
- 5:00PM (80) *Tiling spaces are Cantor set fiber bundles*.  
**Robert F Williams**, University of Texas, Austin (958-37-85)

- 5:30PM (81) *Automorphisms of shifts with UFO*. Preliminary report.  
**William Geller** and **Michal Misiurewicz\***, IUPUI (958-37-119)

**Special Session on Holomorphic Spaces, II**

3:00 PM – 5:50 PM Room 327, Thornton Hall

Organizers: **Sheldon Axler**, San Francisco State University  
**Alex Schuster**, San Francisco State University

- 3:00PM (82) *Finite unions of interpolation sequences*.  
**Peter L Duren\***, University of Michigan, and **Alexander P Schuster**, San Francisco State University (958-30-150)
- 3:30PM (83) *The numerical range of a composition operator*.  
**Paul S Bourdon**, Washington and Lee University, and **Joel H Shapiro\***, Michigan State University (958-47-118)
- 4:00PM (84) *Canonical divisors in weighted Bergman spaces*. Preliminary report.  
**Rachel J Weir**, University of Michigan (958-30-139)
- 4:30PM (85) *Boundary Behavior of Extremal Functions in the Bergman Space*. Preliminary report.  
**Carl Sundberg**, University of Tennessee (958-30-177)
- 5:00PM (86) *Generalized factorization in Hardy spaces*. Preliminary report.  
**Michael I Stessin**, University at Albany (958-30-102)
- 5:30PM (87) *Bounded Univalent Mappings and the Wandering Property*. Preliminary report.  
**Brent J Carswell**, University of Michigan (958-30-138)

**Special Session on Diagrammatic Morphisms in Algebra, Category Theory, and Topology, II**

3:00 PM – 5:50 PM Room 335, Thornton Hall

Organizers: **David Radford**, University of Illinois at Chicago  
**Fernando Souza**, University of Waterloo  
**David Yetter**, Kansas State University

- 3:00PM (88) *Symplectic structure on Colorings and Lagrangian tangles*. Preliminary report.  
**Jozef H Przytycki**, George Washington University (958-57-60)
- 3:45PM (89) *Knot invariants, embedded graphs and the category of representations of the Lorentz group*.  
**John W Barrett**, University of Nottingham (958-18-183)
- 4:30PM (90) *Young tabloids and representations of braid groups*. Preliminary report.  
**Xiao-Song Lin**, University of California, Riverside (958-57-253)
- 5:15PM (91) *Cyclic operads and algebra of chord diagrams*.  
**Vladimir Hinich**, University of Haifa, and **Arkady Vaintrob\***, University of Oregon (958-17-217)

**Special Session on Singularities and Algebraic Geometry, II**

3:00 PM – 5:50 PM Room 302, HSS Building

Organizers: **Caroline Melles**, United States Naval Academy  
**Ruth Michler**, University of North Texas

- 3:00PM (92) *Invariant Subspaces of the Monodromy*.  
**David B Massey**, Northeastern University (958-32-159)

- 3:50PM (93) *Interpolating characteristic classes of singular hypersurfaces*. Preliminary report.  
**Paolo Aluffi\***, Florida State University, and **Jean-Paul Brasselet**, IML - CNRS (958-14-228)

- 4:40PM (94) *Topology of Milnor Fibers of Non-Isolated Singularities*. Preliminary report.  
**Chunsheng Ban**, **Lee J McEwan\*** and **Andras Nemethi**, The Ohio State University (958-14-198)

- 5:30PM (95) *Toric regularity*. Preliminary report.  
**Gregory G Smith**, UC Berkeley (958-14-256)

**Special Session on Abstract Wavelet Theory, II**

3:00 PM – 5:20 PM Room 325, Thornton Hall

Organizers: **Lawrence W. Baggett**, University of Colorado  
**Kathy D. Merrill**, The Colorado College

- 3:00PM (96) *Operator algebras, Gabor and Wavelet Frames*.  
**Deguang Han\***, McMaster Univ. and Univ. of Central Florida, **J. P. Gabardo**, McMaster University, and **David R Larson**, Texas A&M University (958-42-100)
- 3:30PM (97) *Minimality of the data in wavelet filters*.  
**Palle E.T. Jorgensen**, The University of Iowa (958-46-35)
- 4:00PM (98) *Von Neumann Algebras and the Equivalence of Weyl-Heisenberg Frames*. Preliminary report.  
**Zeph Landau\***, Mathematical Sciences Research Institute, and **Radu Balan**, Siemens Corporate Research (958-46-267)
- 4:30PM (99) *Wavelet Sets and the Harmonic Analysis of a Discrete Affine Group*.  
**Lek-Heng Lim**, Cornell University/University of Cambridge (958-46-41)
- 5:00PM (100) *Operator-valued wavelet theory and module frame theory*. Preliminary report.  
**David R Larson**, Texas A&M University (958-46-295)

**Special Session on Banach Algebras, II**

3:00 PM – 5:50 PM Room 329, Thornton Hall

Organizers: **Suren Grigoryan**, Kazan State University  
**Thomas Tonev**, University of Montana-Missoula

- 3:00PM (101) *Reversed automatic continuity - maps determining topology*.  
**Krzysztof Jarosz**, Southern Illinois University Edwardsville (958-46-143)
- 3:30PM (102) *On ideals in  $H^\infty$  whose closures are intersections of maximal  $i$  deals*. Preliminary report.  
**Keiji Izuchi**, Niigata University, Niigata, Japan (958-46-114)
- 4:00PM (103) *Uniform approximation on manifolds*. Preliminary report.  
**Alexander J. Izzo**, Bowling Green State University (958-32-199)
- 4:30PM (104) *Examples of Riemann Surfaces with The Bounded Analytic Function Algebra Isomorphic to The One on The Bidisc*. Preliminary report.  
**Mikihiro Hayashi**, Hokkaido University (958-30-169)
- 5:00PM (105) *On  $Q, Q_M$  and  $Q_{M\#}$ -algebras*. Preliminary report.  
**Hugo Peimbert Arizmendi\***, Universidad Nacional Autonoma de Mexico, and **Vesko Valov**, University of Swaziland (958-46-63)

- 5:30PM (106) *The validity range of two Complex Analysis theorems.* Preliminary report.  
**S. A. Grigoryan**, Kazan State University, **T. N. Pankrateva**, Kazan State University - Zelenodolsk, and **T. V. Tonev\***, University of Montana - Missoula (958-46-232)

**Special Session on Periodic and/or Multiple Solutions of Differential and Difference Equations, I**

3:00 PM – 5:50 PM Room 409, Thornton Hall

Organizers: **Jorge Araao**, Claremont McKenna College  
**Mario Martelli**, Claremont McKenna College  
**Adolfo Rumbos**, Pomona College

- 3:00PM (107) *Two-way diffusion problems.*  
**Jorge Araao**, Claremont McKenna College (958-35-223)
- 3:30PM (108) *On Positive Solutions for a Class of Elliptic Problems in  $R^N$ .*  
**David G Costa**, University of Nevada - Las Vegas (958-35-49)
- 4:00PM (109) *Singular time-periodic reaction diffusion systems.*  
**Victor L. Shapiro**, University of California, Riverside (958-35-51)
- 4:30PM (110) *Model Approximation and Feedback Control using the Proper Orthogonal Decomposition Method.* Preliminary report.  
**Charles H Lee**, **Maijian Qian\*** and **Pei-Wen Hsu**, California State University, Fullerton (958-93-127)
- 5:00PM (111) *The Stability of Chevron Solutions.*  
**Carne Calderer**, **Chun Liu**, Pennsylvania State University, and **Karl A Voss\***, Bucknell University (958-35-240)
- 5:30PM (112) *One-sided Resonance Problems for a Class of Quasilinear Elliptic Operators.*  
**Stephen B Robinson\***, Wake Forest University, **Adolfo J Rumbos**, Pomona College, and **Victor L Shapiro**, University of California at Riverside (958-35-221)

**Special Session on Automorphic Forms and Representations, II**

3:00 PM – 5:45 PM Room 305, HSS Building

Organizers: **Ehud Moshe Baruch**, University of California Santa Cruz  
**Dan Bump**, Stanford University  
**Olav Richter**, University of California Santa Cruz

- 3:00PM (113) *On the index of unramified elliptic units.*  
**Farshid Hajir**, California State University, San Marcos (958-11-208)
- 4:00PM (114) *Zeros at the critical point of quadratic twists of modular L-functions.*  
**Brian Conrey\***, American Institute of Mathematics, **Jonathan Keating**, University of Bristol, England, **Michael Rubinstein**, University of Texas at Austin, and **Nina Snaith**, University of Bristol, England (958-11-224)
- 5:00PM (115) *Low lying zeros of dihedral L-functions.*  
**Etienne Fouvry**, Orsay University, and **Henryk Iwaniec\***, Rutgers University (958-11-203)

**Special Session on Operator Algebras, II**

3:00 PM – 5:50 PM Room 326, Thornton Hall

Organizers: **Steve Kaliszewski**, Arizona State University  
**John Quigg**, Arizona State University

- 3:00PM (116) *Recent results on projectionless  $C^*$ -algebras.*  
**George A. Elliott**, U. of Toronto, U. of Copenhagen, Fields Institute, MSRI (958-47-275)
- 3:30PM (117) *Perforated Ordered K-groups of Simple  $C^*$ -algebras.* Preliminary report.  
**Andrew S Toms**, University of Toronto/Fields Institute (958-19-148)
- 4:00PM (118) *Contractive projections in operator space theory.*  
**Matthew P Neal\*** and **Bernard Russo**, University of California, Irvine (958-46-140)
- 4:30PM (119) *The two-prime analogue of the Hecke  $C^*$ -algebra of Bost and Connes.*  
**Nadia S. Larsen\***, University of Copenhagen, **Ian F. Putnam**, University of Victoria, and **Iain Raeburn**, University of Newcastle (958-46-165)
- 5:00PM (120) *Regularity of induced representations.*  
**Astrid an Huef\***, University of Denver, and **Iain Raeburn**, University of Newcastle, Australia (958-46-234)
- 5:30PM (121) *Exactness of Certain Discrete Groups.*  
**Erik P Guentner**, MSRI and IUPUI (958-46-193)

**Special Session on Nonlinear Evolution Equations, II**

3:00 PM – 6:15 PM Room 428, Thornton Hall

Organizers: **Lev Kapitanski**, Kansas State University  
**Gustavo Ponce**, University of California Santa Barbara

- 3:00PM (122) *Improved regularity results for the quasilinear wave equations.* Preliminary report.  
**Sergiu Klainerman** and **Igor Rodnianski\***, Princeton University (958-35-146)
- 3:40PM (123) *Global Existence for Quasilinear Wave Equations Outside Star-Shaped Obstacles.*  
**Markus Keel\***, California Institute of Technology, **Hart F Smith**, University of Washington, Seattle, and **Christopher D. Sogge**, Johns Hopkins University (958-35-292)
- 4:20PM (124) *Strichartz estimates for a Schrödinger operator with non smooth coefficients.* Preliminary report.  
**Gigliola Staffilani\***, Stanford University, and **Daniel Tataru**, Northwestern University (958-35-214)
- 5:00PM (125) *Global existence in nonlinear elastodynamics.*  
**Thomas C Sideris**, University of California (958-35-81)
- 5:40PM (126) *The Scaling of Fluvial Landscapes.*  
**Bjorn Birnir\***, Dept. of Math. UCSB, **Terrence Smith** and **George Merchant**, UCSB (958-35-297)

**Special Session on Low Genus Curves and Applications, II**

3:00 PM – 5:50 PM Room 523, Thornton Hall

Organizers: **Kristin Lauter**, Microsoft  
**Harold Stark**, University of California San Diego

3:00PM (127) *Empirical evidence for the Birch and Swinnerton-Dyer conjectures for modular Jacobians of genus 2 curves.*

**E. V Flynn**, University of Liverpool, **Franck Leprévost**, Université Grenoble, **Edward F Schaefer\***, Santa Clara University, **William A Stein**, Harvard University, **Michael Stoll**, Mathematisches Institut der Heinrich-Heine-Universität, Düsseldorf, and **Joseph L Wetherell**, Mathematical Sciences Research Institute, Berkeley (958-11-156)

3:40PM (128) *Addition in the Jacobian of a Smooth Plane Quartic Curve.* Preliminary report.  
▶ **Matt J Klassen**, DigiPen Institute of Technology (Redmond, WA) (958-14-268)

4:10PM Break

4:40PM (129) *The Arithmetic of Certain Cubic Function Fields.*  
**Mark L Bauer\*** and **Andreas Stein**, University of Illinois, Urbana-Champaign (958-11-261)

5:20PM (130) *NUCOMP in Quadratic Congruence Function Fields.* Preliminary report.  
▶ **Michael J Jacobson**, University of Manitoba (958-11-243)

### Session for Contributed Papers

3:00 PM – 5:55 PM Room 210, Thornton Hall

3:00PM (131) *On the inverse differential Galois problem for  $GL_n$ .*  
**Lourdes Juan**, MSRI (958-13-278)

3:15PM (132) *Electrostatics and Wandering Vectors.*  
**Anatolii A Grinshpan**, University of California, Berkeley (958-31-158)

3:30PM (133) *Unitary Representations of the Discrete Heisenberg Group.* Preliminary report.  
**Keri A Kornelson**, University of Colorado, Boulder (958-43-42)

3:45PM (134) *Confidence Regions for Hitting Probabilities.* Preliminary report.  
**Rod A Freed**, California State University at Dominguez Hills (958-60-230)

4:00PM (135) *An improved method for linear programming problems.*  
▶ **Hung-Ping Tsao**, San Francisco State University (958-90-153)

4:15PM (136) *Twisted Tensor Products.* Preliminary report.  
**Harold Hastings**, **Sylvia Silberger\***, **Marysia Weiss** and **Yurin Wu**, Hofstra University (958-37-101)

4:30PM (137) *The Mechanics of Electron in a Hydrogen Atom.*  
**Andrew C. Angus**, Absolute Knowledge Foundation (958-70-298)

4:45PM (138) *Paradox Logic and How to Count to Two.*  
▶ **Nathaniel S Hellerstein**, City College of San Francisco (958-03-04)

5:00PM (139) *Means to an End.* Preliminary report.  
▶ **Richard P Kubelka**, San Jose State University (958-40-204)

5:15PM (140) *Determinacy in Small Admissible Sets.* Preliminary report.  
**Andrew M Lewis**, Virginia Commonwealth University (958-03-126)

5:30PM (141) *Angular Ratio Transference.* Preliminary report.  
▶ **James H Mulberry**, AMS (958-51-109)

5:45PM (142) *Introducing The Angel's Equations.*  
▶ **Susil K. Jena**, Bhubaneswar, Orissa, India (958-11-82)

## Sunday, October 22

### Meetings Registration

8:00 AM – NOON Lobby (3rd/Main Floor), Thornton Hall

### Special Session on Harmonic Analysis, III

8:00 AM – 10:50 AM Room 432, Thornton Hall

Organizers: **Christoph Thiele**, University of California, Los Angeles  
**Thomas Wolff (deceased)**, California Institute of Technology  
**F. Michael Christ**, University of California, Berkeley  
**James Colliander**, University of California, Berkeley

8:00AM (143) *Product Rule and Chain Rule Estimates for Fractional Derivatives on Spaces of Homogeneous Type.*

**A. Eduardo Gatto**, DePaul University (958-42-149)

8:30AM (144) *Bilinear estimates and applications to 2D NLS.*  
**James E Colliander**, UC Berkeley, **Jan-Marc Delort**, Université Paris-Nord, **Carlos E Kenig**, University of Chicago, and **Gigliola Staffilani\***, Stanford University (958-35-219)

9:00AM (145) *The generalized KdV Equation on the Half-Line.*  
**James E Colliander\***, University of California, Berkeley, and **Carlos E Kenig**, University of Chicago (958-35-233)

9:30AM (146) *Recent Progress on the Square Root Problem of Kato.*  
**Steve Hofmann**, University of Missouri (958-42-147)

10:00AM (147) *Approximate fundamental solutions for low regularity wave equations.* Preliminary report.  
**Hart F Smith**, University of Washington, Seattle (958-35-286)

10:30AM (148) *An Almost Conservation Law and Global Rough Solutions for Nonlinear Schrödinger Equations.*  
**James Colliander**, UC Berkeley, **Markus Keel\***, California Institute of Technology, **Gigliola Staffilani**, Stanford University, **Hideo Takaoka**, University of Tokyo, and **Terence Tao**, University of California, Los Angeles (958-35-273)

### Special Session on Geometric and Symbolic Dynamical Systems, III

8:00 AM – 10:50 AM Room 429, Thornton Hall

Organizers: **Arek Goetz**, San Francisco State University  
**Luca Zamboni**, University of North Texas

8:00AM (149) *Periodic trajectories of multi-dimensional Birkhoff billiards.*  
**Serge Tabachnikov\***, Penn State University, and **Michael Farber**, Tel Aviv University (958-57-105)

8:30AM (150) *Counting Problems on Billiards.* Preliminary report.  
▶ **Alex Eskin**, University of Chicago, and **Howard Masur\***, University of Illinois at Chicago (958-37-254)

9:00AM (151) *Counting periodic orbits and closed geodesics.*  
**Eugene Gutkin**, Santa Monica, California (958-37-99)

9:30AM (152) *Arithmetic Failure of Ergodicity.* Preliminary report.  
▶ **Yitwah Cheung**, Northwestern University (958-37-93)

- 10:00AM *Dynamics on the orbit space and stable ergodicity for equivariant diffeomorphisms.*  
(153) **Michael J Field**, University of Houston (958-37-87)
- 10:30AM *Billiards on Weyl manifolds.* Preliminary report.  
▶ (154) **Maciej P Wojtkowski**, University of Arizona (958-37-287)

### Special Session on Holomorphic Spaces, III

8:00 AM – 10:50 AM Room 327, Thornton Hall

- Organizers: **Sheldon Axler**, San Francisco State University  
**Alex Schuster**, San Francisco State University
- 8:00AM *Carleson Measures for the Dirichlet Space.*  
(155) **Nicola Arcozzi**, Universita Di Bologna, Italy, **Richard Rochberg\***, Washington University, St. Louis, and **Eric Sawyer**, IUPUI, Indianapolis, IN (958-46-46)
- 8:30AM *Berezin Transform and Compactness of Operators.* Preliminary report.  
(156) **Nina Zorboska**, University of Manitoba (958-47-191)
- 9:00AM *Products of Hankel and Toeplitz Operators on the Bergman space.*  
(157) **Karel Stroethoff\***, University of Montana, and **Dechao Zheng**, Vanderbilt University (958-47-107)
- 9:30AM *Another look at some index theorems for the shift.*  
(158) **John R Akeroyd**, University of Arkansas (958-47-36)
- 10:00AM *Products of Toeplitz operators.*  
(159) **Patrick R Ahern**, University of Wisconsin, and **Zeljko Cuckovic\***, University of Toledo (958-47-160)
- 10:30AM *Composition Operators on a Local Dirichlet Space.* Preliminary report.  
(160) **Donald Sarason\***, University of California, and **Jorge-Nuno O Silva**, University of Lisbon (958-47-188)

### Special Session on Diagrammatic Morphisms in Algebra, Category Theory, and Topology, III

8:00 AM – 10:50 AM Room 335, Thornton Hall

- Organizers: **David Radford**, University of Illinois at Chicago  
**Fernando Souza**, University of Waterloo  
**David Yetter**, Kansas State University
- 8:00AM *Linking of orientable and non-orientable surfaces in 4-dimensions.*  
(161) **J. Scott Carter\***, Univ. of South Alabama, **Seiichi Kamada**, Osaka City Univ., **Masahico Saito**, Univ. of South Florida, and **Shin Satoh**, Osaka City Univ. (958-57-172)
- 8:45AM *Quandle cocycle invariants of knots and shadow colored arc diagrams.* Preliminary report.  
(162) **J. Scott Carter**, University of South Alabama, **Daniel Jelsovsky**, Florida Southern College, **Seiichi Kamada**, Osaka City University, and **Masahico Saito\***, University of South Florida (958-57-170)
- 9:30AM *4D TQFT's and gerbes.*  
(163) **Marco A Mackaay**, University of Algarve, Faro, Portugal (958-53-62)
- 10:15AM *Algebraic structures of Feynman diagrams: from Hopf and Lie algebras to operads.* Preliminary report.  
(164) **Dirk Kreimer**, Mainz University, Germany (958-81-205)

### AMS Exhibit and Book Sale

8:00 AM – NOON Room 425, Thornton Hall

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

8:30 AM – 10:50 AM Room 310, HSS Building

- Organizers: **Jesus De Loera**, University of California, Davis  
**Frank Sottile**, University of Wisconsin
- 8:30AM *Cohomology of Bott-Samelsons.* Preliminary report.  
(165) **Allen I Knutson\***, U.C. Berkeley, and **Rebecca F Goldin**, U. of Maryland (958-05-288)
- 9:00AM *Symmetries of Gromov-Witten invariants.*  
▶ (166) **Alexander Postnikov**, UC Berkeley (958-05-179)
- 9:30AM *Invariant Factors for Matrices over Discrete Valuation Rings and the Littlewood-Richardson Rule.*  
(167) **Glenn Appleby**, Santa Clara University (958-05-227)
- 10:00AM *Shifted quasi-symmetric functions and the Hopf algebra of peak functions.*  
(168) **Nantel Bergeron\***, **Stephan Mykytiuk**, York University, Toronto, **Frank J Sottile**, University of Massachusetts, Amherst, and **Stephanie van Willigenburg**, Cornell University (958-05-279)
- 10:30AM *Complementary Algorithms for Tableaux.*  
(169) **Tom Roby\***, Cal State Hayward, **Frank Sottile**, University of Massachusetts, **Julian West**, University of Victoria, and **Jeff Stroomer**, Xilinx, Inc. (958-05-131)

### Special Session on History of Mathematics, III

8:30 AM – 10:50 AM Room 317, HSS Building

- Organizers: **Shawnee McMurrin**, California State University San Bernardino  
**James J. Tattersall**, Providence College
- 8:30AM *The Josephus Problem Revisited.* Preliminary report.  
▶ (170) **James J Tattersall**, Providence College (958-01-128)
- 9:00AM *Gerbert: A Guy in the Right Place at the Right Time.*  
▶ (171) **Betty Mayfield**, Hood College (958-01-124)
- 9:30AM *The Collapse of the Tacoma Narrows Bridge.*  
▶ (172) **Kristen S Moore**, University of Michigan (958-01-281)
- 10:00AM *Symbolical Algebra as a Foundation for Calculus: D. F. Gregory's Contributions.*  
▶ (173) **Patricia R. Allaire**, CUNY Queensborough, and **Robert E. Bradley\***, Adelphi University (958-01-45)
- 10:30AM *Geometry Civilized and Churches Astronomized.*  
▶ (174) **John L Heilbron**, University of California, Berkeley (958-01-258)

### Special Session on Abstract Wavelet Theory, III

8:30 AM – 10:50 AM Room 325, Thornton Hall

- Organizers: **Lawrence W. Baggett**, University of Colorado  
**Kathy D. Merrill**, The Colorado College
- 8:30AM *Projective module wavelet frames over continuous functions on tori.* Preliminary report.  
(175) **Judith A Packer**, Department of Mathematics, National University of Singapore, Republic of Singapore (958-46-212)

- 9:00AM (176) *A construction of Meyer-type wavelets for arbitrary expansive, integer valued matrices in two dimensions.*  
**Marcin M Bownik**, University of Michigan, and **Darrin M Speegle\***, Saint Louis University (958-42-96)
- 9:30AM (177) *Actions of the reals or integers on  $\mathbb{R}^n$  which admit frames.*  
**Keith F Taylor\***, University of Saskatchewan, and **Eckart Schulz**, Suranaree University of Technology (958-43-32)
- 10:00AM (178) *Embedding a Wavelet Generalized Multiresolution Analysis in a Multiwavelet Multiresolution Analysis.* Preliminary report.  
**Sharon S Vestal**, Missouri Western State College (958-43-181)
- 10:30AM (179) *A new technique for constructing a wavelet from a MRA.*  
**Eric Weber**, Texas A&M University (958-42-154)

**Special Session on Periodic and/or Multiple Solutions of Differential and Difference Equations, II**

- 8:30 AM – 10:20 AM Room 409, Thornton Hall  
 Organizers: **Jorge Aarao**, Claremont McKenna College  
**Mario Martelli**, Claremont McKenna College  
**Adolfo Rumbos**, Pomona College
- 8:30AM (180) *Structure of Solutions to Nonlinear Diffusion Equations in  $\mathbb{R}^n$ .* Preliminary report.  
**Allan L Edelson**, University of California, Davis (958-35-122)
- 9:00AM (181) *The Dynamics of Chaotic Maps under Random Perturbations.*  
**Amy E Radunskaya**, Pomona College (958-37-195)
- 9:30AM (182) *Some global convergence theorems for discrete dynamical systems.* Preliminary report.  
**Asuman G Aksoy** and **Mario U Martelli\***, Claremont McKenna College (958-37-151)
- 10:00AM (183) *Solutions of minimal period  $n$  for Hénon-like second order difference equations.*  
**Morris W Hirsch**, University of California (958-37-245)

**Special Session on Singularities and Algebraic Geometry, III**

- 9:00 AM – 10:50 AM Room 302, HSS Building  
 Organizers: **Caroline Melles**, United States Naval Academy  
**Ruth Michler**, University of North Texas
- 9:00AM Introduction
- 9:10AM (184) *New and old results on singular plane curves.* Preliminary report.  
**Ruth I Michler**, UNT & Northeastern U. (958-14-276)
- 9:40AM (185) *Tschirnhausen approximate roots and the Local Uniformization Theorem.* Preliminary report.  
**Mark Spivakovsky**, University of Toronto and University of Toulouse (958-14-171)
- 10:30AM (186) *Singularities of pairs via jet schemes.* Preliminary report.  
**Mircea I Mustata**, University of California, Berkeley (958-14-239)

**Special Session on Banach Algebras, III**

- 9:00 AM – 10:50 AM Room 329, Thornton Hall  
 Organizers: **Suren Grigoryan**, Kazan State University  
**Thomas Tonev**, University of Montana-Missoula
- 9:00AM (187) *Some Functional Analytic Properties of the Fourier Algebra as reflected by some subsets of the Real line.*  
**Edmond E. Granirer**, Univ. of B.C. (958-46-129)
- 9:30AM (188) *Disjointness preserving and local operators on algebras of differentiable functions.*  
**Michael M Neumann**, Mississippi State University (958-46-200)
- 10:00AM (189)  *$C^*$  and Banach algebras associated with minimal diffeomorphisms.* Preliminary report.  
**N. Christopher Phillips**, University of Oregon (958-46-145)
- 10:30AM (190) *Some approximation theorems.* Preliminary report.  
**Rao V Nagisetty**, Math. Dept., University of Toledo, Toledo, Ohio 43606 (958-30-211)

**Special Session on Topics in Probability, with Emphasis on Markov Chains and Random Matrices, I**

- 9:00 AM – 10:50 AM Room 210, Thornton Hall  
 Organizers: **Steve Evans**, University of California, Berkeley  
**Amir Dembo**, Stanford University  
**Yuval Peres**, University of California, Berkeley
- 9:00AM (191) *Random Matrix Theory and Szego's theorem.*  
**Persi Diaconis**, Stanford University (958-60-264)
- 9:40AM (192) *Glauber dynamics and the Ising model on trees.*  
**Claire Kenyon**, LRI, UMR CNRS, **Elchanan Mossel\***, Microsoft research, and **Yuval Peres**, U.C. Berkeley and Hebrew University (958-60-249)
- 10:20AM (193) *The  $\zeta(2)$  limit in the random assignment problem.* Preliminary report.  
**David J Aldous**, U.C. Berkeley (958-60-277)

**Special Session on Automorphic Forms and Representations, III**

- 9:00 AM – 10:45 AM Room 305, HSS Building  
 Organizers: **Ehud Moshe Baruch**, University of California Santa Cruz  
**Dan Bump**, Stanford University  
**Olav Richter**, University of California Santa Cruz
- 9:00AM (194) *On Lifting from Classical Groups to  $GL_n$ .*  
**James W Cogdell**, Oklahoma State University (958-11-263)
- 10:00AM (195) *Modularity of solvable Artin representations of  $GO(4)$ -type.*  
**Dinakar Ramakrishnan**, California Institute of Technology (958-11-174)

**Special Session on Operator Algebras, III**

- 9:00 AM – 10:50 AM Room 326, Thornton Hall  
 Organizers: **Steve Kaliszewski**, Arizona State University  
**John Quigg**, Arizona State University
- 9:00AM (196) *Gromov-Hausdorff distance for quantum metric spaces.* Preliminary report.  
**Marc A Rieffel**, U. C. Berkeley (958-46-136)

## Program of the Sessions – San Francisco, CA, Sunday, October 22 (cont'd.)

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- 9:30AM *The curvature invariant for  $d$ -tuples of operators.*  
(197) **Devin C. V. Greene**, U. C. Berkeley (958-00-290)
- 10:00AM *One-sided  $M$ -ideals in Operator Spaces.* Preliminary report.  
(198) **Vrej A Zarikian\***, **Edward G Effros**, UCLA, and **David Blecher**, University of Houston (958-46-247)
- 10:30AM *One-sided Multipliers of Operator Spaces.* Preliminary report.  
(199) **David Blecher**, University of Houston, **Edward G Effros\*** and **Vrej A Zarikian**, UCLA (958-46-248)

### Special Session on Low Genus Curves and Applications, III

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- 9:00 AM – 10:50 AM **Room 523, Thornton Hall**  
Organizers: **Kristin Lauter**, Microsoft  
**Harold Stark**, University of California San Diego
- 9:00AM *Explicit Bounds and Heuristics on Class Numbers in Hyperelliptic Function Fields.*  
(200) **Andreas Stein\***, University of Illinois at Urbana-Champaign, and **Edlyn Teske**, University of Waterloo (958-11-284)
- 9:40AM *The parallelized Pollard kangaroo method in real quadratic function fields.* Preliminary report.  
▶ (201) **Edlyn E Teske\***, University of Waterloo, and **Andreas Stein**, University of Illinois at Urbana-Champaign (958-11-178)
- 10:20AM Scheidler, TBA

### Invited Address

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- 11:10 AM – NOON **Room 201, Science**  
▶ (202) *Dynamic modeling of the fluid dynamics of microorganism motility.* Preliminary report.  
**Lisa J. Fauci**, Tulane University (958-92-304)

### Invited Address

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- 1:30 PM – 2:20 PM **Room 201, Science**  
(203) *Large Random Matrices and Markov Processes.*  
**Steven N Evans**, University of California at Berkeley (958-60-167)

### Special Session on Algebraic and Geometric Combinatorics, IV

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- 3:00 PM – 5:50 PM **Room 310, HSS Building**  
Organizers: **Jesus De Loera**, University of California, Davis  
**Frank Sottile**, University of Wisconsin
- 3:00PM *On counting permutations in  $S_n$  by pairs of congruence classes of major index.* Preliminary report.  
▶ (204) **Hélène Barcelo\***, **Robert Maule**, Arizona State University, and **Sheila Sundaram**, Wesleyan University (958-05-299)
- 3:30PM *Properties of the quotient complex  $\Delta(B_{kn})/S_k \wr S_n$ .* Preliminary report.  
(205) **Patricia L Hersh**, University of Washington (958-05-135)
- 4:00PM *Some surprising similarities between matroids and shifted simplicial complexes.* Preliminary report.  
(206) **Art Duval**, University of Texas at El Paso (958-05-134)
- 4:30PM *Symmetry classes of alternating-sign matrices.*  
(207) **Greg Kuperberg**, UC Davis (958-05-162)
- 5:00PM *Random trees and moduli of curves.*  
(208) **Andrei Okounkov**, UC Berkeley (958-05-192)

- 5:30PM *Factoring Uniform Distributions.* Preliminary report.  
(209) **Persi Diaconis\***, Stanford University, and **Colin Mallows**, AT&T Laboratories (958-05-57)

### Special Session on Harmonic Analysis, IV

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- 3:00 PM – 4:50 PM **Room 432, Thornton Hall**  
Organizers: **Christoph Thiele**, University of California, Los Angeles  
**Thomas Wolff (deceased)**, California Institute of Technology  
**F. Michael Christ**, University of California, Berkeley  
**James Colliander**, University of California, Berkeley
- 3:00PM *Multilinear operators, WKB asymptotics, and the spectra of one-dimensional Schroedinger operators.* Preliminary report.  
(210) **Michael Christ\***, University of California, Berkeley, and **Alexander Kiselev**, University of Chicago (958-42-202)
- 4:00PM *The disc as a bilinear multiplier.* Preliminary report.  
(211) **Loukas Grafakos\*** and **Xiaochun Li**, University of Missouri (958-42-213)
- 4:30PM *Curvatures of the Melnikov type, Hausdorff dimension, rectifiability, and singular integrals.* Preliminary report.  
(212) **Hany Farag**, Caltech (958-42-294)

### Special Session on Geometric and Symbolic Dynamical Systems, IV

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- 3:00 PM – 5:50 PM **Room 429, Thornton Hall**  
Organizers: **Arek Goetz**, San Francisco State University  
**Luca Zamboni**, University of North Texas
- 3:00PM *Shifts of finite type and flow equivalence.*  
(213) **Mike Boyle\***, University of Maryland, and **Danrun Huang**, St. Cloud State University (958-37-104)
- 3:30PM *Small polynomial matrix presentations of shifts of finite type.*  
(214) **Douglas Lind**, University of Washington (958-37-180)
- 4:00PM *Symbolic dynamics and topological quantum field theory.* Preliminary report.  
(215) **Jack Wagoner**, UC Berkeley (958-81-132)
- 4:30PM *Initial powers of Sturmian words.*  
▶ (216) **Charles G Holton\***, UC Berkeley, and **Luca Q Zamboni**, University of North Texas (958-05-289)
- 5:00PM *The digital filter overflow oscillation problem.* Preliminary report.  
▶ (217) **Peter Ashwin**, University of Exeter (958-37-74)
- 5:30PM *Forbidden Words in Symbolic Dynamics.*  
(218) **Marie-Pierre Beal**, Marne-La Vallée, France, **Filippo Mignosi\***, **Antonio Restivo** and **Marinella Sciortino**, Università di Palermo, Italy (958-37-282)

### Special Session on Holomorphic Spaces, IV

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- 3:00 PM – 4:50 PM **Room 327, Thornton Hall**  
Organizers: **Sheldon Axler**, San Francisco State University  
**Alex Schuster**, San Francisco State University
- 3:00PM *Multipliers and weighted  $\bar{\partial}$  estimates.*  
(219) **Joaquim Ortega-Cerda**, University of Barcelona (958-30-55)

3:30PM (220) *Some geometric properties of analytic Besov spaces.*  
**Dragan Vukotić\***, Universidad Autónoma de Madrid, Spain, **Juan J Donaire**, Universitat Autònoma de Barcelona, Spain, and **Daniel Girela**, Universidad de Málaga, Spain (958-30-90)

4:00PM (221) *Kernels of Hankel operators and hyponormality of Toeplitz operators.*  
**Jonathan E Shapiro\*** and **Caixing Gu**, Cal Poly, San Luis Obispo (958-47-37)

▶ 4:30PM (222) *Spectral aspects of a class of ordinary differential operators.* Preliminary report.  
**Harold S Shapiro**, Mathematics Institute, Royal Institute of Technology, Stockholm, Sweden (958-47-92)

**Special Session on Diagrammatic Morphisms in Algebra, Category Theory, and Topology, IV**

3:00 PM – 5:50 PM Room 335, Thornton Hall

Organizers: **David Radford**, University of Illinois at Chicago  
**Fernando Souza**, University of Waterloo  
**David Yetter**, Kansas State University

3:00PM (223) *Some tools for higher categories.* Preliminary report.  
**Ross H Street**, Macquarie University (958-18-113)

▶ 3:45PM (224) *Unifying Bialgebra Factorizations.*  
**Bernhard K Drabant**, SAP, Germany (958-18-142)

4:30PM (225) *Relating braided Hopf algebras and the mapping class groups via tangle presentations.*  
**Thomas Kerler**, The Ohio State University (958-57-229)

5:15PM (226) *Quantum Clifford Algebras and Multibraided Quantum Groups.*  
**Micho Durdevich**, Institute of Mathematics, UNAM (958-16-238)

**Special Session on Singularities and Algebraic Geometry, IV**

3:00 PM – 5:50 PM Room 302, HSS Building

Organizers: **Caroline Melles**, United States Naval Academy  
**Ruth Michler**, University of North Texas

3:00PM (227) *Multiplicity of a Noetherian Intersection and Resolution of Noetherian Singularities.*  
**Andrei Gabrielov**, Dept. Mathematics, Purdue University (958-14-125)

3:50PM (228) *The algebraic curves package in Maple 6.*  
**Mark van Hoeij**, Florida State University (958-14-95)

4:40PM Problem Session + Demo

**Special Session on Quantum Algebra, II**

3:00 PM – 4:50 PM Room 409, Thornton Hall

Organizer: **Nicolai Reshetikhin**, University of California, Berkeley

3:00PM (229) *Some applications of representation theory to probability.*  
**Andrei Okounkov**, UC Berkeley (958-05-194)

3:30PM (230) *Perturbative 3-manifold invariants by cut-and-paste topology.*  
**Greg Kuperberg\***, UC Davis, and **Dylan Thurston**, Harvard University (958-57-163)

4:00PM (231) *Crystal graphs parameterize the irreducible modules of Hecke algebras.*  
**Monica J Vazirani**, UC Berkeley (958-05-190)

4:30PM (232) *Finite dimensional representations of  $U_q \widehat{\mathfrak{sl}}_N$ .* (Joint work with E. Frenkel.).  
**Eugene Mukhin**, University of California at Berkeley (958-22-301)

**Special Session on Banach Algebras, IV**

3:00 PM – 5:20 PM Room 329, Thornton Hall

Organizers: **Suren Grigoryan**, Kazan State University  
**Thomas Tonev**, University of Montana-Missoula

3:00PM (233) *Amenability of the Measure Algebra of a Locally Compact Group.* Preliminary report.  
**Fereidoun Ghahramani**, Department of Mathematics, University of Manitoba, Winnipeg R3T 2N2, Canada (958-46-161)

3:30PM (234) *When the second transpose of a derivation is also a derivation?.*  
**Victoria Velasco**, Universidad de Granada (Spain) (958-16-75)

4:00PM (235) *Approximately Complemented Ideals of Banach Algebras.*  
**Yong Zhang**, The University of Manitoba (958-46-186)

4:30PM (236) *On Some Topological Algebras of Holomorphic Functions.* Preliminary report.  
**Palacios Lourdes\***, Universidad Autonoma Metropolitana - Iztapalapa, and **Arizmendi Hugo**, Universidad Nacional Autonoma de Mexico (958-46-61)

5:00PM (237) *Inner automorphisms of shift-invariant algebras on compact groups.* Preliminary report.  
**S. A. Grigoryan\***, Kazan State University, **T. N. Ponkrateva**, Kazan State University - Zelenodolsk, and **T. V. Tonev**, University of Montana-Missoula (958-43-272)

**Special Session on Topics in Probability, with Emphasis on Markov Chains and Random Matrices, II**

3:00 PM – 6:00 PM Room 210, Thornton Hall

Organizers: **Steve Evans**, University of California, Berkeley  
**Amir Dembo**, Stanford University  
**Yuval Peres**, University of California, Berkeley

3:00PM (238) *Random Walks on Truncated Cubes and Sampling Knapsack Solutions, Part I.*  
**Alistair Sinclair**, UC Berkeley (958-60-291)

3:30PM (239) *Random Walks on Truncated Cubes and Sampling Knapsack Solutions, Part II.*  
**Benjamin J Morris**, Stanford University (958-60-293)

4:10PM (240) *Lyapunov exponents for a combination of products of random matrices, and applications to stochastic partial differential equations.* Preliminary report.  
**Frederi G Viens**, Purdue University (958-60-68)

4:50PM (241) *Percolation on a stretched lattice.*  
**Christopher Hoffman**, University of Washington (958-60-250)

5:30PM Soshnikov, TBA

**Special Session on Low Genus Curves and Applications, IV**

3:00 PM – 5:30 PM Room 523, Thornton Hall

Organizers: **Kristin Lauter**, Microsoft

**Harold Stark**, University of California  
San Diego

3:00PM *The Probability that the Jacobian of a Hyperelliptic  
(242) Curve Has Prime Order.*

**Douglas A Kuhlman**, Motorola Labs (958-11-265)

3:40PM *Construction of hyperelliptic curves using complex  
(243) multiplication.*

**Annegret Weng**, Institute of Experimental  
Mathematics, Essen (958-11-218)

4:20PM *Counting Points on CM Elliptic Curves.*

(244) **Wendy L Miller**, San Diego, CA (958-11-274)

5:00PM *Computing torsion points on curves.* Preliminary  
(245) report.

**Bjorn Poonen**, U.C. Berkeley (958-11-207)

**Bernard Russo**  
Associate Secretary  
Irvine, California