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# Program of the Sessions

*Baton Rouge, Louisiana, March 14–16, 2003*

## Friday, March 14

### Meeting Registration

NOON – 4:30 PM                      Outside Room 201, Tureaud Hall

### AMS Exhibit and Book Sale

NOON – 4:30 PM                      Room 201, Tureaud Hall

### Invited Address

1:10 PM – 2:00 PM                      Dodson Auditorium, Dodson

1:00PM Opening Remarks

- (1) *A new look at sums of squares, Jacobi elliptic functions, and Ramanujan's tau function.*  
**Stephen C. Milne**, The Ohio State University  
(984-11-05)

### Special Session on Applied Mathematics and Materials Science, I

2:15 PM – 5:05 PM                      Room 221, Tureaud Hall

Organizers: **Robert Lipton**, Louisiana State University  
**Stephen Shipman**, Louisiana State University  
**Blaise Bourdin**, Louisiana State University  
**Yuri Antipov**, Louisiana State University

- 2:15PM *Perfectly plastic heterogeneous materials.*  
(2) **Guillermo H Goldsztein**, Georgia Institute of Technology (984-74-29)  
2:45PM *A radial biphasic model for local cell-matrix mechanics in articular cartilage.*  
(3) **Mansoor A Haider**, Dept. of Mathematics, North Carolina State University (984-74-116)

- 3:15PM *A  $\delta$ -function model of facets.*  
(4) **Tinghui Xin** and **Harris Wong\***, LSU (984-34-162)  
3:45PM *Micromechanics of Random Structure Composites.*  
(5) **V A Buryachenko**, University of Dayton Research Institute (984-35-52)  
4:15PM *Thermodynamic Framework for Coupling of Viscoplasticity and Viscodamage for Dynamic Localization Problems Using Gradient Theory.*  
(6) **Rashid K. Abu Al-Rub\*** and **George Z. Voyiadjis**, Department of Civil and Environmental Engineering (984-74-207)  
4:45PM *A differential scheme for effective thermoelastic properties of multiphase composite materials.*  
(7) **Vladimir Vinogradov**, University of Utah (984-74-262)

### Special Session on Arrangements in Topology and Algebraic Geometry, I

2:15 PM – 4:45 PM                      Room 226, Tureaud Hall

Organizers: **Daniel C. Cohen**, Louisiana State University  
**Alexander I. Suci**, Northeastern University

- 2:15PM *Projective line complexes and resonance varieties.*  
(8) Preliminary report.  
**Michael J. Falk**, Northern Arizona University (984-51-199)  
2:55PM *Equivariant Euler characteristics of Milnor fibres of reflection arrangements.*  
(9) **Graham Denham\*** and **Nicole Lemire**, University of Western Ontario (984-20-237)  
3:35PM *Graded Hecke Algebras.*  
(10) **Anne V Shepler\***, University of North Texas, and **Arun Ram**, University of Wisconsin, Madison (984-20-202)  
4:15PM *Some combinatorics of Orlik-Solomon algebras.*  
(11) **David Forge**, Iri - orsay (984-05-217)

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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 24, Issue 2 of *Abstracts of papers presented to the American Mathematical Society*, ordered according to the numbers in parentheses following the listings. The middle two digits, e.g., 897-20-1136, refer to the Mathematical Reviews subject classification assigned by the individual author. Groups of papers for each subject are listed chronologically in the *Abstracts*. The last one to four digits, e.g., 897-20-1136, refer to the receipt number of the abstract; abstracts are further sorted by the receipt number within each classification.

**Special Session on Commutative Ring Theory, I**

2:15 PM – 5:05 PM Room 203, Tureaud Hall

Organizers: **James B. Coykendall**, North Dakota State University  
**Bernadette Mullins**, Birmingham State College

- 2:15PM (12) *Finite representation type and direct-sum cancellation.*  
**Ryan Karr**, University of Nebraska-Lincoln (984-13-193)
- 2:45PM (13) *A Characterization of Valuation Domains via  $m$ -Canonical Ideals.* Preliminary report.  
**Ayman R Badawi**, Birzeit University, West Bank (984-13-51)
- 3:15PM (14) *Ratliff-Rush closure of  $(x, y)$ -primary ideals in  $K[x, y]$ .* Preliminary report.  
**David C. Lantz**, Colgate University (984-13-180)
- 3:45PM (15) *The Mori property in rings with zero divisors, I.V.*  
**Thomas G Lucas**, University of North Carolina Charlotte (984-13-81)
- 4:15PM (16) *The half-factorial property and domains of the form  $A+XB[X]$ .* Preliminary report.  
**James Coykendall**, North Dakota State University, Fargo, **Tiberiu Dumitrescu**, Universitatea Bucuresti, Bucharest, and **Muhammad Zafrullah\***, Idaho State University, Pocatello (984-13-161)
- 4:45PM (17) *Generalized Notions of Closure.* Preliminary report.  
**Jim Coykendall** and **Tridib Dutta\***, North Dakota State University (984-13-42)

**Special Session on Frames, Wavelets, and Tomography, I**

2:15 PM – 5:05 PM Room 211, Tureaud Hall

Organizer: **Gestur Olafsson**, Louisiana State University

- 2:15PM (18) *Generalized Multiresolution Analyses, a New Look.* Preliminary report.  
**Lawrence W. Baggett**, University of Colorado (984-43-85)
- 2:45PM (19) *Wavelet representations and the Ruelle transfer operator.*  
**Dorine Ervin Dutkay**, The University of Iowa (984-43-127)
- 3:15PM (20) *Non-separable Radial Frame Multiresolution Analysis in Multidimensions.*  
**M Papadakis\***, **G Gogoshin**, University of Houston, **I A Kakadiaris**, University of Houston, **D J Kouri** and **D K Hoffman**, University of Houston (984-42-76)
- 3:45PM (21) *Affine Frames, GMRA's, and the Canonical Dual.*  
**Marcin Bownik\***, University of Michigan, and **Eric Weber**, University of Wyoming (984-42-152)
- 4:15PM (22) *Multiscale Structures and Coxeter Groups.*  
**Peter R Massopust**, Varco Inc. (984-42-221)
- 4:45PM (23) *Orthogonality relations for wavelets and for fractals.*  
**Palle E. T. Jorgensen**, University of Iowa (984-42-72)

**Special Session on Graphs and Matroids, I**

2:15 PM – 5:05 PM Room 213, Tureaud Hall

Organizers: **Bogdan S. Oporowski**, Louisiana State University  
**James G. Oxley**, Louisiana State University

- 2:15PM (24) *Matroid Minors.*  
**Geoff Whittle**, Victoria University of Wellington (984-05-122)
- 3:15PM (25) *Extending the chromatic number to matrices, matroids and oriented matroids.* Preliminary report.  
**Laura Chavez** and **Luis A Goddyn\***, Simon Fraser University, Vancouver (984-05-196)
- 3:45PM (26) *Distribution of contractible elements in 2-connected and 3-connected matroids.*  
**Haidong Wu**, University of Mississippi (984-05-204)
- 4:15PM (27) *Some results on representability of matroids.* Preliminary report.  
**Sandra R Kingan**, Penn State Harrisburg (984-05-220)
- 4:45PM (28) *An extremal result for a class of binary matroids.*  
**Hongxun Qin\*** and **Xiangqian Zhou**, The Ohio State University (984-05-153)

**Special Session on Induced Representations: Connections to Graphs, Number Theory, Geometry, I**

2:15 PM – 5:00 PM Room 215, Tureaud Hall

Organizers: **J. William Hoffman**, Louisiana State University  
**Robert V. Perlis**, Louisiana State University  
**Neal W. Stoltzfus**, Louisiana State University

- 2:15PM (29) *Ihara's Zeta Function: An Encounter Between Number Theory and Graph Theory.* Preliminary report.  
**Audrey A. Terras**, U.C.S.D. (984-11-74)
- 3:15PM (30) *A Brief Survey of Zeta Functions in Knot Theory.*  
**Xiao-Song Lin**, University of California, Riverside (984-57-170)
- 4:15PM (31) *Bartholdi zeta functions of graph coverings.*  
**Hirobumi Mizuno**, Department of Electronics and Computer Science, Meisei University, Japan, and **Iwao Sato\***, Oyama National College of Technology, Japan (984-11-226)

**Special Session on Low Dimensional Topology, I**

2:15 PM – 5:05 PM Room 225, Tureaud Hall

Organizers: **Oliver T. Dasbach**, Louisiana State University  
**Patrick M. Gilmer**, Louisiana State University  
**Richard A. Litherland**, Louisiana State University

- 2:15PM (32) *Kauffman bracket skein module of quaternionic space.* Preliminary report.  
**John M Harris**, Louisiana State University (984-57-212)
- 2:45PM (33) *Skein algebras modulo commutators.* Preliminary report.  
**Michael McLendon**, Washington College (984-57-242)
- 3:15PM (34) *The structure of the rational knot concordance group.*  
**Jae Choon Cha**, Indiana University (984-57-142)
- 3:45PM (35) *Automorphisms of the Torelli Group in genus  $\geq 2$ .* Preliminary report.  
**John D McCarthy**, Michigan State University, and **William R Vautaw\***, Southeastern Louisiana University (984-57-90)

- 4:15PM *the Yang-Mills Measure in the Kauffman Skein Module*. Preliminary report.  
(36) **Jianyuan K. Zhong**, Louisiana Tech University (984-57-177)
- 4:45PM *Invariants of Knots and Knotted Surfaces*.  
(37) **J Scott Carter**, Univ. of South Alabama (984-55-179)

**Special Session on Mathematical Techniques in Musical Analysis, I**

2:15 PM – 5:05 PM **Room 120, Tureaud Hall**

- Organizers: **Judith L. Baxter**, University of Illinois at Chicago  
**Robert Peck**, Louisiana State University
- 2:15PM Opening Remarks: Dean Ronald Ross, College of Music and Dramatic Arts, Louisiana State University
- 2:20PM *Introduction to the Special Session: An Overview of Mathematical Techniques in Musical Analysis*.  
▶ (38) **Robert W. Peck**, Louisiana State University (984-00-110)
- 2:50PM *The Impossible Coin Toss*. Preliminary report.  
▶ (39) **Stephen Soderberg**, Library of Congress (984-20-63)
- 3:25PM *Dinner Tables, the Ising Model, and the Piano Keyboard*. Preliminary report.  
▶ (40) **Jack M Douthett**, TVI Community College (984-06-13)
- 4:00PM *Minimal Description Length: An Information-Theoretic Approach to Music Model Building*. Preliminary report.  
(41) **Panayotis Mavromatis**, Eastman School of Music (984-60-261)
- 4:35PM *Tessellating the Chromatic*.  
▶ (42) **Jonathan Wild**, Harvard University (984-00-190)

**Special Session on Stochastic Analysis and Applications, I**

2:15 PM – 5:05 PM **Room 220, Tureaud Hall**

- Organizers: **H.-H. Kuo**, Louisiana State University  
**P. Sundar**, Louisiana State University
- 2:15PM *Functionals of innovations for some random fields*.  
(43) **Takeyuki Hida**, Meijo University (984-60-268)
- 3:15PM *Complex Itô Formulas*. Preliminary report.  
(44) **Mylan Redfern**, University of Southern Mississippi (984-60-58)
- 3:45PM *An infinite dimensional stochastic process and the Levy Laplacian acting on WND-valued functions*.  
(45) **Kimiaki Saito**, Meijo University (984-60-269)
- 4:15PM *A Hölder inequality for holomorphic functions*.  
▶ (46) Preliminary report.  
**Aurel Iulian Stan**, University of Rochester (984-32-113)
- 4:45PM *Biorthogonal Decompositions of linear operators in non-Gaussian White Noise Analysis*. Preliminary report.  
(47) **Eugene Yablonsky**, Ohio State University (984-81-257)

**Special Session on Stochastics, Quantization, and Segal-Bargmann Analysis, I**

2:15 PM – 4:35 PM **Room 228, Tureaud Hall**

- Organizers: **Bruce K. Driver**, University of California San Diego  
**Brian C. Hall**, University of Notre Dame

- Jeffrey J. Mitchell**, Baylor University
- 2:15PM *Holomorphic Dirichlet forms on complex hyperbolic space*.  
(48) **Leonard Gross\***, Cornell University, and **Zhongmin Qian**, CNRS, Toulouse, France (984-58-103)
- 2:45PM *Strong Hypercontractivity in Holomorphic Clifford Algebras*. Preliminary report.  
(49) **Todd Kemp**, Cornell University (984-46-53)
- 3:15PM *Entropy inequalities on  $S^n$* . Preliminary report.  
▶ (50) **Eric A Carlen**, Ga Tech (984-46-230)
- 3:45PM *Relativistic "Segal-Bargmann" Representations*.  
(51) **Gerald Kaiser**, Virginia Center for Signals and Waves (984-81-33)
- 4:15PM *A semigroup-based modification of coherent states providing a pseudo-diagonal representation for operators in a deformed antinormal order*.  
(52) **Bernhard G Bodmann\***, Princeton University, and **Jean-Pierre Gazeau**, Universite Paris 7-Denis Diderot (984-81-48)

**Special Session on Q-Series in Number Theory and Combinatorics, I**

2:15 PM – 5:05 PM **Room 210, Tureaud Hall**

- Organizers: **Mourad E. H. Ismail**, University of South Florida  
**Stephen C. Milne**, The Ohio State University
- 2:15PM *A quadruple product extension of Jacobi's triple product identity*. Preliminary report.  
(53) **Krishnaswami Alladi\*** and **Alexander Berkovich**, University of Florida (984-11-86)
- 2:45PM *Combinatorial proof of Ramanujan's  ${}_1\psi_1$  summation*.  
(54) **Ae Ja Yee**, University of Illinois at Urbana-Champaign (984-05-224)
- 3:15PM *A characterization of the q-Racah polynomials*.  
▶ (55) **Paul M Terwilliger**, University of Wisconsin (984-33-249)
- 3:45PM *Generalization of a Theorem of Bochner*. Preliminary report.  
(56) **Mourad E.H. Ismail**, University of South Florida (984-33-267)
- 4:15PM *Ekhad-Zeilberger identities and their multiset analogs*. Preliminary report.  
(57) **Alexander Berkovich** and **Frank G Garvan\***, University of Florida (984-05-125)
- 4:45PM Discussion

**Session for Contributed Papers, I**

2:15 PM – 4:10 PM **Room 116, Tureaud Hall**

- 2:15PM *Game Coloring of Trees*.  
▶ (58) **Nassim Sohaee**, University of Texas at Arlington (984-05-108)
- 2:30PM *Commutative Periodic Semigroups with the Ideal Retraction Property*. Preliminary report.  
▶ (59) **Karen D. Aucoin\***, McNeese State University, **Jill A. Dumesnil**, Stephen F. Austin University, and **John A. Hildebrand**, Louisiana State University (984-20-111)
- 2:45PM *Pro-x Groups*.  
(60) **Julie C Jones**, Sam Houston State University (984-22-44)
- 3:00PM *Solving Differential Equations Using Special Functions*. Preliminary report.  
▶ (61) **Gary Childs**, University of North Alabama (984-34-21)

- 3:15PM *On Two Math Models for Spread of HIV/AIDS.*  
 ▶ (62) Preliminary report.  
**Bhagwan Dass Aggarwala**, University of Calgary (984-37-173)
- 3:30PM *Set theoretic proof for the Jordan curve theorem.*  
 ▶ (63) **Avery S Zoch**, Atlas Distributions (984-54-22)
- 3:45PM *Knots in the Cubic Lattice.*  
 ▶ (64) **Marta A Kobiela**, Texas A&M University (984-55-20)
- 4:00PM *Unique Prime Decompositions of Pairs of Solid Tori.*  
 (65) Preliminary report.  
**James R. Bozeman**, Lyndon State College (984-57-200)

- 8:30AM *Symmetries and bifurcations in min-max problem of robust optimal design.*  
 (71) **Elena Cherkaev\*** and **Andrej Cherkaev**, University of Utah (984-49-206)
- 9:00AM *Microstructure Sensitive Design For Two Phase Structures Using Two Point Correlation Functions.*  
 (72) **Hamid Garmestani\***, **Hamid Garmestani**, Georgia Institute of Technology, and **Brent Adams**, BYU (984-60-45)
- 9:30AM *Imaging in random media.*  
 (73) **Liliana Borcea\***, Rice University, **George Papanicolaou**, Stanford University, and **Chrysoula Tsogka**, CNRS Marseille (984-35-46)
- 10:00AM *An inverse problem for the stationary transport equation in the presence of a Riemannian metric.*  
 (74) Preliminary report.  
**Stephen R McDowell**, Western Washington University (984-35-134)
- 10:30AM *Optimization of Resonances in Photonic Crystals.*  
 (75) Preliminary Report. Preliminary report.  
**Stephen Shipman\***, **Robert Lipton**, Louisiana State University, and **Stephanos Venakides**, Duke University (984-49-139)

**Special Session on Algebraic Number Theory and K-Theory, I**

- 2:30 PM – 5:20 PM **Room 206, Tureaud Hall**  
 Organizers: **Jurgen Hurrelbrink**, Louisiana State University  
**Jorge F. Morales**, Louisiana State University  
**Robert Osburn**, McMaster University
- 2:30PM *Euclidean Minima of Algebraic Number Fields.*  
 (66) **Eva Bayer Fluckiger**, EPFL, Lausanne, Switzerland (984-11-197)
- 3:15PM *Genus formulae for higher étale K-theory groups.*  
 (67) **Abbas Movahhedi**, Université de Limoges (984-11-145)
- 4:00PM *New Ramification Breaks and Local, Additive Galois Structure.* Preliminary report.  
 (68) **Nigel P. Byott**, University of Exeter, and **G. Griffith Elder\***, University of Nebraska at Omaha (984-11-252)
- 4:45PM *Partial Sums of Multiple Zeta Series.*  
 ▶ (69) **Jianqiang Zhao**, University of Pennsylvania (984-11-154)

**Special Session on Commutative Ring Theory, II**

- 8:00 AM – 10:50 AM **Room 203, Tureaud Hall**  
 Organizers: **James B. Coykendall**, North Dakota State University  
**Bernadette Mullins**, Birmingham State College
- 8:00AM *Factorization Properties in Block Monoids Formed by All-Divisor Subsets of a Cyclic Group.* Preliminary report.  
 (76) **William W Smith**, University of North Carolina at Chapel Hill (984-13-60)
- 8:30AM *The class group of a monoid domain.*  
 (77) **David F Anderson\*** and **Gyu Whan Chang**, Mathematics Department (984-13-109)
- 9:00AM *Full and Asymptotic Elasticity in Atomic Integral Domains and Monoids.* Preliminary report.  
 ▶ (78) **Scott T. Chapman**, Trinity University (984-13-59)
- 9:30AM *Units, primes, and generalizations of factorial domains.* Preliminary report.  
 (79) **P. Malcolmson** and **F. Okoh\***, Wayne State University (984-13-17)
- 10:00AM *When are associates unit multiples?*  
 (80) **Daniel D Anderson**, The University of Iowa (984-13-41)
- 10:30AM *GCD-sets in integral domains II.*  
 (81) **Jeanam Park\***, Department of Mathematics, Inha University, and **Gyuwhan Chang**, Department of Mathematics, Incheon University (984-13-144)

**Saturday, March 15**

**Meeting Registration**

7:30 AM – 4:00 PM **Outside Room 201, Tureaud Hall**

**AMS Exhibit and Book Sale**

7:30 AM – 4:00 PM **Room 201, Tureaud Hall**

**Special Session on Applied Mathematics and Materials Science, II**

- 8:00 AM – 10:50 AM **Room 221, Tureaud Hall**  
 Organizers: **Robert Lipton**, Louisiana State University  
**Stephen Shipman**, Louisiana State University  
**Blaise Bourdin**, Louisiana State University  
**Yuri Antipov**, Louisiana State University
- 8:00AM *Phase field method in Optimal Design.*  
 (70) **Blaise A Bourdin\***, Louisiana State University, and **Antonin Chambolle**, Université Paris Dauphine (984-49-186)

**Special Session on Frames, Wavelets, and Tomography, II**

- 8:00 AM – 10:50 AM **Room 211, Tureaud Hall**  
 Organizer: **Gestur Olafsson**, Louisiana State University
- 8:00AM *A physical interpretation for finite tight frames.*  
 (82) **Peter G. Casazza\***, University of Missouri, **M. Fickus**, Cornell University, **Jelena Kovacevic**, Bell Labs, **Manuel T. Leon** and **Janet Crandell Tremain**, University of Missouri (984-15-32)

- 8:30AM *Bracket Products for Weyl-Heisenberg (Gabor) Frames.* (83)  
**Pete G Casazza**, University of Missouri, and **Mark C Lammers\***, Western Washington University (984-46-258)
- 9:00AM *Wave packet densities.* Preliminary report. (84)  
**Wojciech Czaja**, University of Maryland, College Park and University of Wroclaw, **Gitta Kutyniok**, Universitat Paderborn, and **Darrin Speegle\***, Saint Louis University (984-42-191)
- 9:30AM *Connectivity for tight frame Gabor systems with rational lattices.* Preliminary report. (85)  
**Edward N. Wilson\*** and **Demetrio Labate**, Washington University in St. Louis (984-42-93)
- 10:00AM *Characterization of Functional Gabor Frame Multipliers.* Preliminary report. (86)  
**Deguang Han**, University of Central Florida (984-42-62)
- 10:30AM *A frame-Riesz basic sequence duality result for wavelet sets.* (87)  
**Radu V Balan**, Siemens Corporate Research (984-40-25)

### Special Session on Graphs and Matroids, II

8:00 AM – 10:50 AM Room 213, Tureaud Hall

Organizers: **Bogdan S. Oporowski**, Louisiana State University

**James G. Oxley**, Louisiana State University

- 8:00AM *Splitter theorems for 4-regular graphs.* (88)  
**Guoli Ding** and **Jinko Kanno\***, Louisiana State University (984-05-69)
- 8:30AM *The class of binary matroids with no  $M(K_{3,3})$ -,  $M(K_5)$ -,  $M^*(K_{3,3})$ -, or  $M^*(M(K_5))$ -minors.* (89)  
**Xiangqian Zhou\*** and **Hongxun Qin**, Ohio State University (984-05-141)
- 9:00AM *Flow and coloring duality of imbedded graphs and signed graphs.* Preliminary report. (90)  
**Daniel C Slilaty**, Wright State University (984-05-188)
- 9:30AM *Largest Circuits and Cocircuits in Graphs and Matroids.* (91)  
**Nolan McMurray**, **Talmage J Reid\***, **Bing Wei** and **Haidong Wu**, The University of Mississippi (984-05-133)
- 10:00AM *Circumference of 3-connected graphs.* (92)  
**Xingxing Yu\***, Georgia Institute of Technology, **Guantao Chen**, Georgia State University, **Laura Sheppardson**, Georgia Tech, and **Wenan Zang**, University of Hong Kong (984-05-128)
- 10:30AM  *$K_{3,k}$  Minors in Large 7-Connected Graphs.* (93)  
**Thomas Boehme**, Technische Universitat, Ilmenau, **John Maharry\***, The Ohio State University, and **Bojan Mohar**, University of Ljubljana (984-05-57)

### Special Session on Induced Representations: Connections to Graphs, Number Theory, Geometry, II

8:00 AM – 10:50 AM Room 215, Tureaud Hall

Organizers: **J. William Hoffman**, Louisiana State University

**Robert V. Perlis**, Louisiana State University

**Neal W. Stoltzfus**, Louisiana State University

- 8:00AM *Constructing Gassmann triples.* (94)  
**Patricia Beaulieu**, University of Louisiana, Lafayette (984-20-239)
- 8:30AM *Beaulieu's construction over a field of arbitrary characteristic.* (95)  
**Benjamin Thomas Webster**, University of California, Berkeley (984-20-259)
- 9:30AM *Siegel Poles of Covering Graph Zeta Functions.* Preliminary report. (96)  
**Harold M. Stark**, U.C.S.D. (984-11-73)
- 10:30AM *Zeta functions and Isospectrality of Regular Graphs.* Preliminary report. (97)  
**Robert Perlis\***, Louisiana State University, and **Aubi Mellein**, Cal State San Marcos (984-53-236)

### Special Session on Low Dimensional Topology, II

8:00 AM – 10:50 AM Room 225, Tureaud Hall

Organizers: **Oliver T. Dasbach**, Louisiana State University

**Patrick M. Gilmer**, Louisiana State University

**Richard A. Litherland**, Louisiana State University

- 8:00AM *Idempotents in the Temperley Lieb Algebra, Meanders and Their Generalizations.* Preliminary report. (98)  
**Louis H. Kauffman**, University of Illinois at Chicago (984-57-244)
- 8:30AM *Normal Surfaces and Quantum Invariants.* (99)  
**Charles D Frohman\***, The University of Iowa, and **Joanna M Kania-Bartoszynska**, Boise State University (984-57-83)
- 9:00AM *Quantum invariants away from roots of unity.* (100)  
**Charles D Frohman**, University of Iowa, and **Joanna Kania-Bartoszynska\***, Boise State University (984-57-71)
- 9:30AM *Small 3-manifolds of large genus.* (101)  
**Ian Agol**, University of Illinois at Chicago (984-57-254)
- 10:00AM *Virtual Crossing Realization.* Preliminary report. (102)  
**Victor Samuel Nelson**, Whittier College (984-57-79)
- 10:30AM *Factorization of the multivariable Conway invariant via the Kontsevich integral.* (103)  
**Gregor Masbaum**, University of Paris 7, and **Arkady Vaintrob\***, University of Oregon (984-57-209)

### Special Session on Mathematical Techniques in Musical Analysis, II

8:00 AM – 10:55 AM Room 120, Tureaud Hall

Organizers: **Judith L. Baxter**, University of Illinois at Chicago

**Robert Peck**, Louisiana State University

- 8:00AM *A Mathematical Model for Tone Apperception.* Preliminary report. (104)  
**Thomas Noll**, Technical University of Berlin (984-22-218)
- 8:40AM *Structural and Transformational Properties of All-Interval Tetrachords.* (105)  
**Adrian P Childs**, University of Georgia (984-00-205)
- 9:15AM *Continuous functions and musical spaces.* (106)  
**Clifton D Callender**, Florida State University (984-00-260)

- 9:50AM *Number Theory and Music Theory: Recent Extensions in Music Theory of the Three Gap Theorem.*  
 ► (107) **David L. Clampitt**, Yale University (984-11-27)
- 10:25AM *The Coherence Index in Well-Formed and Pair-Wise Well-Formed Scales.*  
 (108) **Norman A Carey**, Eastman School of Music (984-11-241)

**Special Session on Stochastic Analysis and Applications, II**

8:00 AM – 10:50 AM Room 220, Tureaud Hall

- Organizers: **H.-H. Kuo**, Louisiana State University  
**P. Sundar**, Louisiana State University
- 8:00AM Discussion
- 9:00AM *Martingales from Fractional Brownian Motion.*  
 (109) Preliminary report.  
**Tyrone E. Duncan**, University of Kansas (984-60-82)
- 9:30AM *Central Limit Theorem for Diffusion Processes in Discontinuous Drift with Small Pertabation.*  
 (110) **Tzoo-Shuh Chiang\***, Institute of Mathematics, Academia Sinica, and **Shuenn-Jyi Sheu**, Institute of Mathematics, Academia Sinica (984-60-96)
- 10:00AM *Stochastic vorticity approach to fluid dynamics.*  
 (111) **Anna Amirdjanova**, University of Michigan (984-60-66)
- 10:30AM Discussion

**Special Session on Asymptotic Analysis, Stability, and Generalized Functions, I**

8:00 AM – 10:50 AM Room 103, Tureaud Hall

- Organizers: **Ricardo Estrada**, Louisiana State University  
**Frank Neubrander**, Louisiana State University  
**Gunter Lumer**, University of Mons-Hainaut
- 8:00AM *Implications of Spectral Asymptotics for Quantum Vacuum Energy.*  
 (112) **Stephen A. Fulling**, Texas A&M University (984-81-54)
- 8:30AM *Linear continuous extension operators for Gevrey classes on polysectors.*  
 (113) **Javier Sanz**, Universidad de Valladolid, Spain (984-41-140)
- 9:00AM *Weighted norm bounds and distribution solutions to Schrödinger type equations.* Preliminary report.  
 (114) **Peer C. Kunstmann**, Mathematisches Institut I, Universitaet Karlsruhe (984-47-146)
- 9:30AM *A generalization of the residue formula.*  
 ► (115) **Ricardo Estrada**, Louisiana State University (984-46-233)
- 10:00AM *Functional determinants by contour integration methods.*  
 (116) **Klaus Kirsten\***, Baylor University, and **Alan McKane**, University of Manchester (984-58-159)
- 10:30AM *Perturbation theorems for  $\alpha$ -times integrated semigroups.*  
 (117) **Cornelia Kaiser**, University of South Carolina (984-47-129)

**Special Session on Q-Series in Number Theory and Combinatorics, II**

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

- Organizers: **Mourad E. H. Ismail**, University of South Florida  
**Stephen C. Milne**, The Ohio State University
- 8:00AM *Ramanujan and Cranks.*  
 (118) **Bruce C. Berndt**, University of Illinois at Urbana-Champaign (984-11-68)
- 8:30AM *Cranks and Dissections in Ramanujan's Lost Notebook.*  
 ► (119) **Bruce C Berndt**, University of Illinois at Urbana-Champaign, **Heng Huat Chan**, National University of Singapore, **Song Heng Chan\***, University of Illinois at Urbana-Champaign, and **Wen-Chin Liaw**, National Chung Cheng University (984-33-121)
- 9:00AM *Partition Identities and a Theorem of Zagier.*  
 (120) **Karl E Mahlburg\***, University of Wisconsin-Madison, and **Jayce Getz**, Harvard University (984-11-184)
- 9:30AM *A Combinatorial Proof of a Partition Identity of Andrews and Stanley.*  
 (121) **Andrew V Sills**, Penn State University (984-05-102)
- 10:00AM *New positivity preserving  $q$ -binomial transformations.*  
 (122) **Alexander Berkovich\***, University of Florida, and **Ole Warnaar**, University of Melbourne (984-11-210)
- 10:30AM Discussion

**Special Session on Stochastics, Quantization, and Segal-Bargmann Analysis, II**

8:30 AM – 10:50 AM Room 228, Tureaud Hall

- Organizers: **Bruce K. Driver**, University of California San Diego  
**Brian C. Hall**, University of Notre Dame  
**Jeffrey J. Mitchell**, Baylor University
- 8:30AM *Heat Semigroup dominations for manifolds with boundary.*  
 (123) **Elton P Hsu**, Northwestern University (984-60-240)
- 9:00AM *Discrete Loewner Evolution.*  
 (124) **Robert O Bauer**, University of Illinois at Urbana-Champaign (984-60-64)
- 9:30AM *A Rotationalary Picard Iteration for Flows Associated with Tangent Processes.*  
 (125) **Yaozhong Hu**, University of Kansas (984-60-120)
- 10:00AM *Stochastic Averaging or: How I Learned to Stop Worrying and Love PDE's.*  
 (126) **Richard B Sowers**, University of Illinois (984-60-126)
- 10:30AM *Stochastic differential equations on noncommutative  $L^2$ -spaces.*  
 (127) **Maria Gordina**, University of Connecticut (984-60-181)

**Special Session on The Role of Mathematics Departments in Secondary Education, I**

8:30 AM – 10:50 AM Room 116, Tureaud Hall

- Organizers: **James J. Madden**, Louisiana State University  
**Frank Neubrander**, Louisiana State University

- 8:30AM *Teachers' Mathematics and Mathematics Courses for High School Teachers.*  
 ► (128) **Zalman Usiskin**, The University of Chicago (984-97-183)
- 9:00AM *PROMYS for TEACHERS: Bringing the Spirit of Exploration to the Classroom.* Preliminary report.  
 ► (129) **Glenn H Stevens**, Boston University (984-97-243)
- 9:30AM *Advanced Mathematics Educational Support.*  
 (130) **Bill Hopkins**, The University of Texas at Austin (984-97-77)
- 10:00AM *Exploring Proportionality through Measurement and Geometry with Secondary Mathematics Education Majors.* Preliminary report.  
 (131) **Maribeth E Olberding**, New Mexico State University (984-97-214)
- 10:30AM *Maple Computing in the Undergraduate Curriculum.* Preliminary report.  
 ► (132) **Mylan Redfern**, University of Southern Mississippi (984-97-67)

**Special Session on Algebraic Number Theory and K-Theory, II**

8:45 AM – 10:50 AM Room 206, Tureaud Hall

Organizers: **Jurgen Hurrelbrink**, Louisiana State University  
**Jorge F. Morales**, Louisiana State University  
**Robert Osburn**, McMaster University

- 8:45AM *Exotic Steinberg Symbols on Number Fields.*  
 (133) **Kevin Hutchinson**, University College, Dublin (984-11-75)
- 9:30AM *A New Method for Computing Logarithmic Class Groups.* Preliminary report.  
 (134) **Florence Soriano-Gafiuk**, Université de Metz (984-19-231)
- 10:15AM *An Application of Algorithmic Methods from Number Theory to the Computation of Logarithmic Class Groups.* Preliminary report.  
 (135) **Michael E Pohst**, Technische Universität Berlin (984-11-223)

**Special Session on Arrangements in Topology and Algebraic Geometry, II**

9:00 AM – 10:50 AM Room 226, Tureaud Hall

Organizers: **Daniel C. Cohen**, Louisiana State University  
**Alexander I. Suciu**, Northeastern University

- 9:00AM *Cell structures for arrangements.* Preliminary report.  
 (136) **Richard Randell**, University of Iowa (984-57-225)
- 9:40AM *Completions of braid groups.* Preliminary report.  
 (137) **Kevin P Knudson**, Mississippi State University (984-20-132)
- 10:20AM *Chow groups on complements of arrangements; a first step.* Preliminary report.  
 (138) **Karl-Dieter S. Crisman**, University of Chicago (984-14-185)

**Invited Address**

11:05 AM – 11:55 AM Dodson Auditorium, Dodson

- (139) *Heat equations on loop groups.*  
**Bruce K. Driver**, University of California San Diego (984-60-02)

**Invited Address**

1:30 PM – 2:20 PM Dodson Auditorium, Dodson

- (140) *Evaluation representations, Drinfeld polynomials and Bethe's ansatz.*  
**Barry M. McCoy**, SUNY at Stony Brook (984-82-04)

**Special Session on Algebraic Number Theory and K-Theory, III**

2:30 PM – 5:20 PM Room 206, Tureaud Hall

Organizers: **Jurgen Hurrelbrink**, Louisiana State University  
**Jorge F. Morales**, Louisiana State University  
**Robert Osburn**, McMaster University

- 2:30PM *Cyclic polynomials and the multiplication matrices of their roots.*  
 ► (141) **Francisco Thaine**, Concordia University (984-11-40)
- 3:15PM *On the K-theory of elliptic curves.*  
 (142) **Kevin P Knudson**, Mississippi State University (984-19-107)
- 4:00PM *Elements of Prime Power Order in  $K_2\mathbb{Q}$ .* Preliminary report.  
 (143) **Hourong Qin\***, Nanjing, P. R. China, and **Qunsheng Zhu**, Nanjing, P.R.China (984-19-216)
- 4:45PM *Ambiguous ideal classes in metacyclic extensions.* Preliminary report.  
 (144) **Franz Lemmermeyer**, CSU San Marcos, CA (984-11-168)

**Special Session on Applied Mathematics and Materials Science, III**

2:30 PM – 5:20 PM Room 221, Tureaud Hall

Organizers: **Robert Lipton**, Louisiana State University  
**Stephen Shipman**, Louisiana State University  
**Blaise Bourdin**, Louisiana State University  
**Yuri Antipov**, Louisiana State University

- 2:30PM *A Direct Solution of an Integro-Differential Equation in Remote Sensing.*  
 (145) **Mohsen Razzaghi\*** and **Seth Oppenheimer**, Mississippi State University (984-41-18)
- 3:00PM *Boundary Correctors for Periodic Media.*  
 (146) **S Moskow\***, University of Florida, **M. Vogelius**, Rutgers University, and **E. Bonnetier**, Institut d'Informatique et Mathématiques Appliquées de Grenoble (984-35-229)
- 3:30PM *Wave propagation in structures from bistable elements.* Preliminary report.  
 ► (147) **Andrej Cherkaev\***, **Elena Cherkaev**, University of Utah, and **Leonid I Slepyan**, Tel Aviv University (984-74-194)
- 4:00PM *An adaptive method for coupled continuum-molecular simulation of crack propagation in solids.*  
 (148) **Sorin M Mitran**, University of North Carolina at Chapel Hill (984-70-70)

- 4:30PM *Systems of functional-difference equations in electromagnetic scattering theory.* (149)  
**Yuri A. Antipov\***, Department of Mathematics, Louisiana State University, and **Vassili V. Silvestrov**, Department of Mathematics, Chuvash State University (984-30-160)
- 5:00PM *Numerical Computation of Wave Propagation through Dynamic Materials.* (150)  
**Suzanne L. Weekes**, Worcester Polytechnic Institute (WPI) (984-65-131)

**Special Session on Arrangements in Topology and Algebraic Geometry, III**

2:30 PM – 5:00 PM Room 226, Tureaud Hall

Organizers: **Daniel C. Cohen**, Louisiana State University  
**Alexander I. Suciu**, Northeastern University

- 2:30PM *Seiberg-Witten invariants and surface singularities.* (151)  
**Andras Nemethi**, Ohio State University (984-14-192)
- 3:10PM *Modular transformations of the elliptic hypergeometric functions, Macdonald polynomials, and the shift operator.* (152)  
**Laura J. Stevens**, UNC Chapel Hill (984-33-251)
- 3:50PM *Mock reflection groups and blow-ups of real hyperplane arrangements.* (153)  
**Michael Davis**, The Ohio State University, **Tadeusz Januszkiewicz**, Wroclaw University, and **Richard A Scott\***, Santa Clara University (984-57-155)
- 4:30PM *Associahedra in Tori and Projective Spaces.* (154)  
**Satyan L Devadoss**, Williams College (984-14-49)

**Special Session on Commutative Ring Theory, III**

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

Organizers: **James B. Coykendall**, North Dakota State University  
**Bernadette Mullins**, Birmingham State College

- 2:30PM *Going-down Implies Generalized Going-down.* (155)  
**David E. Dobbs** and **Andrew J. Hetzel\***, The University of Tennessee (984-13-07)
- 3:00PM *On a field-theoretic invariant for extensions of commutative rings.* Preliminary report. (156)  
**David E. Dobbs\***, University of Tennessee, and **Bernadette Mullins**, Birmingham-Southern College (984-13-01)
- 3:30PM *Absolutely integral ring homomorphisms.* Preliminary report. (157)  
**Gabriel Picavet**, University B. Pascal (984-13-97)
- 4:00PM *Generating ideals in pullbacks.* Preliminary report. (158)  
**Evan Houston**, UNC Charlotte (984-13-65)
- 4:30PM *Seminormal Cohen-Kaplansky domains and diophantine equations.* Preliminary report. (159)  
**Martine Picavet-L'Hermitte\*** and **Abdallah Badra**, University B. Pascal (984-13-98)
- 5:00PM *Prime-Producing Polynomials II.* Preliminary report. (160)  
**Joe L. Mott\*** and **Kermit Rose**, Florida State University (984-11-270)

**Special Session on Frames, Wavelets, and Tomography, III**

2:30 PM – 5:20 PM Room 211, Tureaud Hall

Organizer: **Gestur Olafsson**, Louisiana State University

- 2:30PM *Complex analysis in some tomographic problems.* Preliminary report. (161)  
**Peter Kuchment\***, Texas A&M University, and **Leonid Kunyansky**, University of Arizona (984-44-138)
- 3:00PM *Physical wavelets and their extended-delta source distributions.* (162)  
**Gerald Kaiser**, Virginia Center for Signals and Waves (984-78-34)
- 3:30PM *Wavelet analysis of soliton solutions of nonlinear partial differential equations.* Preliminary report. (163)  
**Andrei Ludu**, Northwestern State University (984-43-198)
- 4:00PM *Practical and mathematical problems in Limited Data Tomography.* Preliminary report. (164)  
**Eric Todd Quinto**, Tufts University (984-92-37)
- 4:30PM *Orthogonal Frames of Translates.* Preliminary report. (165)  
**Eric S Weber**, University of Wyoming (984-42-100)
- 5:00PM *Applications to a unified theory of reproducing systems.* (166)  
**Guido Weiss**, Washington University, St. Louis (984-42-118)

**Special Session on Graphs and Matroids, III**

2:30 PM – 5:20 PM Room 213, Tureaud Hall

Organizers: **Bogdan S. Oporowski**, Louisiana State University  
**James G. Oxley**, Louisiana State University

- 2:30PM *The Strong Perfect Graph Theorem.* Preliminary report. (167)  
**M. Chudnovsky**, Princeton University, **N. Robertson**, Ohio State University, **P. Seymour**, Princeton University, and **R. Thomas\***, Georgia Institute of Technology (984-05-123)
- 3:30PM *Forbidden Subgraphs and Bounds on the Size of a Maximum Matching.* (168)  
**Michael D. Plummer\***, Vanderbilt University, and **Akira Saito**, Nihon University (984-05-136)
- 4:00PM *Cycle spectra in graphs.* (169)  
**Tristan MJ Denley**, University of Mississippi (984-05-232)
- 4:30PM *Generating  $r$ -regular graphs.* (170)  
**Guoli Ding\*** and **Peter Chen**, LSU (984-05-114)
- 5:00PM *Constructing Trees in Graphs whose Complement has no  $K_{2,s}$ .* (171)  
**Edward Dobson**, Mississippi State University (984-05-235)

**Special Session on Induced Representations: Connections to Graphs, Number Theory, Geometry, III**

2:30 PM – 5:15 PM Room 215, Tureaud Hall

Organizers: **J. William Hoffman**, Louisiana State University  
**Robert V. Perlis**, Louisiana State University  
**Neal W. Stoltzfus**, Louisiana State University

- 2:30PM *Cohomological Mackey functors and applications.* (172)  
**Robert Boltje**, University of California, Santa Cruz (984-18-150)
- 3:30PM *Geometric zeta functions for  $p$ -adic groups.* (173)  
**Anton H Deitmar**, University of EXETER (984-11-55)



4:30PM *On Ramanujan hypergraphs.*  
(174) **Wen-Ching Winnie Li**, Pennsylvania State University  
(984-22-149)

**Special Session on Low Dimensional Topology, III**

2:30 PM – 5:50 PM Room 225, Tureaud Hall

Organizers: **Oliver T. Dasbach**, Louisiana State University  
**Patrick M. Gilmer**, Louisiana State University  
**Richard A. Litherland**, Louisiana State University

2:30PM *On the colored Jones polynomial of twist knots.*  
(175) **Gregor Masbaum**, CNRS, Institut de Mathematiques de Jussieu (984-57-87)

3:00PM *Links with the same quantum invariants.*  
(176) Preliminary report.  
**Yongwu Rong**, George Washington University (984-57-189)

3:30PM *On the bridge number of knot diagrams with minimal crossings.*  
▶ (177) **Jae-Wook Chung\*** and **Xiao-Song Lin**, University of California, Riverside (984-57-187)

4:00PM *Zeros of the Jones Polynomial.* Preliminary report.  
▶ (178) **Xiao-Song Lin**, University of California, Riverside (984-57-169)

4:30PM *Generalized Blanchfield Linking Forms for Knots and 3-Manifolds.* Preliminary report.  
(179) **Connie Leidy**, Rice University (984-57-250)

5:00PM *Virtual Betti Numbers of 3-Manifolds.* Preliminary report.  
(180) **Tim D. Cochran\*** and **Joseph Masters**, Rice University (984-57-248)

5:30PM *Edge slopes for knots and links.*  
(181) **William Jaco**, Oklahoma State University (984-57-271)

**Special Session on Mathematical Techniques in Musical Analysis, III**

2:30 PM – 5:20 PM Room 120, Tureaud Hall

Organizers: **Judith L. Baxter**, University of Illinois at Chicago  
**Robert Peck**, Louisiana State University

2:30PM *Principles for Reducing LPR Sentences to Canonical Form.*  
(182) **Richard Cohn**, University of Chicago (984-43-112)

3:05PM *On Some Group-Presentational Conceptions of Tonality in the Nineteenth Century.*  
(183) **Edward Gollin**, Harvard University (984-20-148)

3:40PM *An Algebraic Classification of Contextually Defined Musical Inversions.*  
▶ (184) **Jonathan H Kochavi**, SUNY Buffalo (984-20-84)

4:15PM *Uniform Triadic Transformations: A Wreath Product in Music Theory.*  
▶ (185) **Julian L Hook**, Penn State University (984-20-61)

4:50PM *Notions of Equivalence and Similarity in Atonal Music Theory.*  
▶ (186) **Michael H. Buchler**, Florida State University (984-00-78)

**Special Session on Stochastic Analysis and Applications, III**

2:30 PM – 5:50 PM Room 220, Tureaud Hall

Organizers: **H.-H. Kuo**, Louisiana State University

**P. Sundar**, Louisiana State University

2:30PM *Topics in classical Fourier Analysis.*  
(187) **Mark A Pinsky**, Northwestern University (984-42-201)

3:30PM Discussion

4:30PM *Quantum Decomposition and Spectral Analysis of Large Graphs.*  
(188) **Nobuaki Obata**, Graduate School of Information Sciences, Tohoku University (984-60-215)

5:00PM *Splitting formula for the N-Schrödinger algebra and applications to Brownian motion on the Heisenberg group.*  
(189) **Philip Feinsilver\***, Southern Illinois University, and **Gyula Pap**, Lajos Kossuth University (984-60-228)

5:30PM Discussion

**Special Session on Stochastics, Quantization, and Segal-Bargmann Analysis, III**

2:30 PM – 4:50 PM Room 228, Tureaud Hall

Organizers: **Bruce K. Driver**, University of California San Diego  
**Brian C. Hall**, University of Notre Dame  
**Jeffrey J. Mitchell**, Baylor University

2:30PM *Coherent states and bounded cohomology.*  
(190) **Bent Ørsted**, IMADA, SDU, Denmark (984-22-80)

3:00PM *The Segal-Bargmann transform for certain non-compact symmetric spaces.* Preliminary report.  
(191) **Brian C. Hall\***, Notre Dame, and **Jeffrey J. Mitchell**, Baylor University (984-81-36)

3:30PM *The Segal-Bargmann transform on a symmetric space of non-compact type.* Preliminary report.  
(192) **Matthew B. Stenzel**, Ohio State University, Newark (984-58-167)

4:00PM *Segal-Bargmann transform of smooth functions on a compact group.*  
(193) **Brian C. Hall**, University of Notre Dame, and **Wicharn Lewkeeratiyutkul\***, Chulalongkorn University (984-22-106)

4:30PM *The Bargmann transform and regularization of the Kepler problem.*  
(194) **Carlos Villegas-Blas**, Universidad Nacional Autonoma de Mexico (984-81-92)

**Special Session on Asymptotic Analysis, Stability, and Generalized Functions, II**

2:30 PM – 5:20 PM Room 103, Tureaud Hall

Organizers: **Ricardo Estrada**, Louisiana State University  
**Frank Neubrander**, Louisiana State University  
**Gunter Lumer**, University of Mons-Hainaut

2:30PM *New interpretations of Boehmians.* Preliminary report.  
(195) **Jozef Burzyk**, Technical University of Silesia, and **Piotr Mikusinski\***, University of Central Florida (984-44-47)

3:00PM *Asymptotic Analysis and R-Boundedness.* Preliminary report.  
(196) **Lutz Weis**, Department of Mathematics, University of Karlsruhe, Germany (984-46-135)

3:30PM *Decovolution Problems and Number theory.* Preliminary report.  
(197) **Soon-Yeong Chung**, Professor/ Sogang University (Visiting Prof. of Un (984-42-130)

- 4:00PM *Infinite Infrared Regularization in Krein Spaces.*  
(198) **Andreas U. Schmidt**, Johann Wolfgang Goethe Universität, Frankfurt am Main, Germany (984-46-172)
- 4:30PM *On the regularization of time-discretization methods for evolution equations.* Preliminary report.  
(199) **Frank Neubrander**, Louisiana State University (984-65-213)
- 5:00PM *Admissibility of function spaces with respect to equation  $Bu'(t) = Au(t) + f(t)$ .*  
(200) **Lan Thanh Nguyen**, Western Kentucky University (984-34-19)

**Special Session on Q-Series in Number Theory and Combinatorics, III**

2:30 PM – 4:50 PM Room 210, Tureaud Hall

Organizers: **Mourad E. H. Ismail**, University of South Florida  
**Stephen C. Milne**, The Ohio State University

- 2:30PM *A generalized polygamma function.*  
(201) **Victor H Moll\***, Tulane University, and **Olivier Espinosa**, Universidad Santa Maria (984-33-35)
- 3:00PM *Reduction formulas for Karlsson-Minton type hypergeometric functions.*  
(202) **Hjalmar Rosengren**, Chalmers University, Sweden (984-33-147)
- 3:30PM *New formulas for Ramanujan's tau function and other classical cusp forms.* Preliminary report.  
(203) **Stephen C Milne**, The Ohio State University (984-11-264)
- 4:00PM *Four Identities Related to Third Order Mock Theta Functions in the Lost Notebook.*  
(204) **Hamza Yesilyurt**, University of Illinois at Urbana-Champaign (984-33-06)
- 4:30PM *Certain Consequences of  $BC_n$  Bailey Transform and Bailey Lemma.* Preliminary report.  
(205) **Hasan Coskun**, Texas A&M University (984-33-09)

**Special Session on The Role of Mathematics Departments in Secondary Education, II**

3:00 PM – 4:50 PM Room 116, Tureaud Hall

Organizers: **James J. Madden**, Louisiana State University  
**Frank Neubrander**, Louisiana State University

- 2:30PM Discussion
- 3:00PM *Or Vice Versa: The Role of Secondary Mathematics Teacher Education in a Mathematics Department.*  
(206) **Katherine Pedersen**, Southeastern Louisiana University (984-97-137)
- 3:30PM *Preparation and Professional Development of Secondary Education Teachers.*  
▶ (207) **Efraim P. Armendariz**, University of Texas at Austin (984-97-238)
- 4:00PM *Perceived Needs of Secondary Schools and Suggestions How to Meet Them.* Preliminary report.  
▶ (208) **Bernd S. W. Schroeder**, Louisiana Tech University (984-97-50)
- 4:30PM *Secondary School Teacher Preparation and K-12 Outreach Programs at the Louisiana State University Department of Mathematics.* Preliminary report.  
▶ (209) **James Madden\*** and **Frank Neubrander**, Louisiana State University (984-97-265)

**Session for Contributed Papers, II**

3:15 PM – 4:40 PM Room 218, Tureaud Hall

- 3:15PM *Effects of Non-normality in Tests for Random Walk Models.*  
(210) **Leslie Chandrakantha**, John Jay College/City University of New York (984-62-14)
- 3:30PM *"Follow The Valley Bottom" (FTVB). A faster special purpose algorithm minimizing generalized Rosenbrock - type functions.* Preliminary report.  
▶ (211) **Constantia Lambrinos**, University of New Mexico (984-65-10)
- 3:45PM *An Exact, Lightlike, Shock-Wave Solution of the Einstein Equations.*  
(212) **Michael B. Scott**, Kansas State University (984-83-30)
- 4:00PM *new methode for Measuring height of trees using geometry relationships.* Preliminary report.  
▶ (213) **Ramzan Ali Khorrami\***, Tehran University, and **Manoochehr Namiranian** (984-90-38)
- 4:15PM *An integer programming solution to the problem of optimally locating radioactive waste facilities.* Preliminary report.  
(214) **John Karlof**, University of North Carolina at Wilmington (984-90-195)
- 4:30PM *Some further notes on group decision-making in animals.* Preliminary report.  
▶ (215) **T Haller Jackson**, Shreveport, LA (984-92-234)

**Sunday, March 16**

**Special Session on Algebraic Number Theory and K-Theory, IV**

8:00 AM – 11:20 AM Room 206, Tureaud Hall

Organizers: **Jurgen Hurrelbrink**, Louisiana State University  
**Jorge F. Morales**, Louisiana State University  
**Robert Osburn**, McMaster University

- 8:00AM *Chinburg invariants and generalized quaternion groups.* Preliminary report.  
(216) **Jeff Hooper**, Acadia University (984-11-255)
- 9:00AM Break.
- 10:00AM *On k-Conjugacy Classes of Maximal Tori in Semi-Simple Algebraic Groups.*  
(217) **Uroyoan R Walker**, University of Puerto Rico at Mayagüez (984-11-175)
- 10:45AM *Wild primes in Hilbert symbol equivalent number fields.*  
(218) **Marius M Somodi**, University of Northern Iowa (984-11-16)

**Special Session on Applied Mathematics and Materials Science, IV**

8:00 AM – 8:25 AM Room 221, Tureaud Hall

Organizers: **Robert Lipton**, Louisiana State University  
**Stephen Shipman**, Louisiana State University  
**Blaise Bourdin**, Louisiana State University  
**Yuri Antipov**, Louisiana State University

- 8:00AM *Bounds on the distribution of extreme values for the stress in composite materials.*  
(219) **Robert P Lipton**, Louisiana State University (984-35-178)

**Special Session on Commutative Ring Theory, IV**

8:00 AM – 11:50 AM Room 203, Tureaud Hall

Organizers: **James B. Coykendall**, North Dakota State University  
**Bernadette Mullins**, Birmingham State College

- 8:00AM *Elasticities of Krull domains with divisor class group  $\mathbb{Z}_b$ .*  
(220) **Karl Kattchee**, University of Wisconsin-La Crosse (984-13-165)
- 8:30AM *On the Boundary Map and Overrings.*  
▶ (221) **Jack L Maney**, North Dakota State University (984-13-91)
- 9:00AM Break.
- 10:00AM *Arithmetic on Free Abelian Groups.*  
(222) **Clifford Steven Queen**, Lehigh University (984-13-151)
- 10:30AM *Maximal prime divisors in arithmetical rings.*  
(223) **Laszlo Fuchs**, Tulane University, **William Heinzer**, Purdue University, and **Bruce Olberding\***, New Mexico State University (984-13-119)
- 11:00AM *Rings between the Nagata ring and the Kronecker function ring of an integral domain.* Preliminary report.  
(224) **K Alan Loper\***, Ohio State University - Newark, and **Marco Fontana**, University of Rome III (984-13-143)
- 11:30AM *Adjoint Groups of Jacobson Radical Rings.*  
(225) **Henry E. Heatherly**, University of Louisiana at Lafayette (984-16-26)

**Special Session on Frames, Wavelets, and Tomography, IV**

8:00 AM – 11:20 AM Room 211, Tureaud Hall

Organizer: **Gestur Olafsson**, Louisiana State University

- 8:00AM *Operators associated to Generalized Filter Functions.* Preliminary report.  
(226) **Judith A. Packer**, University of Colorado, Boulder (984-46-101)
- 8:30AM *Coaffine systems in  $R^d$ .* Preliminary report.  
(227) **Brody Dylan Johnson**, Georgia Institute of Technology (984-42-256)
- 9:00AM Break.
- 10:00AM *Localization of Stability, Frame and Sampling in Fourier Domain.* Preliminary report.  
(228) **Qiyu Sun**, University of Houston (984-42-94)
- 10:30AM *Generalization of Frame Potentials (Preliminary Work).* Preliminary report.  
▶ (229) **John J Boncek**, University of Central Florida (984-43-222)
- 11:00AM *Ellipsoidal Tight Frames in Finite and Infinite Dimensional Hilbert Spaces.*  
(230) **Keri Kornelson\***, **Ken Dykema**, Texas A&M University, **Dan Freeman**, Guilford College, **David Larson**, Texas A&M Texas A&M University, **Marc Ordower**, Randolph Macon Woman's College, and **Eric Weber**, University of Wyoming (984-47-105)

**Special Session on Graphs and Matroids, IV**

8:00 AM – 11:50 AM Room 213, Tureaud Hall

Organizers: **Bogdan S. Oporowski**, Louisiana State University  
**James G. Oxley**, Louisiana State University

- 8:00AM *Disjoint paths in planar graphs.* Preliminary report.  
▶ (231) **Laura Sheppardson\*** and **Xingxing Yu**, Georgia Institute of Technology (984-05-182)
- 8:30AM *The existence of separating cycles in triangulations of the double torus.*  
(232) **Mark N. Ellingham**, **Dana L. Jennings\***, Vanderbilt University, and **Xiaoya Zha**, Middle Tennessee State University (984-05-24)
- 9:00AM Break.
- 10:00AM *Subsets of the sphere that uniquely embed in the sphere.*  
(233) **R. Bruce Richter\***, University of Waterloo, and **Carsten Thomassen**, Technical University of Denmark (984-57-157)
- 11:00AM *Trades and flexible graph embeddings.* Preliminary report.  
(234) **Mark N. Ellingham**, Vanderbilt University (984-05-158)
- 11:30AM *Book Embeddings.* Preliminary report.  
▶ (235) **Robin Leigh Blankenship\***, Louisiana State University, Baton Rouge, and **Bogdan Oporowski**, Louisiana State University (984-05-246)

**Special Session on Mathematical Techniques in Musical Analysis, IV**

8:00 AM – 11:45 AM Room 120, Tureaud Hall

Organizers: **Judith L. Baxter**, University of Illinois at Chicago  
**Robert Peck**, Louisiana State University

- 8:00AM *Music, Models, and the Relative Complexity of Analysis.* Preliminary report.  
▶ (236) **Richard R. Randall**, University of Rochester, Eastman School of Music (984-00-227)
- 8:30AM *Chord Quality and General Harmony.* Preliminary report.  
▶ (237) **Ian Quinn**, University of Chicago (984-00-208)
- 9:00AM Break.
- 10:00AM *Numbers and the Western Tone-System: Beyond Psychoacoustics.*  
▶ (238) **Eytan Agmon**, Bar-Ilan University, Israel (984-00-43)
- 10:40AM *Some Recent Developments in Mathematics Applied to Music Theory.*  
▶ (239) **John Rahn**, University of Washington, Seattle (984-01-166)
- 11:15AM *Aspects of Saturation and Ordering in Twelve-Tone Music.*  
▶ (240) **Robert D Morris** and **Ciro G Scotto\***, Eastman School of Music (984-20-174)

**Special Session on Asymptotic Analysis, Stability, and Generalized Functions, III**

8:00 AM – 11:50 AM Room 103, Tureaud Hall

Organizers: **Ricardo Estrada**, Louisiana State University  
**Frank Neubrander**, Louisiana State University

- Gunter Lumer**, University of Mons-Hainaut
- 8:00AM *Rayleigh's instability of thin rods with strong circumferential surface energy anisotropy.* (241) **Wanxi Kan** and **Harris Wong\***, LSU (984-35-163)
- 8:30AM *On the convergence of von Neumann stable methods.* (242) **Yu Zhuang**, Texas Tech University (984-46-39)
- 9:00AM Break.
- 10:00AM *Analysis for the functions  $f(x)$ ,  $\delta^{(n)}(x)$ ,  $1/r$ , and  $\psi(x) = \int_{\mathbb{R}^3} \frac{\phi(y)}{|x-y|} dy$ .* Preliminary report. (243) **Ram P Kanwal**, Pennsylvania State University (984-46-211)
- 10:30AM *Polynomial asymptotic stability of evolution equations.* Preliminary report. (244) **Andras Batkai**, Eötvös Lorand University Budapest, **Klaus-Jochen Engel**, University of L'Aquila, **Jan Prüss** and **Roland Schnaubelt\***, University of Halle (984-47-99)
- 11:00AM *Superstability: towards (full) depletion in finite or infinite time (or protection of resources).* Preliminary report. (245) **Guenter Lumer**, University of Mons-Hainaut (984-35-156)
- 11:30AM Discussion

**Special Session on Induced Representations: Connections to Graphs, Number Theory, Geometry, IV**

8:30 AM – 11:45 AM Room 215, Tureaud Hall

Organizers: **J. William Hoffman**, Louisiana State University  
**Robert V. Perlis**, Louisiana State University  
**Neal W. Stoltzfus**, Louisiana State University

- 8:30AM *Mackey functors and Sunada's theorem.* (246) **Benjamin Thomas Webster**, University of California, Berkeley (984-53-28)
- 9:00AM Break.
- 10:00AM *Zeta functions of infinite graphs.* (247) **Bryan F Clair**, Saint Louis University (984-11-164)
- 11:00AM *On arithmetically equivalent fields with distinct  $p$ -class numbers.* (248) **Bart de Smit**, Universiteit Leiden (984-11-247)

**Invited Address**

9:00 AM – 9:50 AM Room 103, Tureaud Hall

- (249) *Stability analysis, Paley-Wiener criteria, and related problems in materials science/ecology.* **Günter Lumer**, University of Mons-Hainaut (984-35-03)

**Special Session on Arrangements in Topology and Algebraic Geometry, IV**

10:00 AM – 11:50 AM Room 226, Tureaud Hall

Organizers: **Daniel C. Cohen**, Louisiana State University  
**Alexander I. Suciu**, Northeastern University

- 10:00AM *Gauss-Manin connections for arrangements.* (250) **Daniel C. Cohen**, Louisiana State University, and **Peter Orlik\***, University of Wisconsin-Madison (984-32-89)

- 10:40AM *Deformations of complexified real arrangements.* (251) **Kwai-Man Fan**, National Chung Cheng University (984-14-115)
- 11:20AM *Optimal trajectories for robots in the plane.* Preliminary report. (252) **Aaron D Abrams**, University of Georgia (984-51-253)

**Special Session on Low Dimensional Topology, IV**

10:00 AM – 11:50 AM Room 225, Tureaud Hall

Organizers: **Oliver T. Dasbach**, Louisiana State University  
**Patrick M. Gilmer**, Louisiana State University  
**Richard A. Litherland**, Louisiana State University

- 10:00AM *Epimorphisms of Knot Groups.* Preliminary report. (253) **Daniel S Silver\***, University of South Alabma, and **Wilbur Whitten**, Forest, VA (984-57-95)
- 10:30AM *Lifting representations of knot group commutator subgroups.* (254) **Daniel Silver** and **Susan Williams\***, University of South Alabama (984-57-88)
- 11:00AM *An algorithm to recognize Seifert fiber spaces.* (255) **Tao Li**, Oklahoma State University (984-57-176)
- 11:30AM *Variety of groups of knots.* Preliminary report. (256) **Mieczyslaw Dabkowski** and **Jozef H Przytycki\***, GWU (984-57-266)

**Special Session on Stochastics, Quantization, and Segal-Bargmann Analysis, IV**

10:00 AM – 11:50 AM Room 228, Tureaud Hall

Organizers: **Bruce K. Driver**, University of California San Diego  
**Brian C. Hall**, University of Notre Dame  
**Jeffrey J. Mitchell**, Baylor University

- 10:00AM *A discrete version of the Wigner-von Neumann potential.* Preliminary report. (257) **Stephen Bruce Sontz\***, Centro de Investigacion en Matematicas, A.C. (CIMAT), and **Jaime Cruz Sampedro**, Universidad Autonoma del Estado de Hidalgo (984-81-104)
- 10:30AM *On Hodge theory with a heat kernel weight.* Preliminary report. (258) **Ed Bueler**, University of Alaska, Fairbanks (984-58-171)
- 11:00AM *The Dirac Magnetic Charge Quantization Condition.* Preliminary report. (259) **Jeffrey J Mitchell**, Baylor University, and **Ambar N Sengupta\***, Louisiana State University (984-81-31)
- 11:30AM *The Gross isometry for homogeneous vector bundles.* (260) **Jeffrey J. Mitchell\***, Baylor University, and **Brian C. Hall**, University of Notre Dame (984-58-117)

**Special Session on The Role of Mathematics Departments in Secondary Education, III**

10:00 AM – 11:20 AM Room 116, Tureaud Hall

Organizers: **James J. Madden**, Louisiana State University  
**Frank Neubrander**, Louisiana State University

10:00AM *On a Master's program in Mathematics and*  
(261) *Teaching at Texas A&M University.*  
**Thomas Schlumprecht**, Texas A&M University  
(984-97-56)

10:30AM *Outreach to High School Mathematics at the*  
▶ (262) *University of Tennessee, A Preliminary Report.*  
Preliminary report.  
**Reid M Davis**, University of Tennessee  
(984-97-203)

11:00AM *Mathematics faculty assisting public schools in*  
▶ (263) *improving ACT mathematics scores.* Preliminary  
report.  
**Frank C Serio\*** and **Stan Chadick**, Northwestern St  
Univ of La (984-97-245)

**John L. Bryant**  
Associate Secretary  
Tallahassee, Florida