Program of the Sessions

Lafayette, Louisiana, April 14–16, 2000

Friday, April 14

Meeting Registration

12:30 PM – 5:00 PM **Room 315, Griffin Hall**

AMS Exhibit and Book Sale

12:30 PM – 5:00 PM **Room 315, Griffin Hall**

Welcoming and Opening Remarks

1:15 PM – 1:25 PM **Room 147, Griffin Hall**

Invited Address

1:25 PM – 2:15 PM **Room 147, Griffin Hall**

▶ (1) *Strings, duality, and geometry.*
Paul S. Aspinwall, Duke University (954-51-06)

Special Session on Rings and Their Generalizations, I

2:30 PM – 6:20 PM **Room 318, Griffin Hall**

Organizers: **Gary F. Birkenmeier**, University of Louisiana at Lafayette
Henry E. Heatherly, University of Louisiana at Lafayette

2:30PM (2) *Generalized centers of near-rings.*
Mark Farag, University of Louisiana at Lafayette (954-16-140)

3:00PM ▶ (3) *Left self distributively generated structural matrix rings.*
John A Lewallen, University of Louisiana at Lafayette (954-16-151)

3:30PM (4) *Distributive Elements of Centralizer Near-Rings.* Preliminary report.
Andrew M Diener, Texas A&M University (954-16-125)

4:00PM (5) *Adjoint Clifford Rings.* Preliminary report.
Ralph P Tucci*, Loyola U. New Orleans, and **Henry Heatherly**, University of Louisiana at Lafayette (954-16-59)

4:30PM (6) *M-injective modules and prime M-ideals.* Preliminary report.
John A. Beachy, Northern Illinois University (954-16-16)

5:00PM (7) *On annihilator ideals of a polynomial ring over a noncommutative ring.*
Yasuyuki Hirano, Okayama University (954-16-85)

5:30PM (8) *Maximal and Minimal Right Ideals in the Nearring of Polynomials.* Preliminary report.
Alan Cannon and **Lucyna Kabza***, Southeastern Louisiana University (954-16-172)

6:00PM (9) *Group Homomorphism Generated Near-rings and Rings.*
Gregory M Boudreaux, University of Louisiana at Lafayette (954-16-204)

Special Session on Mathematical Models in the Biological and Physical Sciences, I

2:30 PM – 5:50 PM **Room 401, Griffin Hall**

Organizers: **Azmy S. Ackleh**, University of Louisiana at Lafayette
Lan Ke, University of Louisiana at Lafayette
Robert D. Sidman, University of Louisiana at Lafayette

2:30PM (10) *Quantifying Uncertainty in Parameter Estimation Problems.*
H. T. Banks, North Carolina State University (954-49-144)

3:00PM (11) *Global Dynamics of Some Matrix Models with Applications to Optimal Life Cycle Strategies.* Preliminary report.
Jim M Cushing, University of Arizona (954-92-139)

3:30PM (12) *Multiple Attractors and Resonance in Periodically Forced Population Models.*
Shandelle M Henson, College of William and Mary (954-92-157)

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 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.

4:00PM ▶ (13) *The Dynamics of Two Viral Infections Within a Single Host Population.* Preliminary report.
Linda J.S. Allen*, Texas Tech University, and **Michel Langlais**, Universite Bordeaux II (954-34-135)

4:30PM (14) *A Dynamical Systems Approach to Cardiac Arrhythmias. II.*
Mitch Baker, US Naval Academy (954-92-67)

5:00PM (15) *Existence-Uniqueness and Long Time Behavior for a Class of Nonlocal Nonlinear Parabolic Evolution Equations.*
Azmy S Ackleh and **Lan Ke***, University of Louisiana at Lafayette (954-35-186)

5:30PM (16) *Dynamics of AIDS Models with Differential Infectivity and Stage Progression.* Preliminary report.
Jia Li, Department of Mathematical Sciences, University of Alabama in Huntsville (954-92-56)

Special Session on Nonlinear Differential Equations and Their Applications, I

2:30 PM – 5:50 PM **Room 205, Griffin Hall**

Organizers: **C. Y. Chan**, University of Louisiana at Lafayette
Keng Deng, University of Louisiana at Lafayette
A. S. Vatsala, University of Louisiana at Lafayette

2:30PM ▶ (17) *Nonlinear elliptic eigenvalue problems with discontinuities.*
Shouchuan Hu, Southwest Missouri State University (954-35-201)

3:00PM (18) *Qualitative Behavior of Solutions of Chemotactic Diffusion Systems.*
Xuefeng Wang, Tulane University (954-35-160)

3:30PM (19) *Recent progress on free boundary problems modeling cell growth.*
Bei Hu, University of Notre Dame (954-35-99)

4:00PM (20) *Multivariate Interpolation in Fluid-Structure-Interaction Using Radial Basis Function.*
Holger Wendland, Institut fuer Numerische und Angewandte Mathematik (954-35-97)

4:30PM (21) *An Efficient Meshless method for Nonlinear Diffusion Equations.*
Michael A Golberg, Las Vegas, Nevada, and **C.S. Chen***, University of Nevada, Las Vegas (954-35-74)

5:00PM ▶ (22) *Solving Multi-layer Hydrodynamic Equations by Radial Basis Functions Method.* Preliminary report.
S.M. Wong*, Open University of Hong Kong, and **Y.C Hon**, City University of Hong Kong (954-35-152)

5:30PM (23) *Radial Basis Function Collocation: The Nonsymmetric Approach.*
Gregory E Fasshauer, Illinois Institute of Technology (954-65-53)

Special Session on Scientific Computing, I

2:30 PM – 4:20 PM **Room 402, Griffin Hall**

Organizers: **R. Baker Kearfott**, University of Louisiana at Lafayette
Qin Sheng, University of Louisiana at Lafayette
Christo Christov, University of Louisiana at Lafayette

2:30PM ▶ (24) *Precise numerical solution of partial derivative problems.* Preliminary report.
Oliver Aberth, Texas A & M University (954-35-124)

3:00PM (25) *The Role of Operator Symbols in Classical Elliptic Wave Propagation.*
Louis Fishman, Naval Research Laboratory/University of New Orleans (954-35-23)

3:30PM (26) *Fourier-Galerkin Method for Localized Solutions of Equations with Cubic Nonlinearity.*
Marios Christou* and **Christo I Christov**, Department of Mathematics, University of Louisiana at Lafayette (954-65-38)

4:00PM (27) *Computational Aspect of Adaptive Signal Processing.*
William W Edmonson*, **Scott McCullough** and **Murali Rao**, University of Florida (954-94-165)

Special Session on Quantum Topology, I

2:30 PM – 5:45 PM **Room 321, Griffin Hall**

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

2:30PM ▶ (28) *Quandle Homology Classes and Abstract Knot Diagrams.*
J. Scott Carter*, University of South Alabama, **Daniel Jelsovsky**, University of South Florida, **Seiichi Kamada**, Osaka City University, and **Masahico Saito**, University of South Florida (954-55-122)

3:30PM (29) *Chern-Simons Theory, Spin and Framed Three-Manifolds, and the Conjectures of Dijkgraaf and Witten.*
Stephen F Sawin, Fairfield University (954-81-111)

4:30PM (30) *Are the Reshetikhin-Turaev-Witten invariants determining the holonomy map of a hyperbolic 3-manifold?* Preliminary report.
Jozef H Przytycki, George Washington University (954-57-96)

5:00PM (31) *Quantum Link Invariants and Oriented Quantum Algebras.* Preliminary report.
Louis H Kauffman, University Of Illinois at Chicago (954-57-180)

Special Session on Continuum Theory, I

2:30 PM – 5:50 PM **Room 301, Griffin Hall**

Organizer: **Thelma R. West**, University of Louisiana at Lafayette

2:30PM (32) *Variation and uniqueness of outchannels.* Preliminary report.
John C Mayer, University of Alabama at Birmingham (954-54-159)

3:00PM (33) *Hyperspaces homeomorphic to cones.* Preliminary report.
Maria de Jesus Lopez, Fac. de Ciencias, UNAM, Mexico (954-54-175)

3:30PM (34) *The fixed point property for cones and product spaces.* Preliminary report.
Marcus M Marsh, California State University, Sacramento (954-54-131)

4:00PM (35) *Some problems on hyperspace determined continua.*
Janusz J Charatonik, IMATE, UNAM, Mexico (954-54-91)

4:30PM (36) *Asymmetric span of continua.* Preliminary report.
Fernando Macías-Romero, B. Universidad Autónoma de Puebla, México (954-54-163)

5:00PM (37) *The Property A/ on Dendroids.*
Veronica Martínez-de-la-Vega, Instituto de Matemáticas, UNAM. Mexico. (954-54-92)

5:30PM ▶ (38) *On confluent maps of the plane.* Preliminary report.
Lex G Oversteegen, UAB (954-54-106)

Special Session on Recent Advances in Statistics

2:30 PM – 5:20 PM **Room 403, Griffin Hall**

Organizers: **Calvin Berry**, University of Louisiana at Lafayette
Kalimuthu Krishnamoorthy, University of Louisiana at Lafayette
Nabendu Pal, University of Louisiana at Lafayette

2:30PM (39) *A fundamental difficulty in estimating the distributions of post-model-selection estimators.* Preliminary report.
Hannes Leeb and **Benedikt M Poetscher***, Department of Statistics, University of Vienna (954-62-40)

3:00PM (40) *Performance of the Parametric Bootstrap Method in Small Sample Interval Estimates.*
Kalimuthu Krishnamoorthy*, Univeristy of Louisiana at Lafayette, and **Denise F Benton**, U of L at Lafayette (954-62-197)

3:30PM (41) *VAR Measurement of the Risk in Stochastic Frontier Semiparametric Model.*
Hengqing Tong, Wuhan University of Technology (954-62-31)

4:00PM (42) *Estimation of the smaller and larger of two exponential scale parameters.*
Nabendu Pal* and **Alvard Arazyan**, University of Louisiana at Lafayette (954-62-202)

4:30PM (43) *Application of Volterra-Wiener Functional Series with Random-Point Basis Function to Nonlinear Stochastic Problems and Turbulence.* Preliminary report.
Christo I Christov, Department of Mathematics, University of Louisiana at Lafayette (954-60-47)

5:00PM ▶ (44) *On The Existence of a Modal Category.*
J. Calvin Berry, University of Louisiana at Lafayette, Lafayette, LA (954-62-156)

Special Session on Fluid Dynamics, I

2:30 PM – 4:50 PM **Room 404, Griffin Hall**

Organizer: **Michael Renardy**, Virginia Polytechnic Institute & State University

2:30PM (45) *On the existence of finger solutions in Hele-Shaw Equation.*
Jianzhong Su, University of Texas at Arlington (954-35-09)

3:00PM (46) *Reconstruction of the Velocity from the Vorticity.*
Giles Auchmuty, University of Houston (954-76-11)

3:30PM (47) *Numerical simulations of two-fluid flows of viscous immiscible liquids.*
Yuriko Renardy* and **Jie Li**, Virginia Tech (954-76-33)

4:00PM (48) *The Onset of Chaos in Vortex Sheet Roll-Up.* Preliminary report.
Robert Krasny*, University of Michigan, and **Monika Nitsche**, University of New Mexico (954-76-43)

4:30PM (49) *Solitary-Wave Solutions of Systems of Equations.*
Jerry L Bona*, University of Texas at Austin, and **Hongqiu Chen**, City University of New York (954-76-45)

Special Session on Graph Theory, I

2:30 PM – 5:20 PM **Room 215, Griffin Hall**

Organizers: **Robin Thomas**, Georgia Institute of Technology
Dhruv Mubayi, Georgia Institute of Technology

2:30PM (50) *Some exact results and new asymptotics for hypergraph Turan numbers.*
Dhruv Mubayi, Georgia Tech (954-05-95)

3:00PM ▶ (51) *Graphs with small Ramsey numbers.* Preliminary report.
Alexandr V Kostochka*, University of Illinois at Urbana-Champaign, and **Vojtech Rödl**, Emory University (954-05-81)

3:30PM (52) *Equivalent Conditions of Regularity.*
Yoshiharu Kohayakawa, University of Sao Paulo, **Vojtech Rodl** and **Jozef Skokan***, Emory University (954-05-51)

4:00PM (53) *Two Extremal Problems for Set Systems.*
Brendan T Nagle, Georgia Institute of Technology (954-05-190)

4:30PM (54) *Ramsey Numbers for Trees of Small Maximum Degree.*
Penny E Haxell, University of Waterloo (954-05-183)

5:00PM ▶ (55) *Graphs without C_6.*
Zoltan Furedi, University of Illinois at Urbana-Champaign (954-05-179)

Saturday, April 15

Meeting Registration

7:30 AM – 5:00 PM **Room 315, Griffin Hall**

AMS Exhibit and Book Sale

7:30 AM – 5:00 PM **Room 315, Griffin Hall**

Special Session on Rings and Their Generalizations, II

8:30 AM – 10:50 AM **Room 318, Griffin Hall**

Organizers: **Gary F. Birkenmeier**, University of Louisiana at Lafayette
Henry E. Heatherly, University of Louisiana at Lafayette

8:30AM (56) *Equations over modules.* Preliminary report.
John Dauns, Tulane University (954-16-68)

9:00AM (57) *Some results about projection idempotents in endomorphism nearrings.* Preliminary report.
Gary L Peterson, James Madison University (954-16-120)

9:30AM (58) *Generalized Triangular Matrix Rings and the Fully Invariant Extending Property.*
Gary F Birkenmeier, Department of Mathematics, University of Louisiana at Lafayette, **Jae Keol Park***, Department of Mathematics, Busan National University, and **S. Tariq Rizvi**, Department of Mathematics, Ohio State University at Lima (954-16-169)

10:00AM (59) *Forcing Linearity Number of a Module.*
Carlton J Maxson, Texas A&M University (954-16-41)

10:30AM (60) *Rings, near-rings, and dynamical systems.*
Gunter F Pilz, Univ. of Linz, Austria (954-16-75)

Special Session on Mathematical Models in the Biological and Physical Sciences, II

8:30 AM – 10:50 AM **Room 401, Griffin Hall**

Organizers: **Azmy S. Ackleh**, University of Louisiana at Lafayette
Lan Ke, University of Louisiana at Lafayette

Robert D. Sidman, University of Louisiana at Lafayette

8:30AM (61) *Approximation Theory for Parameter Identification in Nonlinear Nonlocal Evolution Equations.*
Azmy S Ackleh*, University of Louisiana at Lafayette, **Sergiu Aizicovici**, Ohio University, and **Simeon Reich**, The Technion-Israel Institute of Technology (954-65-126)

9:00AM (62) *Spectral Collocation Approximations for Optimal Control Problems.*
Fariba Fahroo* and **Isaac M Ross**, Naval Postgraduate School (954-49-127)

9:30AM (63) *Optimal Location of Sensors and Actuators for Control of Distributed Parameter Systems.*
Michael A Demetriou, Worcester Polytechnic Institute (954-49-117)

10:00AM (64) *Set valued pseudomonotone operators and some applications.*
Kenneth L Kuttler, Brigham Young University (954-35-58)

10:30AM (65) *A Regularized Long Wave-KP Model.*
Michael M Tom, Louisiana State University (954-35-105)

Special Session on Nonlinear Differential Equations and Their Applications, II

8:30 AM – 10:50 AM **Room 205, Griffin Hall**

Organizers: **C. Y. Chan**, University of Louisiana at Lafayette
Keng Deng, University of Louisiana at Lafayette
A. S. Vatsala, University of Louisiana at Lafayette

8:30AM (66) *A Singular Perturbation Problem of Carrier and Pearson.*
Walter G Kelley, University of Oklahoma (954-34-08)

9:00AM (67) *Existence theory for a class of abstract nonlinear nonlocal integrodifferential equations in Banach spaces.* Preliminary report.
Mark A McKibben, Goucher College (954-34-07)

9:30AM (68) *Generalized Quasilinearization Applied to First Order Difference Equations.*
Donna S Stutson, Xavier University in Louisiana (954-34-178)

10:00AM (69) *Stability analysis of nonlinear differential equations in abstract spaces under Markovian structural perturbations.*
G. S. Ladde, University of Texas at Arlington (954-34-22)

10:30AM (70) *A Class of Singular Nonlinear Boundary Value Problems.*
John V Baxley* and **Kristina P Sorrells**, Wake Forest University (954-34-205)

Special Session on Scientific Computing, II

8:30 AM – 10:20 AM **Room 402, Griffin Hall**

Organizers: **R. Baker Kearfott**, University of Louisiana at Lafayette
Qin Sheng, University of Louisiana at Lafayette
Christo Christov, University of Louisiana at Lafayette

8:30AM ▶ (71) *Parallel Implementations of GlobSol - A Globle Optimization Software Package.* Preliminary report.
Chenyi Hu*, Univ. of Houston-Downtown, and **Baker R Kearfott**, University of Louisiana (954-68-171)

9:00AM (72) *Efficient Verification of the Topological Index of Real Solutions to Algebraic Systems.*
Jianwei Dian and **Baker Kearfott***, University of Louisiana at Lafayette (954-65-70)

9:30AM (73) *Properties, Decompositions and Applications of Generalized Reflexive Matrices.*
Hsin-Chu Chen, Clark Atlanta University (954-15-100)

10:00AM (74) *The Calculus, TELSTAR, ROCKLAND, and the Continuing mRL(e)**2 Neglect on Computational Processing.* Preliminary report.
Odessa K. Burgees, C.F.C.T.E. Foundation (954-01-35)

Special Session on Quantum Topology, II

8:30 AM – 10:50 AM **Room 321, Griffin Hall**

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

8:30AM (75) *Braid conjugation in handlebodies, knot complements and 3-manifolds.* Preliminary report.
Sofia Lambropoulou, Mathematisches Institut, Goettingen Universitaet (954-57-198)

9:30AM (76) *Strong Shift Equivalence and Diffeomorphisms.* Preliminary report.
Jack Wagoner, UC Berkeley (954-81-63)

10:30AM (77) *Knots, Links and Symbolic Dynamical Systems.* Preliminary report.
Daniel S Silver* and **Susan G Williams**, University of South Alabama (954-57-168)

Special Session on Continuum Theory, II

8:30 AM – 10:50 AM **Room 301, Griffin Hall**

Organizer: **Thelma R. West**, University of Louisiana at Lafayette

8:30AM (78) *AANR spaces and absolute retracts for tree-like continua.* Preliminary report.
Janusz R. Prajs*, Texas Tech University, Lubbock, TX, and **Janusz J. Charatonik**, UNAM, Mexico City, Mexico (954-54-113)

9:00AM (79) *Continua whose homeomorphism groups are generated by small neighborhoods of the identity.* Preliminary report.
Wayne Lewis, Texas Tech University (954-54-57)

9:30AM (80) *On the nonexistence of almost continuous surjections between certain continua.*
Sam B Nadler, Jr., West Virginia University (954-54-104)

10:00AM (81) *An aspect of homogeneous spaces.*
James T Rogers, Jr., Tulane University (954-54-110)

10:30AM ▶ (82) *A classification of brain tumors and solids by trees.* Preliminary report.
Taeil Yi*, university of florida at gainesville, fl, and **Matthew Harvey**, University of florida at gainesville (954-51-195)

Special Session on Fluid Dynamics, II

8:30 AM – 10:50 AM **Room 404, Griffin Hall**

Organizer: **Michael Renardy**, Virginia Polytechnic Institute & State University

8:30AM (83) *On a stochastic hyerbolic system.*
Jong U Kim, Virginia Tech (954-35-48)

9:00AM (84) *Dynamics of 2D Buoyant-Convective Flow in a Vertically Stratified Slot in the Presence of Gravity Modulations.*
Christo I Christov*, University of Louisiana at Lafayette, and **George M Homsy**, Stanford University (954-76-49)

9:30AM (85) *Instabilities and Spatio-Temporal Chaos of Hexagon Patterns with Rotation.*
Hermann Riecke*, **Blas Echebarria**, **Vadim Moroz** and **Filip Sain**, Northwestern University (954-76-90)

10:00AM (86) *Three-Dimensional Waves on Water with Large Surface Tension.* Preliminary report.
Shu-Ming Sun, Virginia Tech (954-76-167)

10:30AM (87) *Vacuum States and Global Stability of Rarefaction Waves for Compressible Flow.*
Gui-Qiang G Chen, Northwestern University (954-76-177)

Special Session on Graph Theory, II

8:30 AM – 10:50 AM **Room 215, Griffin Hall**

Organizers: **Robin Thomas**, Georgia Institute of Technology
Dhruv Mubayi, Georgia Institute of Technology

8:30AM (88) *Partitioning Vertices of a Tournament into Independent Cycles.*
Guantao Chen, Georgia State University, **Ronald J Gould***, Emory University, and **Li Hao**, Universite Paris-Sud (954-05-29)

9:00AM (89) *Long cycles in 3-connected graphs.*
Xingxing Yu*, Georgia Tech, and **Guantao Chen**, Georgia State Univ. (954-05-158)

9:30AM (90) *Packing cycles in graphs.*
Guoli Ding*, LSU, and **Wenan Zang**, HongKang (954-05-154)

10:00AM ▶ (91) *Recent Progress on Computing the Crossing Number of $C_m \times C_n$.*
Jay Adamsson, Ottawa, Ontario, and **R. Bruce Richter***, University of Waterloo (954-05-155)

10:30AM (92) *Antidirected Hamiltonian Paths Between Specified Vertices of a Tournament.*
Pavol Hell*, Simon Fraser University, and **Moshe Rosenfeld**, Pacific Lutheran University (954-05-102)

Invited Address

11:00 AM – 11:50 AM **Room 147, Griffin Hall**

▶ (93) *Generalizing the Four-Color Theorem.*
Robin Thomas, Georgia Institute of Technology (954-05-05)

Invited Address

1:25 PM – 2:15 PM **Room 147, Griffin Hall**

(94) *The spectral problem for linear stability of viscoelastic shear flows.*
Michael Renardy, Virginia Polytech Institute and State University (954-76-32)

Special Session on Rings and Their Generalizations, III

2:30 PM – 5:50 PM **Room 318, Griffin Hall**

Organizers: **Gary F. Birkenmeier**, University of Louisiana at Lafayette
Henry E. Heatherly, University of Louisiana at Lafayette

2:30PM (95) *Matrix Near-Rings.*
Kirby C Smith, Texas A&M University (954-16-77)

3:00PM (96) *Polynomial rings and approximations of Koethe's problem.*
Edmund R Puczylowski, University of Warsaw (954-16-86)

3:30PM (97) *Two Dimensional Nilpotent Topological Nearrings.* Preliminary report.
Kenneth D. Magill, Jr., SUNY at Buffalo (954-16-30)

4:00PM (98) *Semiprime pm-rings - Preliminary Report.* Preliminary report.
Efraim P. Armendariz, University of Texas at Austin (954-16-88)

4:30PM ▶ (99) *Polynomial functions on Ω-groups.*
Erhard Aichinger, Johannes Kepler University Linz Austria (954-16-66)

5:00PM (100) *Endomorphism Rings of Modules.*
Ulrich F Albrecht, Auburn Univresity (954-18-36)

5:30PM (101) *Baer-type Conditions on Polynomials and Formal Power Series.*
Feng-Kuo Huang* and **Gary F Birkenmeier**, Department of Mathematics, University of Louisiana at Lafayette (954-16-137)

Special Session on Mathematical Models in the Biological and Physical Sciences, III

2:30 PM – 5:20 PM **Room 401, Griffin Hall**

Organizers: **Azmy S. Ackleh**, University of Louisiana at Lafayette
Lan Ke, University of Louisiana at Lafayette
Robert D. Sidman, University of Louisiana at Lafayette

2:30PM (102) *Breakdown of strong convergence in nonlinear viscoelasticity.* Preliminary report.
Mikhail M Shvartsman, University of St. Thomas (954-35-101)

3:00PM ▶ (103) *Symmetry Analysis of a Higher Order Diffusion Equation.*
Danny Arrigo, University of Central Arkansas (954-35-136)

3:30PM (104) *Modeling Bird Population in Southern Oklahoma.*
Robert R Ferdinand* and **Michael D Bay**, East Central University, Ada, OK, U.S.A. (954-35-50)

4:00PM ▶ (105) *Combining Techniques to Model the Human Brain: From Mathematics to Magnets and Back Again.* Preliminary report.
Diana J. Vincent, Medical University of South Carolina (954-92-174)

4:30PM (106) *A strategy for analyzing co-registered EEG electroencephalographic) and MRI (magnetic resonance imaging) data.*
Robert D Sidman*, **C.H. Chu** and **Marie Erie**, University of Louisiana at Lafayette (954-92-61)

5:00PM ▶ (107) *Mathematical Models of Respiratory Function.* Preliminary report.
Sanjukta Hota, Assistant Professor, Fisk University, Nashville, TN (954-92-52)

Special Session on Nonlinear Differential Equations and Their Applications, III

2:30 PM – 5:50 PM **Room 205, Griffin Hall**

Organizers: **C. Y. Chan**, University of Louisiana at Lafayette
Keng Deng, University of Louisiana at Lafayette
A. S. Vatsala, University of Louisiana at Lafayette

2:30PM (108) *On The Generalization of the Courant Nodal Domain Theorem.*
Stephen B Robinson*, Wake Forest University, and **Pavel Drabek**, University of West Bohemia (954-35-194)

3:00PM (109) *Location of quenching points for degenerate semilinear parabolic equations.*
Chiu-yeung Chan, Department of Mathematics, University of Louisiana at Lafayette, and **Hon-hung Terence Liu***, Department of Applied Mathematics, Tatung University (954-35-108)

3:30PM (110) *Complete Blow-up of Solutions for Degenerate Semilinear Parabolic Equations.*
C. Y. Chan, University of Louisiana at Lafayette, and **W. Y. Chan***, University of Science and Arts of Oklahoma (954-35-76)

4:00PM (111) *Blow-up of the solution for a degenerate semilinear parabolic problem due to a concentrated source.* Preliminary report.
C. Y. Chan and **Haiyan Tian***, Univ. of Louisiana at Lafayette (954-35-132)

4:30PM (112) *Finite time extinction in nonlinear diffusion models with absorption and convection.* Preliminary report.
Jeffrey R Anderson, Winona State University (954-35-87)

5:00PM (113) *Blow-Up of Solutions of Some Semilinear Hyperbolic Systems and Parabolic Systems.*
Jianmin K Zhu, Fort Valley State University (954-35-107)

5:30PM (114) *Blow-up versus quenching.*
Keng Deng and **Cheng-Lin Zhao***, University of Louisiana at Lafayette (954-35-191)

Special Session on Scientific Computing, III

2:30 PM – 4:50 PM **Room 402, Griffin Hall**

Organizers: **R. Baker Kearfott**, University of Louisiana at Lafayette
Qin Sheng, University of Louisiana at Lafayette
Christo Christov, University of Louisiana at Lafayette

2:30PM (115) *A parallel Monte Carlo method for computing physical measures.*
Jiu Ding* and **Zizhong Wang**, University of Southern Mississippi (954-65-24)

3:00PM (116) *Singular Integral Equations and their Numerical Analysis.* Preliminary report.
Xuefeng Li, Mathematics and Computer Science, Loyola University (954-65-121)

3:30PM (117) *A Moving Grid Approach to Degenerate Semilinear Parabolic Equations with Singular Source Terms.*
Qin Sheng and **Hong Cheng***, University of Louisiana (954-65-42)

4:00PM (118) *Slope Sets and Generalized Gradients.*
Baker Kearfott and **Humberto Munoz***, University of Louisiana at Lafayette (954-65-34)

4:30PM (119) *On the penalty finite element approximations of the power-law Stokes flows.* Preliminary report.
Dongming Wei, University of New Orleans (954-76-164)

Special Session on Quantum Topology, III

2:30 PM – 5:50 PM **Room 321, Griffin Hall**

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

2:30PM (120) *The Torelli Group at Roots of Unity.* Preliminary report.
Thomas Kerler, The Ohio State University (954-57-141)

3:00PM (121) *A new theory of "finite type" invariants for 3-manifolds.* Preliminary report.
Jerome P Levine, Brandeis University (954-57-133)

3:30PM (122) *The Yang-Mills Measure in the Kauffman bracket skein module.*
Doug Bullock, Boise State University, **Charlie Frohman***, University of Iowa, and **Joanna Kania-Bartoszynska**, Boise State University (954-57-118)

4:30PM (123) *An analytic definition of the Yang-Mills measure.*
Douglas Bullock, **Charlie Frohman** and **Joanna Kania-Bartoszynska***, Boise State University (954-57-119)

5:30PM (124) *On the Homflypt skein module of $S^1 \times S^2$.* Preliminary report.
Jianyuan Zhong* and **Patrick M Gilmer**, Louisiana State University (954-57-78)

Special Session on Continuum Theory, III

2:30 PM – 5:50 PM **Room 301, Griffin Hall**

Organizer: **Thelma R. West**, University of Louisiana at Lafayette

2:30PM (125) *A continuum Z such that the hyperspace C(Z) is not g-contractible.*
Alejandro Illanes, Universidad Nacional Autonoma de Mexico (954-54-109)

3:00PM (126) *The generic homeomorphism is complicated, but not chaotic.*
Ethan Akin, City College, **Michael G Hurley**, Case Western Reserve University, and **Judy A Kennedy***, University of Delaware (954-54-103)

3:30PM (127) *A continuous decomposition of the plane into nondegenerate acyclic continua each of which contains an arc.* Preliminary report.
Carl R Seaquist, Texas Tech University (954-54-153)

4:00PM (128) *Components and Quasicomponents in Subspaces of Continua.*
Bobby E Wilder and **Eric L McDowell***, Berry College (954-54-170)

4:30PM (129) *Peano Mappings.* Preliminary report.
Raul Escobedo, Universidad Autonoma de Puebla, Mexico (954-54-176)

5:00PM ► (130) *Irreducible continua of type λ with almost unique hyperspace.* Preliminary report.
Gerardo Acosta, Universidad Nacional Autónoma de México (954-06-46)

5:30PM (131) *Retractions between hyperspaces.*
Sergio Macías, Instituto de Matemáticas, U. N. A. M. (954-54-25)

Special Session on Fluid Dynamics, III

2:30 PM – 4:50 PM **Room 404, Griffin Hall**

Organizer: **Michael Renardy**, Virginia Polytechnic Institute & State University

2:30PM (132) *Traveling Waves in Thin Film Flow.*
Michael Shearer, NC State University (954-35-184)

3:00PM (133) *Two problems for the Navier-Stokes equations having moving boundaries.*
Max D Gunzburger, Iowa State University (954-76-185)

3:30PM (134) *Scalar Intermittency in Shear Models and the Rigorous Calculation of a PDF Tail.*
Richard M McLaughlin*, UNC Chapel Hill, and **Jared C Bronski**, University of Illinois (954-76-187)

4:00PM ► (135) *Proving Existence of Transonic Shocks Using Free Boundary Problems Technique s.*
Suncica Canic*, **Barbara L Keyfitz**, University of Houston, and **Gary Lieberman**, Iowa State University (954-35-188)

4:30PM (136) *Flows of liquid crystalline polymers.*
Greg Forest, University of North Carolina at Chapel Hill (954-76-200)

Special Session on L-functions, Periods, and Arithmetic, I

2:30 PM – 4:50 PM **Room 405, Griffin Hall**

Organizers: **Fernando Rodriguez Villegas**, University of Texas at Austin
Jeff Vaaler, University of Texas at Austin

2:30PM (137) *Mahler's measure of A-polynomials and special values of Dirichlet L-functions.* Preliminary report.
David W Boyd, University of British Columbia (954-11-199)

3:00PM ▶ (138) *The analytic non class-number formula.*
Robert V Perlis, NSF and LSU (954-11-13)

3:30PM (139) *Jacobi Sums.*
Paul B van Wamelen, Louisiana State University (954-11-20)

4:00PM (140) *On the tame kernel of number fields.* Preliminary report.
Jurgen H Hurrelbrink, Louisiana State University (954-11-28)

4:30PM (141) *Stark's Conjecture over Complex Cubic Number Fields.*
David S Dummit, University of Vermont, and **Brett A Tangedal***, University of Charleston (954-11-37)

Special Session on Graph Theory, III

2:30 PM – 5:50 PM **Room 215, Griffin Hall**

Organizers: **Robin Thomas**, Georgia Institute of Technology
Dhruv Mubayi, Georgia Institute of Technology

2:30PM (142) *Isoperimetric numbers of infinite planar graphs: I.*
Serge Lawrencenko, **Michael D. Plummer***, Department of Mathematics, Vanderbilt University, and **Xiaoya Zha**, Department of Mathematical Sciences, Middle Tennessee State University (954-05-114)

3:00PM (143) *Isoperimetric numbers of infinite planar graphs: II.*
Serge Lawrencenko, **Michael D. Plummer**, Department of Mathematics, Vanderbilt University, and **Xiaoya Zha***, Department of Mathematical Sciences, Middle Tennessee State University (954-05-116)

3:30PM (144) *Independent Sets In Triangle-Free Cubic Planar Graphs.*
Christopher Carl Heckman* and **Robin Thomas**, Georgia Institute of Technology (954-05-129)

4:00PM (145) *Excluding any graph as a minor allows a low tree-width 2-coloring.*
Dirk Vertigan, Louisiana State University (954-05-162)

4:30PM ▶ (146) *Large 4-connected nonplanar graphs.*
Guoli Ding, **Bogdan Oporowski***, Louisiana State University, **Robin Thomas**, Georgia Institute of Technology, and **Dirk Vertigan**, Louisiana State University (954-05-173)

5:00PM (147) *On removable circuits in graphs and matroids.*
Manoel Lemos, Universidade Federal de Pernambuco, and **James Oxley***, Louisiana State University (954-05-161)

5:30PM (148) *Connected (g, f)-factors.*
Mark N. Ellingham*, Vanderbilt University, **Yunsun Nam**, Ewha Woman's University, and **Heinz-Jürgen Voss**, Technical University Dresden (954-05-123)

Session for Contributed Papers

2:30 PM – 3:25 PM **Room 403, Griffin Hall**

2:30PM (149) *Regular filter spaces.*
N. Rath, Arkansas Tech University (954-54-14)

2:45PM (150) *Regularization of an Integral Equation with Delta Function Solutions.* Preliminary report.
William L Perry, Texas A&M University (954-45-21)

3:00PM (151) *A Non-Strongly Normal Regular Digital Picture Space.*
Michael S McClendon, University of Louisiana (954-54-64)

3:15PM (152) *Regularity for the Hodge-Weyl Decomposition.*
Ahmad S Qawasmi, Lecturer/Univ. of Houston (954-35-130)

Sunday, April 16

Invited Address

8:30 AM – 9:20 AM **Room 147, Griffin Hall**

(153) *Periods, L-functions, and arithmetic.*
Fernando Rodriguez Villegas, University of Texas at Austin (954-11-03)

Special Session on Rings and Their Generalizations, IV

9:30 AM – 11:50 AM **Room 318, Griffin Hall**

Organizers: **Gary F. Birkenmeier**, University of Louisiana at Lafayette
Henry E. Heatherly, University of Louisiana at Lafayette

9:30AM (154) *Near-Rings Formed Using the Set of Solutions of Conditional Cauchy Equations.*
Chris G Devillier, Louisiana State University at Eunice (954-08-181)

10:00AM (155) *A class of 2-primal rings that satisfy (PS I).* Preliminary report.
Greg T Marks, University of California at Berkeley (954-16-83)

10:30AM ▶ (156) *Mappings of Finite Groups.*
Alan Oswald*, University of Teesside, UK, and **Peter Birch**, England (954-08-89)

11:00AM (157) *Modules with fully invariant submodules essesntial in fully invariant summands.* Preliminary report.
Gary F. Birkenmeier, University of Louisiana at Lafayette, **Jae K. Park**, Busan National University, and **S. Tariq Rizvi***, The Ohio State University (954-16-84)

11:30AM (158) *Stacked bases over h-local Prüfer domains.*
Laszlo Fuchs*, Tulane University, and **Sang Bum Lee**, Sangmyung University (954-13-94)

Special Session on Nonlinear Differential Equations and Their Applications, IV

9:30 AM – 11:20 AM **Room 205, Griffin Hall**

Organizers: **C. Y. Chan**, University of Louisiana at Lafayette
Keng Deng, University of Louisiana at Lafayette
A. S. Vatsala, University of Louisiana at Lafayette

9:30AM ▶ (159) *Global bifurcations for models of phase transitions.*
Junping Shi, Department of Mathematics, Tulane University (954-35-60)

10:00AM (160) *Exchange of conserved quantities in systems of conservation laws.* Preliminary report.
Michael Sever, The Hebrew University (954-35-62)

10:30AM (161) *Viscosity Solutions of Fully Nonlinear Functional Parabolic Differential Equations.*
Liu Wei-an, Associate Prof./Central China Normal University (954-39-65)

11:00AM (162) *Analysis of new meshless methods for conservation laws.*
Nathalie Lanson* and **Jean Paul Vila**, MIP-INSA (954-35-15)

Special Session on Quantum Topology, IV

9:30 AM – 11:45 PM **Room 321, Griffin Hall**

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

9:30AM (163) *Relativistic Spin networks, with topological and physical applications.*
Louis Crane, Kansas State University (954-83-80)

10:30AM (164) *Presentations of q-Homotopy Skein Modules of 3-manifolds.* Preliminary report.
Uwe Kaiser, Siegen University (954-57-79)

11:00AM (165) *On the noncommutative generalization of the A-polynomial.* Preliminary report.
Razvan Gelca, University of Michigan (954-57-193)

Special Session on Continuum Theory, IV

9:30 AM – 11:20 AM **Room 301, Griffin Hall**

Organizer: **Thelma R. West**, University of Louisiana at Lafayette

9:30AM (166) *A Complete Classification of Inverse Limit Spaces of Tent Maps with Periodic Critical Points.*
Brian E Raines, University of Missouri-Rolla (954-54-112)

10:00AM (167) *Weak and small Whitney properties.*
Wlodzimierz J. Charatonik, University of Mossouri-Rolla (954-54-146)

10:30AM (168) *Investigating the Selection Space of Dendrites.* Preliminary report.
Joseph E McParland, National Security Agency (954-54-189)

11:00AM ▶ (169) *Spans of the Hilbert Cube.*
Isabel Puga Espinosa*, **Raul Escobedo Conde**, Universidad Nacional Autonoma de Mexico, and **Thelma R West**, University of Louisiana at Lafayette (954-54-203)

Special Session on L-functions, Periods, and Arithmetic, II

9:30 AM – 11:20 AM **Room 405, Griffin Hall**

Organizers: **Fernando Rodriguez Villegas**, University of Texas at Austin
Jeff Vaaler, University of Texas at Austin

9:30AM (170) *Toric Varieties and Modular Forms.*
Lev A Borisov and **Paul E Gunnells***, Columbia University (954-11-54)

10:00AM (171) *Theta Correspondence and Zeta Series with Respect to a Quadratic Extension (Preliminary Report).* Preliminary report.
Ze-Li Dou, Texas Christian University (954-11-55)

10:30AM (172) *Mollifiers, zeros, and mean values of L-functions.* Preliminary report.
David W Farmer*, Bucknell University, and **J. Brian Conrey**, American Institute of Mathematics (954-11-166)

11:00AM (173) *Stark's conjecture in multiquadratic extensions, revisited.* Preliminary report.
Jonathan W Sands*, **David S Dummit**, University of Vermont, and **Brett Tangedal**, College of Charleston (954-11-10)

Special Session on Graph Theory, IV

9:30 AM – 12:20 PM **Room 215, Griffin Hall**

Organizers: **Robin Thomas**, Georgia Institute of Technology
Dhruv Mubayi, Georgia Institute of Technology

9:30AM ▶ (174) *Totally positive hypergraphs.*
Jenő Lehel, University of Louisville (954-05-138)

10:00AM (175) *Fragile Graphs.* Preliminary report.
Guantao Chen, Georgia State University, **Ralph J Faudree***, University of Memphis, and **Michael S Jacobson**, University of Louisville (954-05-134)

10:30AM (176) *Vertex covers by edge disjoint cliques.*
Lubos Thoma, Carnegie Mellon University (954-05-182)

11:00AM ▶ (177) *From Triangulated Spheres to Triangulated Balls.*
Andreĭ Kotlov, CWI (Amsterdam) (954-05-93)

11:30AM ▶ (178) *Minimum Span Vertex Labellings.* Preliminary report.
Jerrold R. Griggs, University of South Carolina (954-05-196)

NOON (179) *Growing grids in matroids of high branch-width.* Preliminary report.
Thor Johnson, Princeton University, **Neil Robertson***, Ohio State University, and **Paul Seymour**, Princeton University (954-05-192)

John L. Bryant
Associate Secretary
Tallahassee, Florida