

# Summary of Previous Meetings

National speakers are indicated by (\*).

## Meeting 1: University of Houston, March 10-12, 1989

*Complete manifolds of bounded curvature and finite volume*

Jeff Cheeger\*, State University of New York, Stony Brook

*Dupin submanifolds*

S. S. Chern\*, University of California, Berkeley

*Convergence theorems for Riemannian manifolds*

L. Zhiyong Gao, Rice University

*Topology of algebraic surfaces*

Robert Gompf, The University of Texas, Austin

*Symmetric and asymmetric harmonic maps*

Robert Hardt, Rice University

*Applications of geometric variational methods in the large*

Jon Pitts, Texas A&M University

*Non-minimal solutions to Yang-Mills equations*

Karen Uhlenbeck, The University of Texas, Austin

## Meeting 2: University of Texas, Austin, December 1-3, 1989

*Isoperimetric inequality, index and stability of a minimal surface*

Jaigyoung Choe, Rice University

*Analysis on loop groups*

Ezra Getzler\*, Massachusetts Institute of Technology

*Witten-Reshetikin-Turaev Invariants of 3-manifolds*

Robion Kirby\*, University of California, Berkeley

*3-manifold Invariants from the combinatorics of the Jones polynomial*

Raymond Lickorish, Visiting The University of Texas, Austin

*Gromov convergence of stratified sets*

Frank Quinn\*, Virginia Polytechnic Institute and State University

*Harmonic maps and Teichmüller theory*

Michael Wolf, Rice University

*The diffeomorphism group as a partial indirect product*

Phillip Yasskin, Texas A&M University

## Meeting 3: Rice University, March 30 - April 1, 1990

*The geometric origin of a highly degenerate Monge-Ampère equation*

David Bao, University of Houston

*Twistors and holonomy*

Robert Bryant\*, Duke University

*Torsion and a theorem of Milnor*

Robin Forman, Rice University

*Finite quantum field theories*

Dan Freed, The University of Texas, Austin

*Dehn surgery*

Cameron Gordon, The University of Texas, Austin

*Chern currents*

Reese Harvey, Rice University

*Kähler currents on compact complex manifolds*

Shangyu Ji, University of Houston

*Asymptotics near singular points*

Leon Simon\*, Stanford University

**Meeting 4: North Texas State University, November 6-8, 1990  
American Mathematical Society, Regional Meeting, Special Session**

*The orthogonal spectrum of a hyperbolic manifold*

Ara Basmajian, University of Oklahoma

*The hyperkähler geometry of instanton moduli*

Charles P. Boyer, University of New Mexico

*Convergent perturbation theories for volume preserving flows and maps*

A. Delshams, University of Barcelona

R. de la LLave, University of Texas, Austin

*Counting periodic tilings of the plane*

Reinhard O. W. Franz, University of Bielefeld)

*Examples of symplectic structures of fiber bundles*

Brian Kasper, University of Texas, Austin

*The observation of saddle periodic orbits in physical systems*

Daniel P. Lathrop, University of Texas, Austin

*Determinants on CR manifolds*

Terry Lohrenz, Rice University

*The total Chern class is an infinite loop*

Benjamin M. Mann, University of New Mexico

*Topological properties of some attractors for cylinder maps*

R. Daniel Mauldin, University of North Texas

*The Denjoy problem in two dimensions*

Alec Norton, University of Texas, Austin

*The p-Yang-Mills equations*

Thomas Otway, University of Texas, Austin

Karen Uhlenbeck, University of Texas, Austin

*The gradient flow for the Yang-Mills functional in two and three dimensions*

Johan Råde, University of Texas, Austin

*On the geometry of the moduli space of flat tori*

Daniel B. Swearingen, Rice University

*Schwarz' P-surface is stable*

Marty Ross, Rice University

*Growth rates and knots*

Daniel S. Silver, University of South Alabama

*Bifurcation analysis of the Eckhaus instability*

Laurette S. Tuckerman, University of Texas, Austin

*Some Quasilinear systems with a lack of ellipticity*

S. Walter Wei, University of Oklahoma

*Lattice Invariants for Sofic Shifts*

Susan G. Williams, University of South Alabama

### **Meeting 5: Texas A&M University, April 12-14, 1991**

*Hypersurfaces with prescribed mean curvature in Riemannian spaces*

Ilya Bakelman, Texas A&M University

*Homology cobordism and links*

Tim Cochran, Rice University

*Irreducible 4-manifolds need not be complex*

Robert Gompf, University of Texas, Austin

*Radon transforms and the geometry of convex sets*

Paul Goodey, University of Oklahoma

*Some new applications of harmonic maps to rigidity problems*

Richard Schoen\*, Stanford University

*A generalization of Riemann mappings to several complex variables*

Stephen Semmes, Rice University

*On the geometry and arithmetic of elliptic surfaces*

Peter Stiller, Texas A&M University

*Stable uniformization of 4-dimensional manifolds*

Clifford Taubes\*, Harvard University

### **Meeting 6: University of Texas, Austin, October 18-20, 1991**

*A Harnack inequality for the  $p$ -Laplacian diffusion equation*

David Bao, University of Houston

*From annulus conjecture to signal processing*

Michael Freedman\*, University of California at San Diego

*Positive diagrams for 3-manifolds*

John Hempel, Rice University

*The topology of moduli spaces and the Atiyah-Jones conjecture*

Ben Mann, University of Texas, Austin

*Pseudo-holomorphic curves in symplectic 4-manifolds*

Dusa McDuff\*, New York University

*Global Analysis: A subject before its time?*

Karen Uhlenbeck, University of Texas, Austin

*Capillary surfaces in wedges and cones*

Tom Vogel, Texas A&M University

### **Meeting 7: The University of Houston, February 7-9, 1992**

*Development maps in CR and complex hyperbolic geometry*

Dan Burns\*, University of Michigan

*Closed  $W$ -surfaces*

S. S. Chern\*, University of California at Berkeley

*Geometric and topological methods in the analysis of symmetry breaking*

Mike Field\*, Sydney University  
*Spectral sequences via harmonic forms*  
Robin Forman, Rice University  
*Variations on the Chern-Simons form*  
Dan Freed, University of Texas, Austin  
*Currents, Metrics and Moishezon manifolds*  
Shanyu Ji, University of Houston  
*The geometry of constant mean curvature surfaces*  
Robert Kusner\*, University of Massachusetts  
*Symbolic dynamics in low-dimensional systems*  
Sheldon Newhouse\*, University of North Carolina  
*W-algebras and W-strings*  
Chris Pope, Texas A&M University  
*The singular set of minimal surfaces and harmonic maps*  
Leon Simon\*, Stanford University

**Meeting 8: San Antonio, Texas, January 13-16, 1993**  
**American Mathematical Society, Winter Meeting, Special Session**

*Intersections of topologically tame Kleinian groups*  
James W. Anderson  
*Topological methods to compute Chern-Simons invariants*  
Dave Auckly, University of Texas, Austin  
*Movie diagrams and simplex equations*  
J. Scott Carter, University of South Alabama  
Masahico Salto, University of Texas, Austin  
*Twistor theory for indefinite Kähler manifolds*  
Edward G. Dunne, Oklahoma State University  
*Non-hyperbolic manifolds obtained by Dehn surgery on an hyperbolic knot*  
Mario Eudave-Muñoz, Ciudad University, Mexico  
*Chern-Simons theory via path integrals*  
Dana S. Fine, University of Massachusetts  
*Floppy curves and applications to nonsingular real algebraic curves*  
Patrick M. Gilmer, Louisiana State University  
*Classifying sphere-foliated CMC submanifolds of space forms*  
William C. Jagy, Midwestern State University  
*Two-generator links*  
Amelia C. Jones, University of Oregon  
*Nonsimple geodesics in hyperbolic 3-manifolds*  
Kerry N. Jones, University of Texas, Austin  
Alan W. Reid, University of Texas, Austin  
*The Nielson theory of fibrations*  
Edward C. Keppelmann, Texas A&M University  
*Initial boundary value problems for the Ricci flow*  
Georgi Kamberov, Rice University  
*Volume preserving diffeomorphisms of a manifold with boundary*

Guojun Liao, University of Texas, Arlington  
*Recent results in the holonomy manifolds with an affine connection*  
 Robert McLean, Texas A&M University  
*Continuity of the Liouville form of metrics of non-positive curvatuere*  
 Sassan Mohseni, University of Dallas  
*Homotopy unknotting number*  
 Chris L. Morin, University of Texas, Austin  
*Least area tori in 3-manifolds*  
 Max Neumann-Coto, University National Autonoma de Mexico, Mexico  
*Critical points of the determinant of the Laplace operator*  
 Ken Richardson, Rice University  
*Curves in the boundary of a handlebody*  
 Edith Starr, Rice University  
*Unlinked graphs in 3-manifolds*  
 Ying-Quing Wu, University of Texas, Austin

### **Meeting 9: Rice University, April 16-18, 1993**

*Essential laminations in non-Haken 3-manifolds*  
 Mark Brittenham, University of Texas, Austin  
*Harnack estimates for heat flows*  
 Huai-Dong Cao, Texas A&M University  
*Topology of 2-knots and symplectic geometry*  
 Yakov Eliashberg\*, Stanford University  
*Numerical invariants for knotted graphs*  
 Rick Litherland, Louisiana State University  
*A random walk on the mapping class group and the boundary of Teichmuller space*  
 Howard Masur\*, University of Illinois, Chicago  
*Detecting the symmetry of attractors: an approach based on ergodicity*  
 Matthew Nicol, University of Houston  
*Detecting geometric and statistical properties of attractors*  
 Amy Radunskaya, Rice University  
*p-harmonic maps with applications to topology geometry, and PDE's*  
 Walter Wei, University of Oklahoma  
*Energy minimizing sections of bundles*  
 Shiah-Sen Wang, Rice University  
*Chern currents of singular connectins associated with a compactified bundle*  
 John Zweck, Rice University

### **Meeting 10: Texas A&M University, October 22-23, 1993** **American Mathematical Society, Regional Meeting, Special Session**

*Defects of Schottky groups*  
 James Anderson, Rice University  
*An irreducible homology sphere which is not Dehn*  
 Dave Auckly, University of Texas, Austin  
*Existence of hypersurfaces of prescribed mean curvature*

T. David Hendricks, Texas A&M University  
*Algebraic cycles as a topological group functor*  
Paulo Lima-Filho, Texas A&M University  
*the spectrum of the number operator in path space*  
Terry Lohrenz, Rice University  
*Moduli of singular Yang-Mills fields*  
Lorenzo Sadun, University of Texas, Austin  
*Complete constant mean curvature surfaces in hyperbolic space*  
Yoshi Tonegawa, Rice University  
*Dipole solutions to the meron problem*  
Karen Uhlenbeck, University of Texas, Austin  
*A matrix for computing the Jones polynomial of a knot*  
Louis Zulli, Rice University

### **Meeting 11: University of Texas, April 15-17, 1994**

*Symplectic Floer homology operations*  
Martin Betz, University of Texas, Austin  
*2-spheres and the Donaldson series*  
Robert Fintushel\*, Michigan State University  
*Symmetry attractors*  
Martin Golubitsky, University of Houston  
*Spectral geometry on Riemannian nilmanifolds*  
Ruth Gornet, Texas Tech University  
*The geometry of instanton moduli spaces on spheres and ruled surfaces*  
James Milgram\*, University of New Mexico  
*Singular Yamabe metrics and constant mean curvature*  
Dan Pollack, Mathematical Sciences Research Institute  
*Topological embeddings of 2-spheres in 4-manifolds*  
Richard Stong, Rice University  
Panel Discussion: *Undergraduate research*  
Moderator: Hugo Rossi\*, University of Utah  
Murad Ozaydin, University of Oklahoma  
Alice Underwood, University of North Texas  
Phil Yasskin, Texas A&M University

### **Meeting 12: Texas A&M University, November 11-13, 1994**

*A possible approach to the geometrization conjecture*  
Andrew Casson\*, University of California, Berkeley  
*The National Science and Technology Research Center for Computation  
and Visualization of Geometric Structures: a postdoc's perspective*  
Davide Cervone\*, The Geometry Center  
*Late breaking news in gauge theory*  
Dan Freed, University of Texas, Austin  
*Cutting and pasting symplectic manifolds*  
Robert Gompf, University of Texas, Austin

*Problems on the Ricci flow on 3-manifolds*

Richard Hamilton\*, University of California, San Diego

*On Riemann's mapping problem*

Shanyu Ji, University of Houston

*On moving families*

Blaine Lawson\*, SUNY at Stony Brook

*Crystalline surface diffusion*

Jean Taylor\*, Rutgers University

*Bounded harmonic forms on complete manifolds*

DaGang Yang, Tulane University

### **Meeting 13: Rice University, April 7-9, 1995**

*A geometric interpretation of smooth Deligne cohomology*

Pawel Gajer, Texas A&M University

*Which knot has the most exceptional surgeries?*

Cameron Gordon, University of Texas, Austin

*Coarse chaos*

Steve Hurder\*, University of Illinois, Chicago

*The Seibert-Witten equations and the topology of four-manifolds*

Tom Mrowka\*, California Institute of Technology

*Index theory on odd-dimensional manifolds*

Efton Park, Texas Christian University

*Von Neumann's inequality, completely bounded maps, and the*

*Caratheodory and Kobayashi metrics*

Vern Paulsen, University of Houston

*Delaunay partitions*

William Veech, Rice University

Panel Discussion:

*Helping minorities and first generation collegians succeed in freshman mathematics*

Moderator: Uri Treisman, University of Texas, Austin

Nancy King, Texas Southern University

Cynthia Lanius, Milby High School, Houston

### **Meeting 14: University of Texas, Austin, November 10-12, 1995**

*Scalar curvature and geometrization for 3-manifolds*

Mike Anderson\*, State University of New York, Stony Brook

*Hyperbolic convex hulls*

Francis Bonahon\*, University of Southern California

*Recognizing constant curvature groups from planar subdivision rules*

Jim Cannon\*, Brigham Young University

*A nilpotent classification of closed 3-manifolds*

Mike Freedman\*, University of California, San Diego

*Computing least area hypersurfaces spanning arbitrary boundaries*

Jon Pitts, Texas A&M University

*Supersymmetric maps and the topology of Calabi-Yau manifolds*

David Morrison\*, Duke University  
*Singular incompressible surfaces in 3-manifolds*  
Hyam Rubinstein\*, University of Melbourne

### **Meeting 15: University of Houston, February 23-25, 1996**

*Welcoming Remarks*

S. S. Chern\*, Mathematical Sciences Research Institute

*The geometry of Finsler surfaces of constant curvature*

Robert Bryant\*, Duke University

*Manifolds with Ricci curvature bounded below*

Jeff Cheeger\*, Courant Institute

*Atomic sections and Chern currents*

Reese Harvy, Rice University

*On the Gauss map of minimal surfaces in  $n$ -dimensional Euclidean space*

Min Ru, University of Houston

*Aperiodic tiling and pinwheel geometry*

Lorenzo Sadun, University of Texas, Austin

*Rigidity of stable minimal hypersurfaces*

Ying Shen, Texas A&M University

*Topology of complete manifolds with non-negative Ricci curvature*

Zhongmin Shen\*, I.U.P.U.I.

Special Presentation:

*Teaching ODE's using new technology*

John Polking, Rice University

Martin Golubitsky, University of Houston

### **Meeting 16: Rice University, October 11-13, 1996**

*Homotopy hyperbolic 3-manifolds are hyperbolic*

Mladen Bestvina\*, University of Utah

*Two theorems of Bernstein type*

Huai-Dong Cao, Texas A&M University

*Weyl type bounds for harmonic functions*

Toby Colding\*, New York University

*Harmonic and quasi-harmonic spheres*

Fanghua Lin\*, University of Chicago

*Homotopy hyperbolic 3-manifolds are hyperbolic*

Robert Meyerhoff\*, Boston College

*Closed essential surfaces in bounded 3-manifolds*

Alan Reid, University of Texas, Austin

*A maximally contractive map from  $Z^2$  to  $Z^3$*

Richard Stong, Rice University

*Two interesting geometric evolution equations*

Karen Uhlenbeck, University of Texas, Austin

### **Meeting 17: Texas Christian University, February 7-9, 1997**

*Combinatorial Differential Topology and Geometry*

Robin Forman, Harvard University and Rice University

*On 4-Dimensional Einstein Manifolds*

Claude LeBrun\*, SUNY Stony Brook

*Generating functions for Euler-Chow invariants of projective varieties*

Paulo Lima-Filho, Texas A&M University

*Diffeomorphisms of 3-Manifolds*

Darryl McCullough, University of Oklahoma

*The Determinant of the Laplacian for 3-Manifolds*

Kate Okikiolu\*, MIT and Princeton University

*Secrets of the Signature Operator*

Jonathan Rosenberg\*, University of Maryland

*Metric Fibrations in Spaces of Nonnegative Curvature*

Gerard Walschap, University of Oklahoma

*Virtual Haken Dehn Surgery on Knots in Reducible 3-Manifolds*

Xingru Zhang, Oklahoma State University

Panel Discussion: *Research Experiences for Undergraduates*

Rhonda Hatcher, Texas Christian University

Ara Basmajian, University of Oklahoma

George Gilbert, Texas Christian University

## **Meeting 18: Rice University, November 14-16, 1997**

*Finite Type Invariants for 3-Manifolds*

Tim Cochran, Rice University

*Spinors and Collapsing*

John Lott\*, University of Michigan

*Hyperbolic Laminations Associated with Rational Maps*

Mikhail Lyubich\*, SUNY Stony Brook

*On Representation Varieties of Artin Groups, Projective Arrangements, and the Fundamental Groups of Smooth Complex Varieties*

John Millson\*, University of Maryland, College Park

*On the Smooth Continuum Model Used in Geometry and the Natural Sciences*

Dennis Sullivan\*, CUNY Graduate Center and SUNY Stony Brook

*Two Parameter Graphics for 3-Manifolds and Knots*

Abby Thompson\*, University of California, Davis

*Arithmetic Groups and Variational Problems for Riemannian Manifolds*

Shmuel Weinberger\*, University of Chicago

## **Meeting 19: University of Houston, April 24-26, 1998**

*Lattice Gauge Field Theory and Quantum Invariants*

Doug Bullock\*, University of Maryland

*Quadrispin Geometry and the Dynamics of a Unified Field*

Marcus Cohen\*, New Mexico State University

*Differential Geometry, Computers and Today's Science Majors*

John Oprea\*, Cleveland State University

*Parallel Bundles and Symmetric Spaces*

Lorenzo Sadun, University of Texas

*The Geometry of the Honeybee's Dance Language*

Barbara Shipman\*, University of Rochester

*Convex Polytopes and Momentum Mappings in the Geometry of Generalized Flag Manifolds: a Physical Interpretation and Connections with Honeybee*

Barbara Shipman\*, University of Rochester

*Convex polytopes and torus actions on generalized flag manifolds in the geometry of a completely integrable dynamical system*

Barbara Shipman\*, University of Rochester

*Equivariant Cohomology, Localization and Applications*

Jian Zhou, Texas A&M University

## **Meeting 20: University of Texas, October 16-18, 1998**

*The Geometry of Balance*

Dave Auckly\*, Kansas State University

*The Concept of Energy in Symplectic Geometry*

Helmut Hofer\*, Courant Institute

*Integrable Systems and Surfaces*

Jacques Hurtubise\*, McGill University

*Singularities and String Theory*

Sheldon Katz\*, Oklahoma State University

*A "Regular" Pentagonal Tiling of the Plane*

Ken Stephenson\*, University of Tennessee

*Symplectic Rational Blowdowns*

Margaret Symington, University of Texas at Austin

*The Plateau Problem for Lagrangian Surfaces*

Jon Wolfson\*, Michigan State University

## **Meeting 21: Texas Tech University, February 26-28, 1999**

*Legendrian Tangles*

Lisa Traynor\*, Bryn Mawr

*Immersed surfaces transverse to pseudo-Anosov flows and virtual fibers*

Sergio Fenley\*, Washington University in St. Louis

*Group actions and the heat equation*

Ken Richardson, Texas Christian University

*Spectral theory for some noncompact manifolds*

Tanya Christiansen\*, University of Missouri - Columbia

*Locally free Kleinian groups and hyperbolic manifolds*

Jim Anderson\*, University of Southampton and Rice University

*Einstein manifolds via contact geometry*

Charles Boyer\*, University of New Mexico

*Geometry of two-step nilpotent Lie groups*

Patrick Eberlein\*, University of North Carolina - Chapel Hill

*The Hitchin-Thorpe inequality for noncompact 4-manifolds*

Peter Petersen\*, University of California - Los Angeles

## **Meeting 22: Texas A&M University, November 12-14, 1999**

*Actions and anomalies*

Dan Freed, University of Texas at Austin

*Potential function of a Calabi-Yau threefold*

Bon Lian\*, Brandeis University

*Singular Monge-Ampere equations and critical exponent problems*

Rafe Mazzeo\*, Stanford University

*Embedded minimal tori in 3-manifolds and applications*

Bill Minicozzi\*, Johns Hopkins University

*Quasi-minimizing surfaces and applications to sets with topological nondegeneracy*

Stephen Semmes, Rice University

*Surfaces in smooth and symplectic 4-manifolds*

Ron Stern\*, University of California, Irvine

*Geometry of the n-wave equation*

Chuu-Lian Terng\*, Northeastern University

*Kahler Ricci solitons*

Gang Tian\*, MIT

## **Meeting 23: University of Texas, February 25-27, 2000**

*Taut foliations with one-sided branching*

Danny Calegari\*, University of California, Berkeley

*Compact non-Lie group actions*

Bob Edwards\*, University of California, Los Angeles

*Topologically characterizing symplectic manifolds*

Bob Gompf, University of Texas, Austin

*Stack intersection numbers as a measure of complexity for splittings of 3-manifolds*

John Hempel, Rice University

*A priori bounds for hyperbolic Dehn surgery*

Steve Kerckhoff\*, Stanford University

*Recognizing bundle covers of some 3-manifolds*

Hyam Rubinstein\*, University of Melbourne and Stanford University

*A survey on von Neumann signatures*

Peter Teichner\*, University of California, San Diego

*Quantization of the Hitchin system*

Constantin Teleman, University of Texas at Austin

## **Meeting 24: Rice University, November 10-12, 2000**

*Bounding the degree of maps*

Chris Connell\*, University of Illinois, Chicago

*Periods of abelian differentials and dynamics*

Misha Kapovich\*, University of Utah

*Laminar branched surfaces in 3-manifolds*

Tao Li, The University of Texas, Austin  
*Heat kernel, symplectic geometry, moduli spaces, and finite groups*  
Kefeng Liu\*, Stanford University  
*Critical points of eigenfunctions*  
Nikolai Nadirashvili\*, University of Chicago  
*Random trees and moduli of curves*  
Andrei Okounkov\*, University of California, Berkeley  
*The geometry of spaces of finite trees*  
Karen Vogtmann\*, Cornell University  
*Vertex algebras in differential geometry*  
Jian Zhou\*, M.I.T.

### **Meeting 25: Texas Christian University, February 23-25, 2001**

*A generic geometric property of constant curvature 3-manifolds*  
Ara Basmajian, University of Oklahoma  
*Computing conformal structures of curved surfaces*  
Phil Bowers\*, Florida State University  
*The differential invariant related to the first value of the Laplacian*  
Leonid Friedlander\*, University of Arizona  
*Kauffman bracket skein modules and character varieties*  
Razvan Gelca, Texas Tech University  
*Equivariant dimensional reduction and the Bott-Borel-Weil theorem*  
Franz Kamber\*, University of Illinois, Champaign-Urbana  
*Topological implications of amenability*  
John Roe\*, The Pennsylvania State University  
*The ABC Conjecture implies Vojta's height inequality for curves*  
Machiel van Frankenhuisen\*, Rutgers University  
*Some geometric and analytical questions relating to global injectivity*  
Frederico Xavier\*, University of Notre Dame

### **Meeting 26: Texas A&M University, November 2-4, 2001**

*Plane like minimal surfaces in periodic media, and related problems*  
Luis Caffarelli, University of Texas, Austin  
*Geometric estimates for the logarithmic porous medium equation*  
Richard Hamilton\*, Columbia University and University of California, Irvine  
*Bubbling, bubbles, and scans*  
Robert Hardt, Rice University  
*Neck pinching in mean curvature flow*  
Gerhart Huisken\*, University of Tuebingen  
*Twisted multiplicative transfers and characteristic classes*  
Paulo Lima-Filho, Texas A&M University  
*Mathematical results inspired by physics*  
Kefeng Liu\*, University of California, Los Angeles

*Conformal invariants and a sphere theorem*

Paul Yang\*, Princeton University

## **Meeting 27: Texas Tech University, April 5-7, 2002**

*Heat kernel asymptotics*

Ivan Avramidi, New Mexico Institute of Mining and Technology

*Spectral rigidity of Fuchsian groups of small signature*

Peter Buser\*, Ecole Polytechnique Federale de Lausanne

*Geodesics in nilpotent groups*

Lisa DeMeyer, Oklahoma State University

*Making quantization and pseudodifferential operators geometrically correct*

Stephen Fulling, Texas A&M University

*Tying knots with spaghetti*

Rob Kusner\*, University of Massachusetts, Amherst

*Orbifolds, gerbes, and Deligne cohomology*

Ernesto Lupercio\*, University of Wisconsin, Madison

*Seiberg-Witten invariants and surface singularities*

Liviu Nicolaescu\*, University of Notre Dame

*Determinants of Laplacians, scattering poles, and isopolar sets of Riemann surfaces*

Peter A. Perry\*, University of Kentucky, Lexington

## **Meeting 28: The University of Texas at Austin, October 11-13, 2002**

*Improved Kato inequalities and geometric applications*

Jean Pierre Bourguignon\*, Institut des Hautes Etudes Scientifiques

*Moduli spaces of augmented bundles: theory and practice*

Steven Bradlow\*, University of Illinois at Urbana-Champaign

*Zeta Function for the Quintic Threefold*

Philip Candelas, University of Texas, Austin

*Geometry of large  $N$ -dualities*

Antonella Grassi\*, University of Pennsylvania

*On integrable systems and cohomological field theories*

Takashi Kimura\*, Boston University and Institute for Advanced Study

*Yamabe invariants of three-manifolds*

Rick Schoen\*, Stanford University

*Geometric Dispersive Equations*

Jalal Shatah\*, Courant Institute of Mathematical Sciences

*Instabilities and interquark forces*

Clifford Taubes\*, Harvard University

## **Meeting 29: University of Houston, February 21-23, 2003**

*Minkowski geometry, curve shortening, and flow by weighted mean curvature*

Michael Gage\*, University of Rochester  
*Numerical methods for the Dirichlet problem for the two-dimensional elliptic Monge-Ampere equation: from augmented Lagrangians to incompressible Navier-Stokes equations solution methods*

Roland Glowinski, University of Houston  
*Flipping the moduli space of curves*

Brendan Hassett, Rice University  
*Mirror symmetry, Langlands duality, and representations of finite groups of Lie type*

Tamas Hausel, The University of Texas at Austin  
*Scalar curvature and Deligne pairing*

Jacob Sturm\*, Rutgers University  
*Geometry and topology of manifolds with positive spectrum*

Jiaping Wang\*, University of Minnesota  
*p-adic Monge-Ampere equations and related problems*

Pit-Mann Wong\*, University of Notre Dame

### **Meeting 30: Rice University, October 31-November 2, 2003**

*The fundamental group of the space of smooth cubic surfaces*

Daniel Allcock, The University of Texas at Austin

*Asymptotics of random discrete interfaces*

Richard Kenyon\*, Université Paris-Sud and Princeton University

*Geometric transitions and integrable systems*

Peter Ozsv'ath\*, Columbia University

*Floer homology and Dehn fillings*

Tony Pantev\*, University of Pennsylvania

*Asymptotic intersection numbers and restricted volumes*

Mihnea Popa\*, Harvard University

*Sections of algebraic fibrations*

Jason Starr\*, M.I.T.

*Some examples of virtually Haken and virtually fibered three-manifolds*

Genevieve Walsh, The University of Texas at Austin

*Mean curvature flows of Lagrangian submanifolds*

Mu-Tao Wang\*, Columbia University

### **Meeting 31: Texas Christian University, February 27-29, 2004**

*Knots with unknotting number 1*

Cameron Gordon, The University of Texas at Austin

*Index theory and non-commutative geometry*

James Heitsch\*, University of Illinois, Chicago

*Rigidity of weakly hyperbolic standard actions of lattices in rank one Lie groups on nilmanifolds*

Theron J. Hitchman, Rice University

*Towards a synthetic notion of Ricci curvature*

John Lott\*, University of Michigan

*Happy fractals*

Stephen Semmes, Rice University

*Spherical rank rigidity and Blaschke manifolds*

Krishnan Shankar\*, University of Oklahoma

*Spectral properties of Schrödinger operators*

Mikhail Shubin\*, Northeastern University

*Lorentz conformal structures and the wave equation*

Magdalena Toda, Texas Tech University