

# Texas Geometry and Topology Conference

## Summary of Previous Meetings

National speakers are indicated by (\*).

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

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

*Complete manifolds of bounded curvature and finite volume*

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

*Dupin submanifolds*

L. Zhiyong Gao, Rice University

*Convergence theorems for Riemannian manifolds*

Robert Gompf, The University of Texas, Austin

*Topology of algebraic surfaces*

Robert Hardt, Rice University

*Symmetric and asymmetric harmonic maps*

Jon Pitts, Texas A&M University

*Applications of geometric variational methods in the large*

Karen Uhlenbeck, The University of Texas, Austin

*Non-minimal solutions to Yang-Mills equations*

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

Jaigyoung Choe, Rice University

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

Ezra Getzler\*, Massachusetts Institute of Technology

*Analysis on loop groups*

Robion Kirby\*, University of California, Berkeley

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

Raymond Lickorish, Visiting The University of Texas, Austin

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

Frank Quinn\*, Virginia Polytechnic Institute and State University

*Gromov convergence of stratified sets*

Michael Wolf, Rice University

*Harmonic maps and Teichmüller theory*

Phillip Yasskin, Texas A&M University

*The diffeomorphism group as a partial indirect product*

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

David Bao, University of Houston

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

Robert Bryant\*, Duke University

*Twistors and holonomy*

Robin Forman, Rice University

*Torsion and a theorem of Milnor*

Dan Freed, The University of Texas, Austin  
*Finite quantum field theories*  
Cameron Gordon, The University of Texas, Austin  
*Dehn surgery*  
Reese Harvey, Rice University  
*Chern currents*  
Shangyu Ji, University of Houston  
*Kähler currents on compact complex manifolds*  
Leon Simon\*, Stanford University  
*Asymptotics near singular points*

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

Ara Basmajian, University of Oklahoma  
*The orthogonal spectrum of a hyperbolic manifold*  
Charles P. Boyer, University of New Mexico  
*The hyperkähler geometry of instanton moduli*  
A. Delshams, University of Barcelona & R. de la LLave, University of Texas, Austin  
*Convergent perturbation theories for volume preserving flows and maps*  
Reinhard O. W. Franz, University of Bielefeld)  
*Counting periodic tilings of the plane*  
Brian Kasper, University of Texas, Austin  
*Examples of symplectic structures of fiber bundles*  
Daniel P. Lathrop, University of Texas, Austin  
*The observation of saddle periodic orbits in physical systems*  
Terry Lohrenz, Rice University  
*Determinants on CR manifolds*  
Benjamin M. Mann, University of New Mexico  
*The total Chern class is an infinite loop*  
R. Daniel Mauldin, University of North Texas  
*Topological properties of some attractors for cylinder maps*  
Alec Norton, University of Texas, Austin  
*The Denjoy problem in two dimensions*  
Thomas Otway, University of Texas, Austin & Karen Uhlenbeck, University of Texas, Austin  
*The  $p$ -Yang-Mills equations*  
Johan Råde, University of Texas, Austin  
*The gradient flow for the Yang-Mills functional in two and three dimensions*  
Daniel B. Swearingen, Rice University  
*On the geometry of the moduli space of flat tori*  
Marty Ross, Rice University  
*Schwarz'  $P$ -surface is stable*  
Daniel S. Silver, University of South Alabama  
*Growth rates and knots*  
Laurette S. Tuckerman, University of Texas, Austin  
*Bifurcation analysis of the Eckhaus instability*

S. Walter Wei, University of Oklahoma  
*Some Quasilinear systems with a lack of ellipticity*  
Susan G. Williams, University of South Alabama  
*Lattice Invariants for Sofic Shifts*

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

Ilya Bakelman, Texas A&M University  
*Hypersurfaces with prescribed mean curvature in Riemannian spaces*  
Tim Cochran, Rice University  
*Homology cobordism and links*  
Robert Gompf, University of Texas, Austin  
*Irreducible 4-manifolds need not be complex*  
Paul Goodey, University of Oklahoma  
*Radon transforms and the geometry of convex sets*  
Richard Schoen\*, Stanford University  
*Some new applications of harmonic maps to rigidity problems*  
Stephen Semmes, Rice University  
*A generalization of Riemann mappings to several complex variables*  
Peter Stiller, Texas A&M University  
*On the geometry and arithmetic of elliptic surfaces*  
Clifford Taubes\*, Harvard University  
*Stable uniformization of 4-dimensional manifolds*

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

David Bao, University of Houston  
*A Harnack inequality for the  $p$ -Laplacian diffusion equation*  
Michael Freedman\*, University of California at San Diego  
*From annulus conjecture to signal processing*  
John Hempel, Rice University  
*Positive diagrams for 3-manifolds*  
Ben Mann, University of Texas, Austin  
*The topology of moduli spaces and the Atiyah-Jones conjecture*  
Dusa McDuff\*, New York University  
*Pseudo-holomorphic curves in symplectic 4-manifolds*  
Karen Uhlenbeck, University of Texas, Austin  
*Global Analysis: A subject before its time?*  
Tom Vogel, Texas A&M University  
*Capillary surfaces in wedges and cones*

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

Dan Burns\*, University of Michigan  
*Development maps in CR and complex hyperbolic geometry*  
S. S. Chern\*, University of California at Berkeley  
*Closed  $W$ -surfaces*  
Mike Field\*, Sydney University

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

Robin Forman, Rice University

*Spectral sequences via harmonic forms*

Dan Freed, University of Texas, Austin

*Variations on the Chern-Simons form*

Shanyu Ji, University of Houston

*Currents, Metrics and Moishezon manifolds*

Robert Kusner\*, University of Massachusetts

*The geometry of constant mean curvature surfaces*

Sheldon Newhouse\*, University of North Carolina

*Symbolic dynamics in low-dimensional systems*

Chris Pope, Texas A&M University

*W-algebras and W-strings*

Leon Simon\*, Stanford University

*The singular set of minimal surfaces and harmonic maps*

## **Meeting 8: San Antonio, Texas, January 13-16, 1993**

### **American Mathematical Society, Winter Meeting, Special Session**

James W. Anderson

*Intersections of topologically tame Kleinian groups*

Dave Auckly, University of Texas, Austin

*Topological methods to compute Chern-Simons invariants*

J. Scott Carter, University of South Alabama & Masahico Salto, University of Texas, Austin

*Movie diagrams and simplex equations*

Edward G. Dunne, Oklahoma State University

*Twistor theory for indefinite Kähler manifolds*

Mario Eudave-Muñoz, Ciudad University, Mexico

*Non-hyperbolic manifolds obtained by Dehn surgery on an hyperbolic knot*

Dana S. Fine, University of Massachusetts

*Chern-Simons theory via path integrals*

Patrick M. Gilmer, Louisiana State University

*Floppy curves and applications to nonsingular real algebraic curves*

William C. Jagy, Midwestern State University

*Classifying sphere-foliated CMC submanifolds of space forms*

Amelia C. Jones, University of Oregon

*Two-generator links*

Kerry N. Jones, University of Texas, Austin & Alan W. Reid, University of Texas, Austin

*Nonsimple geodesics in hyperbolic 3-manifolds*

Edward C. Keppelmann, Texas A&M University

*The Nielson theory of fibrations*

Georgi Kamberov, Rice University

*Initial boundary value problems for the Ricci flow*

Guojun Liao, University of Texas, Arlington

*Volume preserving diffeomorphisms of a manifold with boundary*

Robert McLean, Texas A&M University

*Recent results in the holonomy manifolds with an affine connection*  
Sassan Mohseni, University of Dallas

*Continuity of the Liouville form of metrics of non-positive curvatuere*  
Chris L. Morin, University of Texas, Austin

*Homotopy unknotting number*  
Max Neumann-Coto, University National Autonoma de Mexico, Mexico

*Least area tori in 3-manifolds*  
Ken Richardson, Rice University

*Critical points of the determinant of the Laplace operator*  
Edith Starr, Rice University

*Curves in the boundary of a handlebody*  
Ying-Quing Wu, University of Texas, Austin

*Unlinked graphs in 3-manifolds*

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

Mark Brittenham, University of Texas, Austin  
*Essential laminations in non-Haken 3-manifolds*

Huai-Dong Cao, Texas A&M University  
*Harnack estimates for heat flows*

Yakov Eliashberg\*, Stanford University  
*Topology of 2-knots and symplectic geometry*

Rick Litherland, Louisiana State University  
*Numerical invariants for knotted graphs*

Howard Masur\*, University of Illinois, Chicago  
*A random walk on the mapping class group and the boundary of Teichmuller space*

Matthew Nicol, University of Houston  
*Detecting the symmetry of attractors: an approach based on ergodicity*

Amy Radunskaya, Rice University  
*Detecting geometric and statistical properties of attractors*

Walter Wei, University of Oklahoma  
 *$p$ -harmonic maps with applications to topology geometry, and PDE's*

Shiah-Sen Wang, Rice University  
*Energy minimizing sections of bundles*

John Zweck, Rice University  
*Chern currents of singular connections associated with a compactified bundle*

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

James Anderson, Rice University  
*Defects of Schottky groups*

Dave Auckly, University of Texas, Austin  
*An irreducible homology sphere which is not Dehn*

T. David Hendricks, Texas A&M University  
*Existence of hypersurfaces of prescribed mean curvature*

Paulo Lima-Filho, Texas A&M University

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

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

Martin Betz, University of Texas, Austin  
*Symplectic Floer homology operations*  
Robert Fintushel\*, Michigan State University  
*2-spheres and the Donaldson series*  
Martin Golubitsky, University of Houston  
*Symmetry attractors*  
Ruth Gornet, Texas Tech University  
*Spectral geometry on Riemannian nilmanifolds*  
James Milgram\*, University of New Mexico  
*The geometry of instanton moduli spaces on spheres and ruled surfaces*  
Dan Pollack, Mathematical Sciences Research Institute  
*Singular Yamabe metrics and constant mean curvature*  
Richard Stong, Rice University  
*Topological embeddings of 2-spheres in 4-manifolds*  
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**

Andrew Casson\*, University of California, Berkeley  
*A possible approach to the geometrization conjecture*  
Davide Cervone\*, The Geometry Center  
*The National Science and Technology Research Center for Computation  
and Visualization of Geometric Structures: a postdoc's perspective*  
Dan Freed, University of Texas, Austin  
*Late breaking news in gauge theory*  
Robert Gompf, University of Texas, Austin  
*Cutting and pasting symplectic manifolds*  
Richard Hamilton\*, University of California, San Diego  
*Problems on the Ricci flow on 3-manifolds*

Shanyu Ji, University of Houston

*On Riemann's mapping problem*

Blaine Lawson\*, SUNY at Stony Brook

*On moving families*

Jean Taylor\*, Rutgers University

*Crystalline surface diffusion*

DaGang Yang, Tulane University

*Bounded harmonic forms on complete manifolds*

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

Pawel Gajer, Texas A&M University

*A geometric interpretation of smooth Deligne cohomology*

Cameron Gordon, University of Texas, Austin

*Which knot has the most exceptional surgeries?*

Steve Hurder\*, University of Illinois, Chicago

*Coarse chaos*

Tom Mrowka\*, California Institute of Technology

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

Efton Park, Texas Christian University

*Index theory on odd-dimensional manifolds*

Vern Paulsen, University of Houston

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

*Caratheodory and Kobayashi metrics*

William Veech, Rice University

*Delaunay partitions*

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**

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

*Scalar curvature and geometrization for 3-manifolds*

Francis Bonahon\*, University of Southern California

*Hyperbolic convex hulls*

Jim Cannon\*, Brigham Young University

*Recognizing constant curvature groups from planar subdivision rules*

Mike Freedman\*, University of California, San Diego

*A nilpotent classification of closed 3-manifolds*

Jon Pitts, Texas A&M University

*Computing least area hypersurfaces spanning arbitrary boundaries*

David Morrison\*, Duke University

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

Hyam Rubinstein\*, University of Melbourne

*Singular incompressible surfaces in 3-manifolds*

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

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

*Welcoming Remarks*

Robert Bryant\*, Duke University

*The geometry of Finsler surfaces of constant curvature*

Jeff Cheeger\*, Courant Institute

*Manifolds with Ricci curvature bounded below*

Reese Harvy, Rice University

*Atomic sections and Chern currents*

Min Ru, University of Houston

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

Lorenzo Sadun, University of Texas, Austin

*Aperiodic tiling and pinwheel geometry*

Ying Shen, Texas A&M University

*Rigidity of stable minimal hypersurfaces*

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

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

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**

Mladen Bestvina\*, University of Utah

*Homotopy hyperbolic 3-manifolds are hyperbolic*

Huai-Dong Cao, Texas A&M University

*Two theorems of Bernstein type*

Toby Colding\*, New York University

*Weyl type bounds for harmonic functions*

Fanghua Lin\*, University of Chicago

*Harmonic and quasi-harmonic spheres*

Robert Meyerhoff\*, Boston College

*Homotopy hyperbolic 3-manifolds are hyperbolic*

Alan Reid, University of Texas, Austin

*Closed essential surfaces in bounded 3-manifolds*

Richard Stong, Rice University

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

Karen Uhlenbeck, University of Texas, Austin

*Two interesting geometric evolution equations*

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

Robin Forman, Harvard University and Rice University

*Combinatorial differential topology and geometry*

Claude LeBrun\*, SUNY Stony Brook



*On 4-dimensional Einstein manifolds*

Paulo Lima-Filho, Texas A&M University

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

Darryl McCullough, University of Oklahoma

*Diffeomorphisms of 3-manifolds*

Kate Okikiolu\*, MIT and Princeton University

*The determinant of the Laplacian for 3-manifolds*

Jonathan Rosenberg\*, University of Maryland

*Secrets of the signature operator*

Gerard Walschap, University of Oklahoma

*Metric fibrations in spaces of nonnegative curvature*

Xingru Zhang, Oklahoma State University

*Virtual Haken Dehn surgery on knots in reducible 3-manifolds*

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**

Tim Cochran, Rice University

*Finite type invariants for 3-manifolds*

John Lott\*, University of Michigan

*Spinors and collapsing*

Mikhail Lyubich\*, SUNY Stony Brook

*Hyperbolic laminations associated with rational maps*

John Millson\*, University of Maryland, College Park

*On representation varieties of Artin groups, projective arrangements, and the fundamental groups of smooth complex varieties*

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

*On the smooth continuum model used in geometry and the natural sciences*

Abby Thompson\*, University of California, Davis

*Two parameter graphics for 3-manifolds and knots*

Shmuel Weinberger\*, University of Chicago

*Arithmetic groups and variational problems for Riemannian manifolds*

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

Doug Bullock\*, University of Maryland

*Lattice gauge field theory and quantum invariants*

Marcus Cohen\*, New Mexico State University

*Quadrispin geometry and the dynamics of a unified field*

John Oprea\*, Cleveland State University

*Differential geometry, computers and today's science majors*

Lorenzo Sadun, University of Texas

*Parallel bundles and symmetric spaces*

Barbara Shipman\*, University of Rochester

*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*

Jian Zhou, Texas A&M University

*Equivariant Cohomology, Localization and Applications*

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

Dave Auckly\*, Kansas State University

*The geometry of balance*

Helmut Hofer\*, Courant Institute

*The concept of energy in symplectic geometry*

Jacques Hurtubise\*, McGill University

*Integrable systems and surfaces*

Sheldon Katz\*, Oklahoma State University

*Singularities and string theory*

Ken Stephenson\*, University of Tennessee

*A "regular" pentagonal tiling of the plane*

Margaret Symington, University of Texas at Austin

*Symplectic rational blowdowns*

Jon Wolfson\*, Michigan State University

*The Plateau problem for lagrangian surfaces*

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

Lisa Traynor\*, Bryn Mawr

*Legendrian Tangles*

Sergio Fenley\*, Washington University in St. Louis

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

Ken Richardson, Texas Christian University

*Group actions and the heat equation*

Tanya Christiansen\*, University of Missouri - Columbia

*Spectral theory for some noncompact manifolds*

Jim Anderson\*, University of Southampton and Rice University

*Locally free Kleinian groups and hyperbolic manifolds*

Charles Boyer\*, University of New Mexico

*Einstein manifolds via contact geometry*

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

*Geometry of two-step nilpotent Lie groups*

Peter Petersen\*, University of California - Los Angeles

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

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

Dan Freed, University of Texas at Austin

*Actions and anomalies*

Bon Lian\*, Brandeis University

*Potential function of a Calabi-Yau threefold*

Rafe Mazzeo\*, Stanford University

*Singular Monge-Ampere equations and critical exponent problems*

Bill Minicozzi\*, Johns Hopkins University

*Embedded minimal tori in 3-manifolds and applications*

Stephen Semmes, Rice University

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

Ron Stern\*, University of California, Irvine

*Surfaces in smooth and symplectic 4-manifolds*

Chuu-Lian Terng\*, Northeastern University

*Geometry of the  $n$ -wave equation*

Gang Tian\*, MIT

*Kahler Ricci solitons*

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

Danny Calegari\*, University of California, Berkeley

*Taut foliations with one-sided branching*

Bob Edwards\*, University of California, Los Angeles

*Compact non-Lie group actions*

Bob Gompf, University of Texas, Austin

*Topologically characterizing symplectic manifolds*

John Hempel, Rice University

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

Steve Kerckhoff\*, Stanford University

*A priori bounds for hyperbolic Dehn surgery*

Hyam Rubinstein\*, University of Melbourne and Stanford University

*Recognizing bundle covers of some 3-manifolds*

Peter Teichner\*, University of California, San Diego

*A survey on von Neumann signatures*

Constantin Teleman, University of Texas at Austin

*Quantization of the Hitchin system*

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

Chris Connell\*, University of Illinois, Chicago

*Bounding the degree of maps*

Misha Kapovich\*, University of Utah

*Periods of abelian differentials and dynamics*

Tao Li, The University of Texas, Austin

*Laminar branched surfaces in 3-manifolds*

Kefeng Liu\*, Stanford University

*Heat kernel, symplectic geometry, moduli spaces, and finite groups*

Nikolai Nadirashvili\*, University of Chicago

*Critical points of eigenfunctions*

Andrei Okounkov\*, University of California, Berkeley

*Random trees and moduli of curves*

Karen Vogtmann\*, Cornell University

*The geometry of spaces of finite trees*

Jian Zhou\*, M.I.T.

*Vertex algebras in differential geometry*

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

Ara Basmajian, University of Oklahoma

*A generic geometric property of constant curvature 3-manifolds*

Phil Bowers\*, Florida State University

*Computing conformal structures of curved surfaces*

Leonid Friedlander\*, University of Arizona

*The differential invariant related to the first value of the Laplacian*

Razvan Gelca, Texas Tech University

*Kauffman bracket skein modules and character varieties*

Franz Kamber\*, University of Illinois, Champaign-Urbana

*Equivariant dimensional reduction and the Bott-Borel-Weil theorem*

John Roe\*, The Pennsylvania State University

*Topological implications of amenability*

Machiel van Frankenhuysen\*, Rutgers University

*The ABC Conjecture implies Vojta's height inequality for curves*

Frederico Xavier\*, University of Notre Dame

*Some geometric and analytical questions relating to global injectivity*

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

Luis Caffarelli, University of Texas, Austin

*Plane like minimal surfaces in periodic media, and related problems*

Richard Hamilton\*, Columbia University and University of California, Irvine

*Geometric estimates for the logarithmic porous medium equation*

Robert Hardt, Rice University

*Bubbling, bubbles, and scans*

Gerhart Huisken\*, University of Tuebingen

*Neck pinching in mean curvature flow*

Paulo Lima-Filho, Texas A&M University

*Twisted multiplicative transfers and characteristic classes*

Kefeng Liu\*, University of California, Los Angeles

*Mathematical results inspired by physics*

Paul Yang\*, Princeton University

*Conformal invariants and a sphere theorem*

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

Ivan Avramidi, New Mexico Institute of Mining and Technology

*Heat kernel asymptotics*

Peter Buser\*, Ecole Polytechnique Federale de Lausanne

*Spectral rigidity of Fuchsian groups of small signature*

Lisa DeMeyer, Oklahoma State University

*Geodesics in nilpotent groups*

Stephen Fulling, Texas A&M University

*Making quantization and pseudodifferential operators geometrically correct*

Rob Kusner\*, University of Massachusetts, Amherst

*Tying knots with spaghetti*

Ernesto Lupercio\*, University of Wisconsin, Madison

*Orbifolds, gerbes, and Deligne cohomology*

Liviu Nicolaescu\*, University of Notre Dame

*Seiberg-Witten invariants and surface singularities*

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

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

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

Jean Pierre Bourguignon\*, Institut des Hautes Etudes Scientifiques

*Improved Kato inequalities and geometric applications*

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

*Moduli spaces of augmented bundles: theory and practice*

Philip Candelas, University of Texas, Austin

*Zeta Function for the Quintic Threefold*

Antonella Grassi\*, University of Pennsylvania

*Geometry of large  $N$ -dualities*

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

*On integrable systems and cohomological field theories*

Rick Schoen\*, Stanford University

*Yamabe invariants of three-manifolds*

Jalal Shatah\*, Courant Institute of Mathematical Sciences

*Geometric Dispersive Equations*

Clifford Taubes\*, Harvard University

*Instabilities and interquark forces*

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

Michael Gage\*, University of Rochester

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

Roland Glowinski, University of Houston

*Numerical methods for the Dirichlet problem for the two-dimensional elliptic Monge-Ampere equation: from augmented Lagrangians to incompressible Navier-Stokes equations solution methods*

Brendan Hassett, Rice University

*Flipping the moduli space of curves*

Tamas Hausel, The University of Texas at Austin

*Mirror symmetry, Langlands duality, and representations of finite groups of Lie type*

Jacob Sturm\*, Rutgers University

*Scalar curvature and Deligne pairing*

Jiaping Wang\*, University of Minnesota

*Geometry and topology of manifolds with positive spectrum*

Pit-Mann Wong\*, University of Notre Dame

*p-adic Monge-Ampere equations and related problems*

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

Daniel Allcock, The University of Texas at Austin

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

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

*Asymptotics of random discrete interfaces*

Peter Ozsváth\*, Columbia University

*Geometric transitions and integrable systems*

Tony Pantev\*, University of Pennsylvania

*Floer homology and Dehn fillings*

Mihnea Popa\*, Harvard University

*Asymptotic intersection numbers and restricted volumes*

Jason Starr\*, M.I.T.

*Sections of algebraic fibrations*

Genevieve Walsh, The University of Texas at Austin

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

Mu-Tao Wang\*, Columbia University

*Mean curvature flows of Lagrangian submanifolds*

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

Cameron Gordon, The University of Texas at Austin

*Knots with unknotting number 1*

James Heitsch\*, University of Illinois, Chicago

*Index theory and non-commutative geometry*

Theron J. Hitchman, Rice University

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

John Lott\*, University of Michigan

*Towards a synthetic notion of Ricci curvature*

Stephen Semmes, Rice University

*Happy fractals*

Krishnan Shankar\*, University of Oklahoma

*Spherical rank rigidity and Blaschke manifolds*

Mikhail Shubin\*, Northeastern University

*Spectral properties of Schrödinger operators*

Magdalena Toda, Texas Tech University

*Lorentz conformal structures and the wave equation*

### **Meeting 32: Texas A&M University, October 29-31, 2004**

Charles Boyer, University of New Mexico

*Einstein metrics on spheres*

Simon Brendle\*, Princeton University

*The concentration-compactness principle and the Yamabe flow in conformal geometry*

Huai-Dong Cao\*, Lehigh University

*Second variation of Perelman's entropies and stability of Ricci solitons*

Tobias Colding\*, New York University

*The Calabi-Yau conjectures for embedded surfaces*

Benson Farb\*, University of Chicago

*Hidden symmetry*

Joseph Landsberg\*, Harvard University/Texas A&M University

*On the complexity of matrix multiplication*

Chiu-Chu Liu\*, Harvard University

*Gromov-Witten invariants of toric Calabi-Yau threefolds*

Brian White\*, Stanford University

*New applications of mean curvature flow to minimal surfaces*

### **Meeting 33: Texas Tech University, February 25-27, 2005**

Ruth Gornet, University of Texas at Arlington

*The length spectrum and isospectrality*

Brian Hall\*, University of Notre Dame

*The range of the heat operator*

Klaus Kirsten, Baylor University

*Zeta and eta invariants for Dirac operators with Chiral bag boundary conditions*

John Sullivan\*, Technical University of Berlin

*Geometric knot theory*

Craig Sutton\*, University of Pennsylvania

*Methods for constructing isospectral manifolds*

Alejandro Uribe\*, University of Michigan

*Quantizing (non-Kähler) compact symplectic manifolds*

V. S. Varadarajan\*, University of California at Los Angeles

*Super geometry and modern physics*

Zhenghan Wang\*, Indiana University

*Noncommutative geometry and quantum computing*

### **Meeting 34: The University of Texas at Austin, September 30-October 2, 2005**

David Ben-Zvi, The University of Texas at Austin

*Langlands Duality for Representations of Real Lie Groups*

George Daskalopoulos\*, Brown University

*Harmonic maps on singular domains and geometric rigidity*

John Etnyre\*, University of Pennsylvania

*Contact geometry and open book genus*

Nancy Hingston\*, College of New Jersey

*Periodic Solutions of Hamilton's Equations on Tori*

Sheldon Katz\*, University of Illinois

*Donaldson-Thomas invariants of complex projective threefolds*

Rafe Mazzeo\*, Stanford University

*Some linear and nonlinear elliptic problems in higher rank geometries*

Dennis Sullivan\*, SUNY at Stony Brook

*The free loop space of a manifold and the moduli space of Riemann surfaces*

Paul Seidel\*, University of Chicago

*Khovanov meets Ozsvath-Szabo*

### **Meeting 35: University of Houston, February 17-19, 2006**

(Note: This meeting was a special themed conference in memory of Professor S. S. Chern.)

Robert L. Bryant\*, Duke University

*Finsler 2-spheres of constant curvature*

Brendan Hassett, Rice University

*Compact moduli spaces for surfaces of general type*

Shanyu Ji, University of Houston

*Rigidity problems for proper holomorphic maps between balls*

Dan Knopf, The University of Texas at Austin

*Ricci flow with surgery, as applied to Poincaré*

Zhongmin Shen\*, NSF and IUPUI

*Randers metrics of scalar flag curvature*

Yum-Tong Siu\*, Harvard University

*Multiplier ideals – a new technique linking analysis and algebraic geometry*

Shou Cheng Zhang\*, Stanford University

*Chern numbers and Chern–Simons terms in physics*

### **Meeting 36: Rice University, October 27-29, 2006**

Joan Birman\*, Columbia University

*Invariants of Heegaard splittings and of 3-manifolds*

Elisenda Grigsby\*, Columbia University

*A combinatorial description of the knot Floer homology of cyclic branched covers*

Richard Hain\*, Duke University

*Relative weight filtrations on completions of mapping class groups*

Ko Honda\*, University of Southern California

*Reeb vector fields and open book decompositions*

Eleny Ionel\*, Stanford University

*Singular spaces and Gromov-Witten invariants*

Mikhail Kovanov\*, Columbia University

*Braid cobordisms and triangulated categories*

Feg Luo\*, Rutgers University

*Volume and angle structures on 3-manifolds*

Daniel Ruberman\*, Brandeis University

*Periodic Dirac operators and positive scalar curvature on 4-manifolds*

### **Meeting 37: Texas Christian University, March 23-25, 2007**

Tara Brendle, Louisiana State University

*Wicket groups and ring groups*



Richard Canary\*, University of Michigan

*Introductory bumponomics: deformation theory of Kleinian groups*

Christina Sormani\*, CUNY Graduate Center and Lehman College

*The covering spectrum of a Riemannian manifold*

Steve Ferry\*, Rutgers University

*Higson's compactification and the Novikov Conjecture*

Payl Loya\*, Binghamton University

*Gluing formulas for the spectral invariants of Dirac operators*

Greg Friedman, Texas Christian University

*Intersection homology and Poincaré duality on homotopically stratified spaces*

J. M. Landsberg, Texas A&M University

*Projective rigidity and flexibility of homogeneous varieties*

Robin Hartshorne\*, University of California, Berkeley

*Gorenstein liaison of algebraic varieties*

### **Meeting 38: Texas A&M University, October 19-21, 2007**

Simon Brendle\*, Stanford University

*1/4-pinched manifolds are space forms*

Jean-Pierre Demailly\*, Université de Grenoble

*On compact complex manifolds covered by a torus*

Michael Eastwood\*, University of Adelaide

*The X-ray transform on complex projective space*

Yakov Eliashberg\*, Stanford University

*Orderability of groups of contact transformations and related topics*

Dan Freed, University of Texas at Austin

*Remarks on topological field theory*

Bruce Kleiner\*, Columbia University

*BiLipschitz embedding in Banach spaces*

Ngaiming Mok\*, University of Hong Kong

*Analytic continuation of local holomorphic maps isometric with respect to the Bergman metric*

Natasa Sesum\*, Columbia University

*Compactness results for the Kähler-Ricci flow*

### **Meeting 39: Texas Tech University, February 22-24, 2008**

Ian Anderson\*, Utah State University

*Superposition formulas for differential systems*

Ian Anderson\*, Utah State University

*Differential geometry with Maple*

Sun-Yung Alice Chang\*, Princeton University

*Compactness of conformally compact Einstein manifolds of dimension (3+1)*

Vladimir Chernov\*, Dartmouth College

*Causality and linking in spacetimes*

Richard Melrose\*, MIT

*Theta functions and isospectral manifolds*

Emma Previato\*, Boston University  
*Theta functions and isospectral manifolds*  
Ken Richardson, Texas Christian University  
*Desingularizing compact Lie group actions*  
Colleen Robles, Texas A&M University  
*Rigidity of projective homogeneous varieties*  
Adam Sikora\*, SUNY Buffalo  
*Quantizations of character varieties and knot theory*

### **Meeting 40: The University of Texas at Austin, October 10-12, 2008**

Lewis Bowen\*, University of Hawaii  
*Free subgroups of lattices*  
Jeff Cheeger\*, Courant  
*Differentiable structures on metric measure spaces*  
Tom Farrell\*, University of Binghamton  
*The space of negatively-curved metrics on a closed manifold*  
Joel Hass\*, U. C. Davis  
*Harmonic maps and the stabilization of Heegaard splittings*  
Chikako Mese\*, Johns Hopkins  
*Harmonic maps in singular spaces*  
Hossein Namazi, University of Texas at Austin  
*Splittings, hyperbolic geometry and models*  
Yi Ni\*, MIT and AIM  
*Dehn surgeries that reduce the Thurston norm of a fibered manifold*  
Stefano Vidussi\*, U. C. Riverside  
*Twisted Alexander polynomials and fibered 3-manifolds*

### **Meeting 41: University of Houston, February 20-22, 2009**

Alexander Bufetov, Rice University  
*Suspension flows over Vershik's automorphisms*  
William Cherry, University of North Texas  
*Explicit sharp upper bounds on the spherical derivative of maps from the disc into planar domains with spherical symmetries*  
Michael Field, University of Houston  
*Resolution and intersection: three problems in equivariant geometry*  
Shelly Harvey, Rice University  
*Subgroups of the mapping class group and higher-order signature cocycles*  
Dan Knopf, University of Texas at Austin  
*Minimally invasive surgery for Ricci flow singularities*  
Joseph M. Landsberg, Texas A&M University  
*Geometric approaches to  $P$  vs.  $NP$*   
Kefeng Liu\*, UCLA  
*Recent results on moduli spaces*

Bernard Shiffman\*, Johns Hopkins

*Overcrowding and undercrowding of random zeros on complex manifolds*

Yum-Tong Siu\*, Harvard University

*Multiplier ideal sheaves an interface between analysis and algebraic geometry*

## **Meeting 42: Rice University, November 6-8, 2009**

Danny Calegari\*, California Institute of Technology

*Faces of the scl norm ball*

Rafael de la Llave, University of Texas at Austin

*Geometric properties of the scattering map to normally hyperbolic manifolds and applications to instability*

Anton Gorodetski\*, University of California, Irvine

*On quantitative characteristics of Cantor sets and their applications*

Rostislav Grigorchuk, Texas A&M University

*Ergodicity of boundary actions, Hopf decomposition and Nielsen-Schreier method*

Mike Hochman\*, Princeton University

*Local entropy averages and projection of fractal measures*

Mikhail Lyubich\*, SUNY at Stony Brook

*Two-dimensional rational dynamics and Lee-Yang zeros*

Karin Melnick\*, University of Maryland

*Normal forms for conformal vector fields*

William Veech, Rice University

*Teichmüller flows and curves and Hecke groups*

## **Meeting 43: Texas Christian University, February 26-28, 2010**

Jim Anderson\*, University of Southampton

*Small filling sets of curves on a surface*

Scott Baldridge, Louisiana State University

*Cube diagrams: The topology and geometry of knots in 3-dimensions*

Tim Cochran, Rice University

*The fractal nature of 3-manifolds up to homology cobordism*

Emily Dryden\*, Bucknell University

*Upper bounds on eigenvalues of the laplacian: surfaces and beyond*

Carolyn Gordon\*, Dartmouth College

*Spectral geometry on line bundles over flat tori*

Mark Haskins\*, Imperial College, London

*Special lagrangian cones*

Alexander Karabegov, Abilene Christian University

*Formal symplectic groupoids*

Markus Pflaum\*, University of Colorado

*Algebraic index theorems for orbifolds*

## **Meeting 44: Texas A&M University, November 12-14, 2010**

Gerard Besson\*, Université de Grenoble

*Collapsing irreducible manifolds with nontrivial fundamental group*

Gerard Besson\*, Université de Grenoble

*The Geometrization Program*

Robert Bryant\*, MSRI

*The affine Bonnet problem*

Peter Ebenfelt\*, UC San Diego

*Rigidity of CR mappings into hyperquadrics*

Phillip Griffiths\*, Institute for Advanced Study

*Hodge theory and representation theory*

Jun-Muk Hwang\*, Korea Institute for Advanced Study

*Symmetries of cone structures*

Lisa Jeffrey\*, University of Toronto

*Real loci of based loop groups*

Chuu-Lian Terng\*, UC Irvine

*Isometric immersions of hyperbolic manifolds in Euclidean space, revisited*

Gunther Uhlmann\*, UC, Irvine, and U. of Washington

*Boundary rigidity, lens rigidity and travel time tomography*

## **Meeting 45: Texas Tech University, February 18-20, 2011**

Anthony Bloch\*, University of Michigan

*Geometry of nonholonomic systems*

Annalisa Calini\*, College of Charleston

*Integrable evolution of closed vortex filaments: finite-gap solutions and their linear stability*

Jeanne Clelland\*, University of Colorado at Boulder

*Backlund transformations and Darboux integrability for nonlinear wave equations*

Baris Coskunuzer\*, Koc University, Turkey

*Generic uniqueness of area minimizing disks for extreme curves*

Shantanu Dave\*, University of Vienna, Austria

*Asymptotic analysis of regularizations that know about singularities*

Dragos Oprea\*, UC, San Diego

*The moduli space of stable quotients*

Richard Palais\*, UC, Irvine

*Geometry and Computer Graphics: Partnership, interaction, and challenges*

Alexander A. Voronov\*, U. of Minnesota and IPMU

*Higher categories and TQFTs*

## **Meeting 46: The University of Texas at Austin, October 7-9, 2011**

Mohammed Abouzaid\*, MIT

*On the Floer theory of compact symplectic manifolds*

Mladen Bestvina\*, University of Utah

*Topology and geometry of  $\text{Out}(F_n)$*

Mladen Bestvina\*, University of Utah

*How to solve  $|x|^2 - 2|y|^2 = 1$  over Gaussian integers*

Ursula Hamenstädt\*, University of Bonn

*Disk systems, sphere systems and the geometry of mapping class groups*

Çağrı Karakurt, University of Texas at Austin

*Corks and exotic smooth structures of 4-manifolds*

Peter Kronheimer\*, Harvard University

*Gauge theory and Rasmussen's invariant*

Chris Leininger\*, University of Illinois at Urbana-Champaign

*Short geodesics in moduli space*

Vladimir Markovic\*, Caltech

*Essential surfaces and the simple loop conjecture in higher-dimensional hyperbolic manifolds*

Richard Schwartz\*, Brown University

*The Devil's Pentagram*

## **Meeting 47: University of Houston, February 17-19, 2012**

Simon Brendle\*, Stanford University

*Uniqueness theorems for constant mean curvature surfaces*

Rowland Glowinski, University of Houston

*On the nodal lines of the eigenfunctions of the Laplace-Beltrami operator for bounded surfaces in  $\mathbb{R}^3$ : a computational approach*

Gordon Heier, University of Houston

*Effective finiteness of deformation types of non-isotrivial families*

Tom Mrowka\*, MIT

*Instantons and their impact on low dimensional topology*

Tom Mrowka\*, MIT

*Instanton Floer homology for trivalent graphs*

Timothy Perutz, University of Texas at Austin

*The arithmetic of homological mirror symmetry*

Andrew Putman, Rice University

*Representation stability, congruence subgroups, and mapping class groups*

Jian Song\*, Rutgers University

*Geometric surgery by partial differential equations*

Susan Tolman\*, University of Illinois at Urbana-Champaign

*Toric integrable geodesic flows in odd dimensions*

Igor Zelenko, Texas A&M University

*Geometry of filtered structures on manifolds: Tanaka's prolongation and beyond*

## **Meeting 48: Rice University, November 9-11, 2012**

Matthew Bainbridge\*, Indiana University

*Effective Veech dichotomy and diagonal flows*

Tom Church\*, Stanford University

*Stability in the unstable cohomology of mapping class groups,  $\mathrm{SL}_n(\mathbb{Z})$ , and  $\mathrm{Aut}(F_n)$*

Gavril Farkas\*, Humboldt University

*Classification of universal Jacobians over the moduli space of curves*

Samuel Grushevsky\*, Stony Brook University

*Stable cohomology of the perfect cone toroidal compactification of  $A_g$*

Sarah Koch\*, Harvard University

*An analytic construction of the Deligne-Mumford compactification of the moduli space of curves*

Eduard Looijenga\*, University of Utrecht

*Cohomological amplitude of moduli spaces of curves*

Howard Masur\*, University of Chicago

*Winning sets for Schmidt games, badly approximable real numbers, rational billiards and geodesics in moduli space*

Poster Session:

Derek Allums, Rice University and J. M. Landsberg, Texas A&M University

*Border rank of ternary trilinear forms and the  $j$ -invariant*

Khek Lun Harold Chao, Indiana University

*CAT(0) spaces with boundary the join of two Cantor sets*

Hyunjoo Cho, Sema Salur, and Firat Arıkan, University of Rochester

*Existence of almost contact structures on manifolds with  $G_2$ -structures*

Thanos Gentimis and Maria Bampasidou, University of Florida

*An algebraic topology model for research and development*

Sergii Kutsak, University of Florida

*Essential manifolds with extra structures*

Dmitry Zakharov and Samuel Grushevsky, Stony Brook University

*Partial compactification of the zero section of the universal abelian variety*

Letao Zhang, Rice University

*Representation theory and Hilbert schemes of points on  $K_3$  surfaces*

## **Meeting 49: University of Texas at Arlington, February 10-12, 2013**

Paul Bracken, University of Texas, Pan American

*A geometric approach to the study of nonlinear partial differential equations*

Gueo Grantcharov\*, Florida International University

*On the HKT geometry*

Sean Paul\*, University of Wisconsin, Madison

*From semi-stable pairs to  $K$ -energy maps of algebraic manifolds*

Daniel Ramras\*, New Mexico State University

*Stable representation theory and families of flat bundles*

Julie Rowlett\*, Max Planck Institute for Mathematics, Bonn

*Dynamics of the geodesic flow on negatively curved complete manifolds*

Barbara Shipman, University of Texas at Arlington

*New perspectives on classic definitions*

Stephan Stolz\*, University of Notre Dame

*Field theories and cohomology*

Joseph Wolf\*, University of California, Berkeley

*Plancherel formulae associated to filtrations of nilpotent Lie groups*

Joseph Wolf\*, University of California, Berkeley  
*Representations of nilpotent Lie groups*

### **Meeting 50: Texas A&M University, October 11-13, 2014**

Andrei Agrachev\*, SISSA-ISAS

*Quadratic cohomology*

Yakov Eliashberg\*, Stanford University

*Loose Legendrian knots and their applications*

Ailana Fraser\*, University of British Columbia

*Minimal surfaces in the ball and an eigenvalue problem*

Mark Green\*, UCLA

*Geometry of Mumford-Tate domains and their closures*

Rostislav Grigorchuk\*, Texas A&M

*On the spaces of groups and subgroups and the concept of invariant random subgroup*

Richard Hain\*, Duke University

*Modular forms and multiple zeta values*

Yael Karshon\*, University of Toronto

*Distinguishing symplectic blowups of the complex projective plane*

Laurent Manivel\*, Université de Grenoble

Special lecture suitable for graduate students

*The classification of prime Fano threefolds of index one*

Laurent Manivel\*, Université de Grenoble

*The periods of Fano fourfolds of degree ten*

Dror Varolin\*, SUNY at Stony Brook

*$L^2$  extensions and the twisted method*

### **Meeting 51: Texas Tech University, February 14-16, 2014**

Richard Hind\*, University of Notre Dame

*Symplectic embeddings and isotopies*

Thang Le\*, Georgia Institute of Technology

*The Habiro ring and invariants of 3-manifolds*

Liviu Nicolaescu\*, University of Notre Dame

*Random Morse functions on compact manifolds*

Peter Olver\*, University of Minnesota, Twin Cities

Special lecture suitable for graduate students

*Object recognition, symmetry detection, jigsaw puzzles, and melanomas*

Peter Olver\*, University of Minnesota

*Moving Frames and their applications*

Richard Schoen\*, Stanford University

*Trapped surfaces and MOTS in general relativity*

Susan Tolman\*, University of Illinois Urbana-Champaign

*The cohomology of quotients of Hamiltonian loop group spaces*

Zhenghan Wang\*, Microsoft

*Quantum Topology and its applications*  
Igor Zelenko, Texas A&M University  
*Symplectic methods in local differential geometry of nonholonomic distributions*

## **Meeting 52: The University of Texas, Austin, November 14-16, 2014**

Danny Calegari\*, University of Chicago  
*Roots, Schottky semigroups, and a proof of Bandt's Conjecture*  
Nathan Dunfield\*, UIUC  
*Random knots: their properties and algorithmic challenges*  
Benson Farb\*, University of Chicago  
*The topology of the space of polynomials - Introductory talk*  
Benson Farb\*, University of Chicago  
*The topology of  $SL(n, \mathcal{O}_K)$  - Research talk*  
J. Elisenda Grigsby\*, Boston College  
*(Sutured) Khovanov homology and representation theory*  
Yair Minsky\*, Yale University  
*A relative bounded image theorem for skinning maps*  
Jessica Purcell\*, BYU  
*Cusp volumes of alternating knots*  
Rachel Roberts\*, Washington University St. Louis  
*Approximating continuous foliations by contact structures*  
Martin Scharlemann\*, UCSB  
*The Schönflies Conjecture and its spin-offs*

## **Meeting 53: University of Houston, February 27-March 1, 2015**

Cameron Gordon, University of Texas, Austin) Left-orderability and 3-manifold groups  
Alastair Hamilton, Texas Tech University  
*Functional integrals and pairing classes in the moduli space of Riemann surfaces.*  
Laura Matusevich (Texas A&M)  
*A-hypergeometric solution sheaves*  
Lei Ni\*, UCSD  
*Hypersurface flow by the power of the Gauss curvature.*  
Colleen Robles, Texas A&M  
*Characteristic cohomology of the horizontal subbundle on flag manifolds and connections to Hodge theory*  
Mark Stern\*, Duke University  
*Introduction to nonlinear harmonic forms*  
Bernd Sturmfels\*, UC Berkeley  
*Tropical Plane Curves - Introductory talk*  
Bernd Sturmfels\*, UC Berkeley  
*The 27 trees on a cubic surface - Advanced talk*  
Steve Zelditch\*, Northwestern  
*Planck's constant, time, and stationary states in quantum mechanics*



## Meeting 54: Rice University, November 6-8, 2015

Stergios Antonakoudis\*, Cambridge

*The complex geometry of Teichmüller spaces and bounded symmetric domains*

Mario Bonk\*, UCLA

*The quasiconformal geometry of fractals - Introductory Talk*

Mario Bonk\*, UCLA

*Thurston maps - Advanced talk*

Marianna Csornyei\*, University of Chicago

*Keakeya problem for circular arcs*

Bruce Kleiner\*, NYU

*PI spaces: some new examples and open problems*

Vlad Markovic\*, Caltech

*Harmonic maps on hyperbolic spaces*

Steffen Rohde\*, University of Washington

*Random metric spaces and conformal geometry*

Christina Sormani\*, CUNY GC and Lehman College

*Sliced filling volumes and the tetrahedral compactness theorem*

Robert Young\*, NYU

*Quantifying nonorientability and filling multiples of embedded curves*

Poster Session:

Matthew Romney, University of Illinois at Urbana-Champaign

*Bi-Lipschitz embedding of the generalized Grushin plane in Euclidean spaces*

Collins Amburo Agyingi, University of South Africa

*When the ultrametrically injective hull is separable*

Thanuja Paragoda, Texas Tech University

*Willmore-type energies and Willmore-type surfaces in space forms*

Timo de Wolff, Texas A&M University

*Norms of roots of trinomials*

Stephen McKeown, University of Washington

*Exponential map and Einstein metrics on cornered asymptotically hyperbolic spaces*

Anton Lukyanenko, University of Michigan

*Intrinsic Diophantine approximation in Carnot groups and in the Siegel model of the Heisenberg group*

Mehrzaad Monzavi, University of Texas at Arlington

*On fixed point property of nilpotent and solvable Lie group actions on nonpositively curved compact manifolds*

## Meeting 55: Texas Christian University, February 19-21, 2016

Christian Bär\*, University of Potsdam

*An index theorem for compact Lorentzian manifolds with boundary*

Ruth Charney\*, Brandeis University

*Finding hyperbolic-like behavior in non-hyperbolic spaces*

David Damanik, Rice University

*Almost periodicity in time of solutions of the KdV equation*

Jonathan Hauenstein\*, University of Notre Dame

*Numerical computations in geometry*

Tara Holm\*, Cornell University

*The topology of symplectic manifolds*

Alejandro Uribe\*, University of Michigan

*Semiclassical quantum states associated to isotropic submanifolds of phase space: their calculus and applications*

Guoliang Yu, Texas A&M University

*Dimension and K-theory*

## **Meeting 56: Texas A&M University, November 4-6, 2016**

Anna Marie Bohmann\*, Vanderbilt

*Constructing equivariant cohomology*

Robert Hardt, Rice University

*Some analytic properties of singular spaces described by special classes of chains and cochains*

Vaughn Jones\*, Vanderbilt

*Knots and the Thompson groups*

Vaughn Jones\* Vanderbilt

*On some unitary representations of the Thommpson groups*

Niky Kamran\*, McGill

*Lotentzian Einstein metrics with presribed conformal infinity*

Shrawan Kumar\*, UNC Chapel Hill

*Verlinde dimension formula for the space of conformal blocks and the moduli of G-bundles*

Shrawan Kumar\*, UNC Chapel Hill

*Representation ring of Levi subgroups versus cohomology ring of flag varieties*

Rafe Mazzeo\*, Stanford University

*QFB geometry geometry and the Hitchin moduli space*

Emmy Murphy\*, MIT

*Legendrian knots and affine varities*

Thomas Schick\*, U. Goettingen

*Obstructions to positive scalar curvature via submanifolds of different codimensison*

## **Meeting 57: Texas Tech University, February 17-19, 2017**

Josef Dorfmeister\*, Technische Universität München

*Harmonic maps from Riemann surfaces to k-symmetric spaces via loop groups*

Irina Kogan\*, North Carolina State University University

*Jacobians with prescribed eigenvectors*

Ryan Grady\*, Montana State University

*Topological invariants via local-to-global constructions of QFT*

Jeff Lagarias\*, University of Michigan

*Configuration spaces and materials science*

David Gabai\*, Princeton University

*Maximal cusps of low volume*

Eleny Ionel\*, Stanford University

*The Gopakumar-Vafa conjecture for symplectic manifolds*

William Meeks\*, UMass at Amherst

*Recent progress in the theory of constant mean curvature surfaces*

Peter Peterson\*, UCLA

*The Alekseevsky Conjecture*