

PROGRAM SCHEDULE

Monday, May 19

8:00-8:45 a.m. **Registration (all day) and Coffee and Pastries** Kupfrian 1st floor lobby
 Set Up Posters (Poster session all day) Kupfrian 103, 104, 107

8:50-8:55 a.m. **Introductory Remarks** Theater
 Michael Siegel, FACM'08 Organizing Committee Chair
 Department of Mathematical Sciences

8:55-9:00 a.m. **Welcoming Address** Theater
 President Robert Altenkirch

9:00-10:00 a.m. **PLENARY LECTURE I** Theater
Jean-Marc Vanden-Broeck, University College London, UK
Studies of Nonlinear Three Dimensional Free Surface Flows
 Introduction by Michael Siegel

10:00-10:30 a.m. Coffee Break Kupfrian 1st floor lobby

MINISYMPOSIA I

	Mathematical Fluid Dynamics I Kupfrian 117 <i>Chair: Lou Kondic, NJIT</i>	Mathematical Biology I Kupfrian 118 <i>Chair: Amitabha Bose, NJIT</i>	Statistics I Kupfrian 108 <i>Chair: Sunil K. Dhar, NJIT</i>
10:30-11:00 a.m.	J. Thomas Beale Duke University <i>Numerical Methods for Moving Boundaries in Viscous Fluid Flow</i>	Rachel Kuske University of British Columbia <i>Transients + instabilities + noise = structure?</i>	Marianthi Markatou Columbia University <i>Analysis of Variance of Cross Validation Estimators of the Generalization Error of Computer Algorithms</i>
11:00-11:30 a.m.	Shilpa Khatri Courant Institute of Mathematical Sciences <i>A Numerical Method for Soluble Surfactants on Moving Interfaces</i> Jeffrey Aristoff Massachusetts Institute of Technology <i>Water Entry of Small Hydrophobic Spheres</i>	Brent Doiron University of Pittsburgh <i>Microcircuits and Macrodynamics in Cortical Processing</i>	Anton Schick State University of New York-Binghamton <i>Rates of Convergence for Estimators of Convolutions of Densities</i>

11:30-12:00 p.m.	John Lowengrub University of California-Irvine <i>Multiscale Models of Solid Tumor Growth and Angiogenesis</i>	Yekaterina Epshteyn Carnegie Mellon University <i>New Discontinuous Galerkin Methods for the Chemotaxis Model and Closely Related Biomedical Problems</i> Rajat Singhania Virginia Tech <i>Cell Cycle Modeling Using a Hybrid Approach</i>	Regina Liu Rutgers University <i>Mining Massive Text Data: Classification and Tracking Statistics</i>
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12:00-2:00 p.m. **Lunch and Poster Session** Kupfrian 1st floor lobby
Kupfrian 103, 104, 107

MINISYMPOSIA II			
	Mathematical Fluid Dynamics II Kupfrian 117 <i>Chair: Jonathan Luke, NJIT</i>	Mathematical Biology II Kupfrian 118 <i>Chair: Gareth Russell, NJIT</i>	Applied Mathematics I Kupfrian 106 <i>Chair: Gregory A. Kriegsmann, NJIT</i>
2:00-2:30 p.m.	Barbara Wagner Weierstrass Institute <i>On the Wavelength of the Contact-Line Instability of Dewetting Fronts</i>	Lora Billings Montclair State University <i>ADE in Multi-Strain Disease Models</i>	Paul Chow Wayne State University <i>Asymptotic Solutions of Some Randomly Perturbed Nonlinear Wave Equations</i>
2:30-3:00 p.m.	Marc K. Smith Georgia Institute of Technology <i>The Vibration of an Inviscid Incompressible Sessile Drop</i>	Nina Fefferman Princeton University <i>Evolutionary Epidemiology In Silico: Endogenous Social Structure and Disease Defense</i>	Robert O'Malley University of Washington <i>Doing Asymptotics Using the Renormalization Group Method</i>
3:00-3:30 p.m.	Rachel Levy Harvey Mudd College <i>Settling of Particles in a Slurry Flow down an Inclined Plane</i>	Donald Ludwig University of British Columbia <i>Mathematical Bioeconomics of Environmental Change</i>	Charles Tier Illinois Institute of Technology <i>Asymptotic Approximations to Models of Financial Derivatives</i>
3:30-4:00 p.m.	Stephen Childress Courant Institute of Mathematical Sciences-NYU <i>Inertial Effects in Locomotion at Finite and Large Reynolds Numbers</i>	Sebastian Schreiber University of California, Davis <i>Cycling in space: Persistence of rock-scissor-paper metapopulations</i>	Charles Knessl University of Illinois at Chicago <i>Applications of Applied Mathematics Methods to the Analysis of Algorithms and Tree Properties</i>

4:00-4:30 p.m. **Coffee Break** Kupfrian 1st floor lobby

4:30-5:00 p.m. **National Science Foundation Presentation** Theater
Ashwani Kapila

5:00-6:00 p.m.	PLENARY LECTURE II Frank Hoppensteadt , Courant Institute of Mathematical Sciences <i>Multi-scale Methods, Computer Simulations, and Data Mining: Difference Equations and Renewal Equations</i> Introduction by Robert M. Miura	Theater
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6:30 p.m. **Invitational Dinner in Honor of Dr. Daljit S. Ahluwalia** Campus Center Atrium
and in Celebration of the newly endowed Daljit S. Ahluwalia Doctoral Fellowship

PROGRAM SCHEDULE

Tuesday, May 20

8:00-9:00 a.m. **Coffee and Pastries** Kupfrian 1st floor lobby
 Registration and Poster session (all day) Kupfrian 103, 104, 107

9:00-10:00 a.m. **PLENARY LECTURE III** Theater
G. Bard Ermentrout, University of Pittsburgh
When Noise is the Signal: Stochastic Synchronization in Neurons
 Introduction by Amitabha Bose

10:00-10:30 a.m. **Coffee Break** Kupfrian 1st floor lobby

MINISYMPOSIA III				
	Mathematical Fluid Dynamics III	Mathematical Biology III	Statistics II	Waves and Electromagnetics I
	Kupfrian 117 <i>Chair: Michael Booty, NJIT</i>	Kupfrian 118 <i>Chair: Horacio Rotstein, NJIT</i>	Kupfrian 108 <i>Chair: Sundar Subramanian, NJIT</i>	Kupfrian 106 <i>Chair: Yassine Boubendir, NJIT</i>
10:30-11:00 a.m.	Ming-Chih Lai National Chiao Tung University, Taiwan <i>An Immersed Boundary Method for the Simulation of Interfacial Flows with Insoluble Surfactant</i>	Sharon Crook Arizona State University <i>Modeling Activity-Dependent Changes in Dendritic Spine Structure</i>	Jayanta Ghosh Purdue University <i>Motivation and Convergence of Two "New" Fast Algorithms for Estimating the Mixing Distribution in Mixture Models</i>	Jingfang Huang University of North Carolina at Chapel Hill <i>Krylov Deferred Correction Methods for Time Dependent Partial Differential Equations</i>
11:00-11:30 a.m.	Thomas Ward University of California-Los Angeles <i>Electrohydrostatically Driven Flows in Microscale Geometries</i>	Gregory Smith The College of William and Mary <i>Moment Closure for Local Control Models of Calcium-Induced Calcium Release in Cardiac Myocytes</i>	Edsel Peña University of South Carolina <i>Modeling and Analysis of Recurrent Events</i>	Jie Shen Purdue University <i>Efficient and Stable Spectral Methods for the Helmholtz Equation in Exterior Domains</i>
11:30-12:00 p.m.	Shelley Anna Carnegie Mellon University <i>The Dynamics of Tipstreaming in Microfluidic Flow Focusing Devices</i>	Richard Bertram Florida State University <i>Bursting in Pituitary Cells: A Totally Different Animal</i>	Megan Othus Harvard University <i>A Class of Semiparametric Mixture Cure Survival Models with Dependent Censoring</i> Samiran Ghosh Indiana University <i>A Semiparametric Modeling Framework for the Development of Metabonomic Profile and Bio-Marker Discovery Mechanism</i>	Christian Stucchio Courant Institute of Mathematical Sciences-NYU <i>Stable Outgoing Wave Filters for Anisotropic Waves</i>

12:00-1:30 p.m. Lunch and Poster Session

Kupfrian 1st floor lobby
Kupfrian 103, 104, 107

MINISYMPOSIA IV				
	<p>Mathematical Fluid Dynamics IV Kupfrian 117 <i>Chair: Denis Blackmore, NJIT</i></p>	<p>Mathematical Biology IV Kupfrian 118 <i>Chair: Farzan Nadim, NJIT</i></p>	<p>Statistics III Kupfrian 108 <i>Chair: Rose Dios, NJIT</i></p>	<p>Waves and Electromagnetics II Kupfrian 106 <i>Chair: Wooyoung Choi, NJIT</i></p>
1:30-2:00 p.m.	<p>Linda Cummings University of Nottingham <i>Fluid Dynamics and Crystal Deposition in Stented and Catheterised Urinary Tracts</i></p>	<p>Farzan Nadim New Jersey Institute of Technology <i>The Role of Anatomical Structure on Activity in a Gap-Junctionally Coupled Network</i></p>	<p>Kannan Natarajan Novartis Pharmaceuticals, USA <i>Statistical Challenges in Drug Development</i></p>	<p>Thomas Hagstrom The University of New Mexico <i>Accurate Numerical Methods for Time-Domain Scattering Problems</i></p>
2:00-2:30 p.m.	<p>Alan Elcrat Wichita State University <i>Axisymmetric Vortices with Swirl</i></p>	<p>Timothy Lewis University of California, Davis <i>Global Bifurcations and the Appearance of a One-Dimensional Spiral Wave in Excitable Media</i></p>	<p>John Kolassa Rutgers University <i>Conditional Saddlepoint Approximations for Non-Continuous and Non-Lattice Distributions</i></p>	<p>John Pelesko University of Delaware <i>Dynamics of Electrostatic MEMS</i></p>
2:30-3:00 p.m.	<p>Pam Cook University of Delaware <i>Steady and Transient Flows of Entangled Polymeric and Micellar Solutions</i></p>	<p>Paul Bressloff University of Utah <i>Diffusion of Protein Receptors on a Cylindrical Dendritic Membrane with Partially Absorbing Traps</i></p>	<p>Dharam V. Chopra Wichita State University <i>On the Existence and Applications of Balanced Arrays</i></p>	<p>Wooyoung Choi New Jersey Institute of Technology <i>Short-Wave Instability of Internal Solitary Waves and a Regularized Long Wave Model</i></p>
3:00-3:30 p.m.	<p>Sunil Ahuja Princeton University <i>Stabilization of Unstable Steady States in Low-Reynolds Number Flows Past Airfoils</i></p>	<p>Donald Drew Rensselaer Polytechnic Institute <i>Random Spatial Networks: A Biological Solution to the Structure/Transport/Connectivity Problem</i></p>	<p>Ji Meng Loh Columbia University <i>Accounting for Spatial Correlation in the Scan Statistic</i></p>	<p>Maria Cameron Courant Institute of Mathematical Sciences <i>Seismic Velocity Estimation from Time Migration</i> Caroline Muller Courant Institute of Mathematical Sciences <i>Instability and Dissipation of Internal Tides</i></p>

3:30-4:00 p.m. Coffee Break

Kupfrian 1st floor lobby

4:00-5:00 p.m.	PLENARY LECTURE IV I. David Abrahams , University of Manchester, UK <i>Asymptotic Homogenization and Effective Material Properties in Elasticity and Electromagnetics</i> Introduction by Gregory A. Kriegsmann	Theater
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5:00 – 6:00 p.m.	PANEL DISCUSSION <i>Future Challenges in Applied Mathematics and Scientific Computation</i> Stuart S. Antman (University of Maryland), G. Bard Ermentrout (University of Pittsburgh), Joseph B. Keller (Stanford University), and John Lowengrub (University of California-Irvine)	Theater
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6:15-9:00 p.m.	Banquet	Campus Center Atrium
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PROGRAM SCHEDULE

Wednesday, May 21

8:00-9:00 a.m. **Coffee and Pastries** Kupfrian 1st floor lobby
 Registration and Poster session (half day) Kupfrian 103, 104, 107

MINISYMPOSIA V

	Mathematical Fluid Dynamics V Kupfrian 117 <i>Chair: John Bechtold, NJIT</i>	Mathematical Biology V Kupfrian 118 <i>Chair: Jorge Golowasch, NJIT</i>	Statistics IV Kupfrian 108 <i>Chair: Manish Bhattacharjee, NJIT</i>	Waves and Electromagnetics III Kupfrian 106 <i>Chair: Zoi-Heleni Michalopoulou, NJIT</i>
9:00-9:30 a.m.	Aloknath Chakrabarti Indian Institute of Science <i>Scattering of Water Waves by Freely Floating Semi-Infinite Elastic Plates on Water of Finite Depth</i>	Colleen Mitchell University of Iowa <i>Do Neurons Have Sharp Time Windows?</i>	Gerhard Dikta Aachen University of Applied Sciences, Germany <i>The Bootstrap in Binary Model Diagnostics</i>	Rabia Djellouli California State University at Northridge <i>Performance Assessment of a New Class of Local Absorbing Boundary Conditions for Elliptical-Shaped Boundaries in the Low Frequency Regime</i>
9:30-10:00 a.m.	George Biros University of Pennsylvania <i>Numerical Simulation of 2D Fluid Membranes</i>	Michael Collins Rensselaer Polytechnic Institute <i>Physics of an Avian Controversy</i>	John Klein Medical College of Wisconsin <i>Direct Regression Models for Survival Parameters Based on Pseudo-Values</i>	Thomas M. Roberts Air Force Research Laboratory/SNHA <i>Efficient Ranking of Polyomino-Based Antennas</i>

10:00-11:00 a.m. **PLENARY LECTURE V**
Pranab K. Sen, University of North Carolina at Chapel Hill Theater
Whither Biostochastics in Computational Biology and Bioinformatics
 Introduction by Manish Bhattacharjee

11:00-11:30 a.m. Coffee Break Kupfrian 1st floor lobby

11:30-12:30 p.m. **PLENARY LECTURE VI**
Michael Shelley, Courant Institute of Mathematical Sciences-NYU Theater
TBA
 Introduction by Demetrios Papageorgiou

12:30-1:30 p.m. **Lunch and Poster Session** Kupfrian 1st floor lobby
 Removal of posters Kupfrian 103, 104, 107

MINISYMPOSIA VI

	<p>Mathematical Fluid Dynamics/Applied Mathematics/Experimental Kupfrian 117 <i>Chair: David Horntrop, NJIT</i></p>	<p>Mathematical Biology VI Kupfrian 118 <i>Chair: Victor Matveev, NJIT</i></p>	<p>Statistics V Kupfrian 108 <i>Chair: Aridaman Jain, NJIT</i></p>	<p>Waves and Electromagnetics IV Kupfrian 106 <i>Chair: Peter Petropoulos, NJIT</i></p>
1:30-2:00 p.m.	<p>Yassine Boubendir New Jersey Institute of Technology <i>Non-Overlapping Domain Decomposition Method and Boundary Element Method for Helmholtz Equation</i></p>	<p>Arthur Sherman National Institutes of Health <i>Bifurcation Analysis of the Dual Oscillator Model for Pancreatic Beta-Cell Calcium Oscillations</i></p>	<p>Manisha Desai Columbia University <i>Multiple Imputation to Reduce Selection Bias in Molecular Epidemiology Studies with Non-Ignorably Missing Data</i></p>	<p>Richard Evans Rensselaer Polytechnic Institute <i>Convergence of Galerkin Approximations for Differential Eigenvalue Problems with Derivative Discontinuities</i></p>
2:00-2:30 p.m.	<p>Harper Langston New York University <i>Fast Elliptic PDE Solver for Non-homogeneous Force Distributions in Complex Geometries</i></p> <p>Dmitri Tseluiko University of East Anglia, Norwich, United Kingdom <i>Steady Electrified Film Flow Down an Indented Wall</i></p>	<p>Victor Matveev New Jersey Institute of Technology <i>Non-Synchronous Dynamics in Non-Weakly Coupled Inhibitory Networks of Type-I Oscillators</i></p>	<p>Michelle Lacey Tulane University <i>A Sharp Error Probability Estimate for the Reconstruction of Phylogenetic Quartets</i></p>	<p>Steven A. Cummer Duke University <i>Cloaking and Other Material-Based Manipulations of Acoustic Waves</i></p>
2:30-3:00 p.m.	<p>Solmaz Torabi University of California-Irvine <i>Effect of Elastic Energy on Epitaxial Quantum Dots Formation and Growth</i></p> <p>Svetlana Tlupova New Jersey Institute of Technology <i>Domain Decomposition Methods for Solving Stokes-Darcy Systems Based on Boundary Integrals</i></p>	<p>Anthony Kellems Rice University <i>Radical Dimension Reduction of Morphologically Accurate Neuronal Models</i></p> <p>Asya Shpiro New York University, Center for Neural Science <i>Balance Between Noise and Adaptation in Competition Models of Perceptual Bistability</i></p>	<p>Linlin Chen University of Rochester <i>Balancing Type One and Two Errors in Multiple Testing for Differential Expression of Genes</i></p> <p>Xaq Pitkow Center for Theoretical Neuroscience, Columbia University <i>Benchmarks for Vision: Calculation of Arbitrary Statistics for Naturalistic Images</i></p>	<p>Weihua Geng Michigan State University <i>The Matched Interface and Boundary Method Based High-Order Possoin-Boltzmann Equation Solver and its Application on Computing Solvation Forces</i></p> <p>Charles Kiyanda University of Illinois at Urbana-Champaign <i>Reduced Detonation Models for Insensitive High Explosives</i></p>
3:00-3:30 p.m.	<p>Lev Ostrovsky Zel Technologies/University of Colorado <i>Theoretical Models of Strongly Nonlinear Internal Waves</i></p>	<p>Trine Krogh-Madsen Weill Cornell Medical College <i>Termination and Resetting of Reentrant Cardiac Activity</i></p>	<p>Javier Cabrera Rutgers University <i>A New Data Mining Paradigm for Biopharmaceutical Data</i></p>	<p>Catalin Turc University of North Carolina-Charlotte <i>Fast, High-Order, Well-Conditioned Algorithms for the Solution of Three-Dimensional Acoustic and Electromagnetic Scattering Problems</i></p>
3:30-4:00 p.m.	<p>David Nicholls University of Illinois at Chicago <i>Spectral Stability of Traveling Water Waves</i></p>	<p>Ernest Barreto George Mason University <i>Dynamics and Synchronization of Interacting Populations of Oscillators</i></p>	<p>Sundar Subramanian New Jersey Institute of Technology <i>Survival and Hazard Function Estimation for the Missing Censoring Indicator Model</i></p>	<p>Nilima Nigam McGill University, Canada <i>Integral Equation Methods and Vortex Motion on Spheres</i></p>

4:00-4:30 p.m. Coffee Break

Kupfrian 1st floor lobby

End of conference

NJIT CAMPUS MAP



**FACM '08 Banquet
 Site: 1st Floor Atrium
 in Campus Center**

**FACM '08
 Conference Site:
 Kupfrian Hall**