

2015 SEARCDE PROGRAM AT A GLANCE
All events in Sullivan Science Building, UNCG

SATURDAY, OCTOBER 10						
11:00am - 6:00pm	Registration - Sullivan Building Auditorium Lobby					
12:45pm - 12:55pm	Opening remarks Dana Dunn, Provost, UNCG Room 101 (Auditorium)					
1:00pm - 2:00pm	Pavel Drabek: <i>Singular Quasilinear Elliptic Problems on Exterior Domains</i> Room 101 (Auditorium)					
2:00pm - 2:20pm	COFFEE BREAK - Sullivan Building 2nd Floor Lobby					
CONTRIBUTED SESSIONS						
	Session Ia Room 101	Session Ib Room 201	Session Ic Room 200	Session Id Room 233	Session Ie Room 227	Session If Room 203
2:20pm - 2:40pm	Schugart	Rivas	Lorton	W. Feng	Leander	Nikin-Beers
2:40pm - 3:00pm	Zhao	Sim	Xie	Trageser	Lyons	Murad
3:00pm - 3:20pm	P. Feng	Robinson	Sariaydin	Freeze	Ozturk	Laubmeier
3:20pm - 3:40pm	Ashley	Abebe	Okelola	Hoang	Dhar	Lankford
3:40pm - 3:55pm	COFFEE BREAK - Sullivan Building 2nd Floor Lobby					
CONTRIBUTED SESSIONS						
	Session IIa Room 101	Session IIb Room 201	Session IIc Room 200	Session IId Room 233	Session IIe Room 227	Session IIIf Room 203
3:55pm - 4:15pm	Everett	Harrell	Kankanamalage	Neugebauer	Sochaki	Kasti
4:15pm - 4:35pm	Erwin	Benfield	Raffoul	Pathak	Thelwell	Kirby
4:35pm - 4:55pm	Numfor	Kim	Payne	Denton	Parker	Paullet
4:55pm - 5:15pm	Ali	Jin	Akin	Hollon	Bliss	Huang
5:20pm - 6:20pm	H. Thomas Banks: <i>Estimation of Distributed Parameters in Permittivity Models of Composite Dielectric Materials Using Reflectance</i> Room 101 (Auditorium)					
6:30pm - 8:30pm	RECEPTION - Sullivan Building Auditorium Lobby					
SUNDAY, OCTOBER 11						
8:00am - Noon	Registration - Sullivan Building Auditorium Lobby					
7:30am - 8:30am	LIGHT CONTINENTAL BREAKFAST - Sullivan Building 2nd Floor Lobby					
8:30am - 9:30am	Peter Polacik: <i>Propagating Terraces and the Dynamics of Front-like Solutions of Parabolic Equations on the Real Line</i> Room 101 (Auditorium)					
9:30am - 9:50am	COFFEE BREAK - Sullivan Building 2nd Floor Lobby					
CONTRIBUTED SESSIONS						
	Session IIIa Room 101	Session IIIb Room 201	Session IIIc Room 200	Session IIId Room 233	Session IIIe Room 227	Session IIIIf Room 203
9:50am - 10:10am	Lenhart	Cao	X. Zhang	Q. Zhang	Osborne	Avrin
10:10am - 10:30am	Alexiades	Croyle	Chalishajar	Lu	Naik	Xu
10:30am - 10:50am	Elmas	Adhikari	Allan	Y. Zhang	Bekele-Maxwell	Guo
10:50am - 11:10am	Messan	Lam	Sharma	Malhi	Maroncelli	M. Zhang
11:10am - 11:30am	COFFEE BREAK - Sullivan Building 2nd Floor Lobby					
11:30am - 12:30pm	Lisa Fauci: <i>Flagellar Motility: Negotiating Sticky Elastic Bonds and Viscoelastic Networks</i> Room 101 (Auditorium)					
12:30pm - 1:30pm	BOX LUNCH provided - Sullivan Building Auditorium Lobby					
CONTRIBUTED SESSIONS						
	Session IVa Room 101	Session IVb Room 201	Session IVc Room 200	Session IVd Room 233	Session IVe Room 227	Session IVf Room 203
1:30pm - 1:50pm	Agusto	B. Zhang	Mannan	Wan	Marques	Dahal
1:50pm - 2:10pm	Mohammed-Awel	Russell	Moon	Sinani	Liu	Pantha
2:10pm - 2:30pm	Rekha De Silva	Son	Wang	Castle	Ramirez	Wijenayaka
2:30pm - 2:50pm		Morris	Foukzon	Hassan	Gorty	Adivar
2:50pm	CONFERENCE ENDS, COFFEE AVAILABLE - Sullivan Building 2nd Floor Lobby					

2015 SEARCDE PROGRAM

All events in SULLIVAN SCIENCE BUILDING

SATURDAY, OCTOBER 10

12:45pm - 12:55pm **OPENING REMARKS** Room 101 Auditorium

Dana Dunn
Provost, University of North Carolina at Greensboro (UNCG)

1:00pm - 2:00pm **PLENARY LECTURE** Room 101 Auditorium

Singular Quasilinear Elliptic Problems on Exterior Domains

PAVEL DRABEK
University of West Bohemia

Chair: TBA

2:00pm - 2:20pm **COFFEE BREAK** 2nd Floor Lobby

CONTRIBUTED SESSIONS I

SESSION Ia CHAIR: TBA Room 101
2:20pm - 2:40pm Richard Schugart *Connecting local and global sensitivities for a mathematical model in wound healing*
2:40pm - 3:00pm Jia Zhao *A multiphase complex fluids model for cytokinesis of eukaryotes*
3:00pm - 3:20pm Peng Feng *Dynamics and pattern formation in a modified Leslie-Gower model with Allee effect and Bazykin functional response*
3:20pm - 3:40pm Brandon Ashley *Asymptotic tracking and disturbance rejection of the blood glucose regulation system*

SESSION Ib CHAIR: TBA Room 201
2:20pm - 2:40pm Mauricio Rivas *Laplacian eigenproblems on product regions and Sobolev tensor product spaces*
2:40pm - 3:00pm Inbo Sim *Multiplicity of solutions for one-dimensional p -Laplacian with weight functions*
3:00pm - 3:20pm Steve Robinson *A discrete analog of a theorem by Schaaf and Schmitt*
3:20pm - 3:40pm Abraham Abebe *Nonexistence of positive radial radial solution for a class of quasilinear system*

SESSION Ic CHAIR: TBA Room 200
2:20pm - 2:40pm Cody Lorton *Analysis of an elastic Helmholtz problem in weakly random media*
2:40pm - 3:00pm Xiaoxia Xie *Two types of nonlocal diffusions and the convergence to the random/normal diffusion*
3:00pm - 3:20pm Selin Sariaydin *Stochastic approach for nonlinear inversion*
3:20pm - 3:40pm Michael Okelola *Analytical solutions to the partial hedging of the Hamilton-Jacobi-Bellman model in a stochastic volatility environment*

SESSION Id CHAIR: TBA Room 233
2:20pm - 2:40pm Wei Feng *Existence of wavefront solutions in mixed monotone reaction-diffusion systems*
2:40pm - 3:00pm Jeremy Trageser *A fourth-order nonlocal operator and its connection to its local analogue*
3:00pm - 3:20pm Michael Freeze *Asymptotic behavior and wavefront solutions in a reaction-diffusion model of a food chain with ratio-dependent functional response*
3:20pm - 3:40pm Nguyen Hoang *The recovery of a parabolic equation from measurements at a single point*

SESSION Ie CHAIR: TBA Room 227
2:20pm - 2:40pm Rachel Leander *Controlling synchrony in a network of Kuramoto oscillators with time-varying*
2:40pm - 3:00pm Jeffrey Lyons *The derivative of a solution to a second order parameter dependent boundary value problem with a nonlocal integral boundary condition*
3:00pm - 3:20pm Ozkan Ozturk *On nonoscillatory solutions of dynamic systems of first order dynamic equations on time scales*
3:20pm - 3:40pm Sougata Dhar *Lyapunov-type inequalities for third-order linear differential equations*

CONTRIBUTED SESSIONS I (continued)

SESSION If	CHAIR: TBA	Room 203
2:20pm - 2:40pm	Ryan Nikin-Beers	<i>The role of antibody in enhancing dengue viral infection</i>
2:40pm - 3:00pm	Neha Murad	<i>Modelling pesticide treatment effects on <i>Lygus hesperus</i> in cotton fields</i>
3:00pm - 3:20pm	Amanda Laubmeier	<i>Parameter estimation on size-based insect communities</i>
3:20pm - 3:40pm	George Lankford	<i>Mathematical model of hepatitis C viral dynamics using a combination therapy of interferon, ribavirin, and telaprevir</i>

3:40pm - 3:55pm **COFFEE BREAK** 2nd Floor Lobby

CONTRIBUTED SESSIONS II

SESSION IIa	CHAIR: TBA	Room 101
3:55pm - 4:15pm	Rebecca Everett	<i>A mathematical methodology for determining information content in demographic data for ecotoxicology studies</i>
4:15pm - 4:35pm	Samantha Erwin	<i>Germinal center dynamics during non-chronic and chronic disease</i>
4:35pm - 4:55pm	Eric Numfor	<i>Optimal insecticide treated bed-net coverage and malaria treatment in a malaria-HIV co-infection model</i>
4:55pm - 5:15pm	Jaffar Ali	<i>On the solutions of the Tumor Growth Model with an intervention term</i>

SESSION IIb	CHAIR: TBA	Room 201
3:55pm - 4:15pm	Evans Harrell	<i>Agmon estimates and exponential localization on quantum graphs</i>
4:15pm - 4:35pm	Michael Benfield	<i>Geometry of hyperbolic conservation laws</i>
4:35pm - 4:55pm	Seonguk Kim	<i>Perturbation of Gross-Pitaevskii equation</i>
4:55pm - 5:15pm	Jiayin Jin	<i>Global dynamics of boundary droplets for the 2-d mass-conserving Allen-Cahn equation</i>

SESSION IIc	CHAIR: TBA	Room 200
3:55pm - 4:15pm	Hasala Kankanamalage	<i>A Lyapunov-Krasovskii characterization of output stability for systems with time delays</i>
4:15pm - 4:35pm	Youssef Raffoul	<i>Lyapunov functionals and stability in nonlinear finite delay Volterra discrete systems</i>
4:35pm - 4:55pm	Catherine Payne	<i>Stability conditions for linear neutral delay differential equations</i>
4:55pm - 5:15pm	Elvan Akin	<i>Oscillation criteria for fourth order nonlinear delay differential equations with a middle term</i>

SESSION II d	CHAIR: TBA	Room 233
3:55pm - 4:15pm	Jeffrey Neugebauer	<i>Existence of solutions of singular fractional boundary value problem</i>
4:15pm - 4:35pm	Nimisha Pathak	<i>Lyapunov-type inequality for fractional differential equation under mixed and fractional integral boundary conditions</i>
4:35pm - 4:55pm	Zachary Denton	<i>Generalized monotone method for Riemann-Liouville fractional multi-order 2-systems with numerical results</i>
4:55pm - 5:15pm	Christina Hollon	<i>Existence of positive solutions of a fractional boundary value problem</i>

SESSION IIe	CHAIR: TBA	Room 227
3:55pm - 4:15pm	James Sochaki	<i>Power series solutions for delay differential equations</i>
4:15pm - 4:35pm	Roger Thelwell	<i>A power series approach to stability and control</i>
4:35pm - 4:55pm	G. Edgar Parker	<i>An Update Theorem and the Boundary of $P_{m,n}$</i>
4:55pm - 5:15pm	Karen Bliss	<i>Modeling in the introductory differential equations classroom</i>

SESSION II f	CHAIR: TBA	Room 203
3:55pm - 4:15pm	Dinesh Kasti	<i>The existence and construction of a lift of sublattice of attractors to the lattice of attracting neighborhoods</i>
4:15pm - 4:35pm	Nick Kirby	<i>Step dynamics in the presence of elastic step interactions</i>
4:35pm - 4:55pm	Joseph Paultet	<i>A BVP nonexistence proof using Green's theorem</i>
4:55pm - 5:15pm	Qiuling Huang	<i>Chaos of non-autonomous discrete dynamic systems</i>

5:20pm - 6:20pm **PLENARY LECTURE** Room 101 Auditorium

Estimation of Distributed Parameters in Permittivity Models of Composite Dielectric Materials Using Reflectance

H. THOMAS BANKS

North Carolina State University

Chair: TBA

6:30pm - 8:30pm **RECEPTION** 1st Floor Auditorium Lobby

SUNDAY, OCTOBER 11

7:30am - 8:30am **LIGHT CONTINENTAL BREAKFAST** 2nd Floor Lobby

8:30am - 9:30am **PLENARY LECTURE** Room 101 Auditorium

Propagating Terraces and the Dynamics of Front-like Solutions of Parabolic Equations on the Real Line

PETER POLACIK

University of Minnesota

Chair: TBA

9:30am - 9:50am **COFFEE BREAK** 2nd Floor Lobby

CONTRIBUTED SESSIONS III

SESSION IIIa	CHAIR: TBA	Room 101
9:50am - 10:10am	Suzanne Lenhart	<i>Canine distemper outbreak modeled in an animal shelter</i>
10:10am - 10:30am	Vasilios Alexiades	<i>Parameter estimation in bacterial chemotaxis</i>
10:30am - 10:50am	Mustafa Elmas	<i>Signal transduction pathway in bacterial chemotaxis</i>
10:50am - 11:10am	Komi Messan	<i>A two-patch prey-predator model with multiple foraging strategies in predators</i>
SESSION IIIb	CHAIR: TBA	Room 201
9:50am - 10:10am	Dat Cao	<i>Pointwise estimates of solutions to sublinear elliptic equations</i>
10:10am - 10:30am	Laura Croyle	<i>L^p solutions to the mixed boundary value problem in C^2 domains</i>
10:30am - 10:50am	Dhruba Adhikari	<i>Invariance of domain and eigenvalues for perturbations of densely defined linear maximal monotone operators</i>
10:50am - 11:10am	Nguyen Lam	<i>New Sobolev embeddings in the limiting case</i>
SESSION IIIc	CHAIR: TBA	Room 200
9:50am - 10:10am	Xu Zhang	<i>A nonconforming rotated Q_1 immersed finite element method</i>
10:10am - 10:30am	D. Chalishajar	<i>Trajectory controllability of nonlinear integro-differential system: an analytical and a numerical approach</i>
10:30am - 10:50am	Fathi Allan	<i>Mathematical modeling of air flow through a coupled cooled-heated wind tunnel</i>
10:50am - 11:10am	Ramjee Sharma	<i>Parallel dual-Petrov-Galerkin method for nonlinear partial differential equations</i>
SESSION III d	CHAIR: TBA	Room 233
9:50am - 10:10am	Qingtian Zhang	<i>Uniqueness of conservative solution of Camassa-Holm and variational wave equations</i>
10:10am - 10:30am	Xin Lu	<i>Grain Boundary Characteristic Distribution</i>
10:30am - 10:50am	Yaowei Zhang	<i>The Bourgain type spaces and Schrödinger operators</i>
10:50am - 11:10am	Satbir Malhi	<i>The spectral mapping theorem for the Klein-Gordon equations</i>

CONTRIBUTED SESSIONS III (continued)

SESSION IIIe	CHAIR: TBA	Room 227
9:50am - 10:10am	Jason Osborne	<i>A differential geometric-based tracking control algorithm on a sphere</i>
10:10am - 10:30am	Shibabrat Naik	<i>Partial control of escape dynamics</i>
10:30am - 10:50am	Kidist Bekele-Maxwell	<i>The complex-step derivative technique for sensitivity analysis</i>
10:50am - 11:10am	Dan Maroncelli	<i>Scalar multi-point boundary value problems at resonance coupling</i>
SESSION IIIf	CHAIR: TBA	Room 203
9:50am - 10:10am	Joel Avrin	<i>High-order Galerkin convergence and boundary behavior of the 3-D Navier-Stokes equations with applications to a subgrid-scale turbulence model</i>
10:10am - 10:30am	Xiang Xu	<i>A gradient flow approach to the Poisson-Nernst-Planck equations</i>
10:30am - 10:50am	Daniel Guo	<i>Numerical solution of differential equations in fluid dynamics</i>
10:50am - 11:10am	Mingji Zhang	<i>Ion size effects on ionic flows via Poisson-Nernst-Planck models</i>
11:10am - 11:30am	COFFEE BREAK	2nd Floor Lobby
11:30am - 12:30pm	PLENARY LECTURE	Room 101 Auditorium
		<i>Flagellar Motility: Negotiating Sticky Elastic Bonds and Viscoelastic Networks</i>
	LISA FAUCI	
	Tulane University	
	Chair: TBA	
12:30pm - 1:30pm	BOX LUNCH (provided)	2nd Floor Lobby

CONTRIBUTED SESSIONS IV

SESSION IVa	CHAIR: TBA	Room 101
1:30pm - 1:50pm	Folashade Augusto	<i>Tree harvesting in age-structured forests subject to beetle infestations</i>
1:50pm - 2:10pm	J. Mohammed-Awel	<i>Quantifying the impact of decay in bed-net efficacy on malaria transmission</i>
2:10pm - 2:30pm	K. Rekha De Silva	<i>A model of Johnes disease with the disease transmission through the environment</i>
SESSION IVb	CHAIR: TBA	Room 201
1:30pm - 1:50pm	Bo Zhang	<i>Stability and Lyapunov theory for fractional differential equations</i>
1:50pm - 2:10pm	Nicholas Russell	<i>Anti-periodic solutions to a higher order difference equation with a p-Laplacian</i>
2:10pm - 2:30pm	Byungjae Son	<i>Positive radial solutions to classes of singular problems on the exterior domain of a ball</i>
2:30pm - 2:50pm	Quinn Morris	<i>Positive radial solutions for superlinear, semipositone problems on the exterior of a ball</i>
SESSION IVc	CHAIR: TBA	Room 200
1:30pm - 1:50pm	Forest Mannan	<i>Singly-periodic Stokes flow and applications</i>
1:50pm - 2:10pm	Kihyo Moon	<i>An immersed discontinuous Galerkin method for acoustic wave propagation in nonhomogeneous media</i>
2:10pm - 2:30pm	Taige Wang	<i>Development of shear banding of a thixotropic fluid in Poiseuille flow</i>
2:30pm - 2:50pm	Jaykov Foukzon	<i>New scenario for transition to slow 3-D turbulence</i>
SESSION IVd	CHAIR: TBA	Room 233
1:30pm - 1:50pm	Xiang Wan	<i>Global wellposedness and uniform stability of a quasilinear thermo-elastic PDE system</i>
1:50pm - 2:10pm	Klajdi Sinani	<i>Model reduction for unstable systems</i>
2:10pm - 2:30pm	Lucas Castle	<i>Optimal control in a free boundary fluid elasticity interaction</i>
2:30pm - 2:50pm	Anthony R. Hassan	<i>The effect of internal heat generation on steady hydromagnetic poiseuille fluid flow between two parallel porous plates</i>

CONTRIBUTED SESSIONS IV (continued)

SESSION IVe	CHAIR: TBA	Room 227
1:30pm - 1:50pm	Rafael Marques	<i>Henstock-Kurzweil integration: applications and numerical methods</i>
1:50pm - 2:10pm	Sherry Liu	<i>Existence of positive solutions of fractional boundary value problems involving bounded linear operators</i>
2:10pm - 2:30pm	Diego Ramirez	<i>Generalized monotone iterative technique for initial value problem of fractional integrodifferential equation with Caputo derivative</i>
2:30pm - 2:50pm	Lakshmi Gorty	<i>The finite generalized Hankel-Clifford Transformation of fifth kind</i>
SESSION IVf	CHAIR: TBA	Room 203
1:30pm - 1:50pm	Rajendra Dahal	<i>An application of a new cone to semipositone discrete boundary value problems</i>
1:50pm - 2:10pm	Buddhi Pantha	<i>Early disease dynamics in an inhalational anthrax infection</i>
2:10pm - 2:30pm	Thanuka Wijenayaka	<i>Analysis of the Error in an Iterative Algorithm for Solution of the Regulator Equations for Linear Distributed Parameter Control Problems</i>
2:30pm - 2:50pm	Murat Adivar	<i>Discrete exponential dichotomy and almost automorphic solutions of discrete delayed neutral dynamic system</i>