Special Session Honoring John Baxley I
Manchester Hall Room 124
Session Chair: Suzanne Lenhart
3:45pm-5:45pm

3:45pm-4:05pm: Chhetri, M. “Positive Solutions for a Class of $p$-Laplacian Superlinear Semipositone Problems”

4:10pm-4:30pm: Rudd, M. “Statistical Functional Equations and $p$-Harmonic Functions”

4:35pm-4:55pm: Goddard, J. “Diffusive Logistic Equation with Negative Density-Dependent Emigration on the Boundary”

5:00pm-5:20pm: Fabiano, R. “Semidiscrete Approximation for LQR Control of Delay-Differential Equations”

5:25pm-5:45pm: Butler, D. “Existence of Alternate Steady States in a Phosphorus Cycling Model”
### Contributed Session 1b

Manchester Hall Room 125  
Session Chair: Michael Kelly  
3:45pm-5:45pm

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<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>3:45pm-4:05pm</td>
<td>Agusto, F.</td>
<td>&quot;Optimal Control of Tuberculosis Treatment in a Two-Strain Tuberculosis-HIV/AIDS Co-infection Model&quot;</td>
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<td>4:10pm-4:30pm</td>
<td>Martinez, M.</td>
<td>&quot;Optimal Control of Integrodifference Equations in a Host-Pathogen System&quot;</td>
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<tr>
<td>4:35pm-4:55pm</td>
<td>McCarthy, M.</td>
<td>&quot;Modeling Facultative Paedomorphosis in Arizona Tiger Salamanders&quot;</td>
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<tr>
<td>5:00pm-5:20pm</td>
<td>Numfor, E.</td>
<td>&quot;Optimal Control Applied to Coupled Within-Host and Between-Host Models&quot;</td>
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<tr>
<td>5:25pm-5:45pm</td>
<td>Stoyanov, M.</td>
<td>&quot;High Dimensional Multiphysics Metamodelling for Combustion Engine Stability&quot;</td>
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Contributed Session 1c
Manchester Hall Room 121
Session Chair: John Roop
3:45pm-5:45pm


4:10pm-4:30pm: Lyons, J. “Existence of a Positive Solution for a Right Focal Dynamic Boundary Value Problem”

4:35pm-4:55pm: Maroncelli, D. “Weakly Nonlinear Boundary Value Problems with Impulses”

5:00pm-5:20pm: Chhetri, S. “Solutions to Dynamic Equations on Varying Time Scales”

5:25pm-5:45pm: Sutherland, S. “A Fourth Order Singular Three-Point Right Focal BVP”
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>3:45pm-4:05pm</td>
<td>Ball, K.</td>
<td>“Structure-Preserving Numerical Integration of Hamel’s Differential Equations”</td>
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<td>4:10pm-4:30pm</td>
<td>Chaabane, N.</td>
<td>“An Optimal LDG Method”</td>
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<td>4:35pm-4:55pm</td>
<td>Foster, E.</td>
<td>“Finite Element Solution to the Pure Stream Function Form of the Stationary Quasi-Geostrophic Flow Equations”</td>
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<tr>
<td>5:00pm-5:20pm</td>
<td>Muniswamy, S.</td>
<td>“Numerical Application of Generalized Monotone Method for Population Models”</td>
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<tr>
<td>5:25pm-5:45pm</td>
<td>Sadhu, S.</td>
<td>“Asymptotic Behavior of Solutions of a BVP Arising from Fluid Mechanics”</td>
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### Contributed Session 1e
Manchester Hall Room 020
Session Chair: Brian Pigott
3:45pm-5:45pm

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>3:45pm-4:05pm</td>
<td>Bradshaw, Z.</td>
<td>“Geometric Measure-type Regularity Criteria for the 3D Magnetohydrodynamical System”</td>
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<tr>
<td>4:10pm-4:30pm</td>
<td>Denzler, J.</td>
<td>“Higher Order Time Asymptotics of Fast Diffusion by Dynamical System Approach”</td>
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<tr>
<td>4:35pm-4:55pm</td>
<td>Farlow, K.</td>
<td>“The Reflected Quasipotential: Characterization and Exploration”</td>
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<tr>
<td>5:00pm-5:20pm</td>
<td>Jiang, M.</td>
<td>“Traveling wave Solutions and Periodic Solution in Coupled Chua’s Circuits”</td>
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**Special Session Honoring John Baxley II**  
Manchester Hall Room 124  
Session Chair: Suzanne Lenhart  
10:00am-12:00pm

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<thead>
<tr>
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<tbody>
<tr>
<td>10:00am-10:20am</td>
<td>Lenhart, S.</td>
<td>“Optimal Control of Convective Coefficients in PDE Population Models”</td>
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<tr>
<td>10:25am-10:45am</td>
<td>Abernathy, K.</td>
<td>“Multiple Positive Solutions to Singular Boundary Value Problems”</td>
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<tr>
<td>10:50am-11:10am</td>
<td>Abernathy, Z.</td>
<td>“Existence of Periodic Solutions to Nonlinear Difference Equations at Full Resonance”</td>
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<tr>
<td>11:15am-11:35am</td>
<td>Islam, M.</td>
<td>“Asymptotically Stable Solutions of a Nonlinear Volterra Integral Equation”</td>
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<tr>
<td>11:40am-12:00 noon</td>
<td>Ko, E.</td>
<td>“Positive Solutions for Elliptic Equations with Nonlinear Boundary Conditions arising in a Theory of Thermal Explosion”</td>
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Contributed Session 2b
Manchester Hall Room 125
Session Chair: Maeve McCarthy
10:00am-12:00pm

10:00am-10:20am: Bintz, J. “Modeling Spatial Heterogeneity for Clostridium difficile Transmission in Healthcare Settings”

10:25am-10:45am: Ciupé, S. “Models of Immune Tolerance and Activation in HBV Infection”

10:50am-11:10am: Kenz, Z. “Arterial Stenosis: Modeling and the Inverse Problem”


11:40am-12:00 noon: Feng, W. “Traveling Fronts in a Reaction Diffusion System with Spatio-temporal Delayed Competition”
Contributed Session 2c
Manchester Hall Room 121
Session Chair: Sarah Raynor
10:00am-12:00pm

10:00am-10:20am: **Ozer, A.**
“Modeling Piezoelectric Beams including Magnetic Effects and Recent Stabilization Results”

10:25am-10:45am: **Adam, J.**
“‘Rainbows’ in Homogeneous and Radially Inhomogeneous Spheres: Connections with Ray, Wave, and Potential Scattering Theory”

10:50am-11:10am: **Pohrivchak, M.**
“Applications of the Refractive Index using Ray and Wave Theory”

11:15am-11:35am: **Nuntaplook, U.**
“The Scattering of Electromagnetic Waves in Radially Inhomogeneous Sphere: Morphology-dependent Resonances (MDRs) and the S-matrix Poles”

11:40am-12:00 noon: **Du, J.**
“The Kelvin-Helmholtz Instability Acoustics Waves of Quadruple Supersonic Jets Flows—Analytic Solutions of Bessel Equations on Multiple Cylinders”
Contributed Session 2d
Manchester Hall Room 122
Session Chair: Steve Robinson
10:00am-12:00pm


10:25am-10:45am: Ma, B. “A Second Order Finite Difference Scheme for a Structured Erythropoiesis Model Subject to Malaria Infection”

10:50am-11:10am: Fourrier, N. “Stability and Numerical Analysis of Semigroups arising from a Wave Equation with Wentzell Boundary Conditions”


11:40am-12:00 noon: Seneratne, D. “Immersed Interface Method for Pennes’ Bio Heat Transfer Equation”
Contributed Session 2e
Manchester Hall Room 020
Session Chair: Jerome Goddard
10:00am-12:00pm

10:00am-10:20am: **Kramer, B.** “Optimal and Suboptimal LQR Control for a Coupled Burgers Equation”


10:50am-11:10am: **Lefler, C.** “Schrodinger Equation with Dynamic Boundary Conditions”


11:40am-12:00 noon: **Kumar, M.** “On Invariant Solutions of Steady State Navier-Stokes Equations”
**Contributed Session 3a**
Manchester Hall Room 124
Session Chair: Maya Chhetri
3:00pm-5:00pm

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<td>3:00pm-3:20pm</td>
<td>Kalappattil, L.</td>
<td>“Semipositone Problems with Falling Zeros on Exterior Domains”</td>
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<td>3:50pm-4:10pm</td>
<td>Neugebauer, J.</td>
<td>“Periodic Solutions of Volterra Type Integral Equation with Finite Delay on a Time Scale”</td>
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<td>4:15pm-4:35pm</td>
<td>Seelbach, C.</td>
<td>“Positive Solutions of a Second Order Difference Equation”</td>
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<td>4:40pm-5:00pm</td>
<td>Kapoor, S.</td>
<td>“Spectral Collocation Approach for the Solution of Nonlinear Coupled Differential Equation”</td>
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Contributed Session 3b
Manchester Hall Room 125
Session Chair: Folashade Agusto
3:00pm-5:00pm

3:00pm-3:20pm: **Hou, X.** “Mutual Inclusion in a Nonlocal Lotka Volterra System”
3:25pm-3:45pm: **Nunes, V.** “Applications and Properties of Frechet Sensitivity Analysis for the Convection-Diffusion Equation”
3:50pm-4:10pm: **Bila, N.** “Symmetry Reductions for the Tzitzeica Curve Differential Equation”
4:15pm-4:35pm: **Yadav, P.** “Application of Navier Stokes and Brinkman Equation in the Motion of a Porous Cylindrical Shell in a Concentric Cylindrical Cavity”
Contributed Session 3c
Manchester Hall Room 121
Session Chair: Matthew Rudd
3:00pm-5:00pm

3:00pm-3:20pm: Wells, D. “A Two-Level Method for Solving the Steady-State Quasigeostrophic Equations”

3:25pm-3:45pm: Chapman, J. “Positivity of Lyapunov Exponents for the Anderson Model and a Random Block Operator Model”

3:50pm-4:10pm: Inozemtseva, I. “Generalized Periodic Solutions of Linear Systems with Slowly Varying Parameters”

4:15pm-4:35pm: Fatthallah-Shaykh, H. “Stability and Limit Cycles of Networks”

4:40pm-5:00pm: Lu, Y. “Asymptotic Stabilization of a Nonlinear Fluid Structure Interaction”
Contributed Session 3d
Manchester Hall Room 122
Session Chair: David Hartenstine
3:00pm-4:35pm

3:00pm-3:20pm: **Moghraby, A.** “Retrieving Time-Independent Structures from Time-Dependent Flows”

3:25pm-3:45pm: **Redd, T.** “Relative Dispersion As a Tool for Manifold Identification”

3:50pm-4:10pm: **Pigott, B.** “Polynomial-in-time upper bounds for the orbital instability of the subcritical generalized Korteweg-de Vries equations”

4:15pm-4:35pm: **Sumitra** “Solution of Integral Equations using Fixed Point Theorem in Symmetric G-Metric Spaces”

4:40pm-5:00pm: **Kumar, S.** “A domain decomposition method and He’s homotopy perturbation method for solving the reaction–diffusion partial differential equation”
**Contributed Session 3e**  
Manchester Hall Room 020  
Session Chair: Rich Fabiano  
3:00pm-5:00pm

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<td>Hagedorn, G.</td>
<td>“A Minimal Uncertainty Product for One Dimensional Semiclassical Wave Packets”</td>
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<td>Bowman, S.</td>
<td>“Rigorous Justification of the Three-Body Impact Parameter Approximation”</td>
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<td>3:50pm-4:10pm</td>
<td>Wang, T.</td>
<td>“The Cauchy problem for a 1D Compressible Viscous Micropolar Fluid Model: Analysis of the Stabilization and the Regularity”</td>
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<td>4:15pm-4:35pm</td>
<td>Spencer, J.</td>
<td>“Min-Max Game Theory for Navier-Stokes Equations”</td>
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<td>4:40pm-5:00pm</td>
<td>Lowman, N.</td>
<td>“Dispersive Shock Waves in Compacting Porous Media Flow”</td>
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