# Jonathan Goldfarb

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## Education

**Florida Institute of Technology** **Melbourne, FL**
*PhD, Applied Mathematics* *2009–2016 (Expected)*
Dissertation Topic: *On the Optimal Control of Free Boundary Problems for Second Order Parabolic Equations*

**Florida Institute of Technology** **Melbourne, FL**
*BS, Environmental Sciences* *2005–2009*

## Experience

**Florida Institute of Technology** **Melbourne**
*Graduate Student Assistant* *August 2009–May 2012, August 2015–May 2016*

- Instructional Experience: Calculus 1 (TA coordinator) and Calculus 2 • Applied Statistical Analysis • Probability and Statistics • Differential Equations with Linear Algebra • Introduction to Partial Differential Equations • Models in Applied Math • Applied Discrete Math • Theory of Stochastic Processes.
- Cofounder and president of Florida Tech Society for Industrial and Applied Mathematics Student chapter, 2012–2014.
- Developed models in MATLAB, R, and Julia for applications in statistics and physics relevant to instruction and research.

**Florida Tech REU in PDEs and Dynamical Systems** **Melbourne**
*Graduate Mentor* *May 2014–August 2014, May 2015–August 2015*

- Completed research in NSF supported program as the lead member of groups working in the fields of fields of Nonlinear PDEs, Inverse Free Boundary Problems, and Dynamical Systems and Chaos Theory.
- Implemented numerical and computational tools in support of research in C, MATLAB, and Julia.
- Created website and custom application management system implemented in PHP/SQL, with Python (back-end/data processing) and Javascript (front-end).

**Florida Institute of Technology** **Melbourne**
*Instructor* *August 2012–May 2015*

- Taught Algebra, Calculus, Introduction to Partial Differential Equations, and Statistics courses.
- SIAM Southeastern Atlantic Section conference organizer under chair Dr. Ugur Abdulla. Created document preparation pipeline (in Python) for conference website and program.

## Core Skills

**Platforms**: Linux, Unix, and Windows

**Languages**: C, C ++, C#, FORTRAN, IDL, JavaScript, Julia, LaTeX, Maxima, Perl, PHP, Python, R, SQL

**Tools & Libraries**: IDV, Grads, Gempak, Mathematica, MATLAB, PETSc, Sage, SPSS, Sundials, ViSit

## Research Interests and Topics

**PDE**: Inverse problems, mathematical physics and modeling, qualitative theory for nonlinear equations, free boundary problems, control problems, degenerate and non-uniformly parabolic equations

**Numerical Methods and Algorithm Development**, **Optimization**, **and Functional Analysis**.

*Publication/conference talks and more details in my CV at http://jgoldfar.github.io/media/cv.pdf.*