



25th Southeastern Analysis Meeting  
National Science Foundation Grant DMS-0849032, Co-PI  
Funding Period: March 1, 2009-February 28, 2010.

College of Arts and Sciences Faculty Development Grant  
University of South Florida  
Funding Period: January 1, 2007-August 31, 2007.

University of South Florida International Travel Grant  
Funding Period: Summer 2006.

College of Arts and Sciences Matching International Travel Grant  
University of South Florida  
Grant awarded, but unfunded; conflict with International Travel Grant.

University of South Florida New Researcher Grant  
Title: The Isoperimetric Problem in Grushin-type Spaces  
Funding Period: May 1, 2005-April 30, 2006.

College of Arts and Sciences Faculty Development Grant  
University of South Florida  
Funding Period: May 1, 2004-December 31, 2004.

## **TEACHING EXPERIENCE:**

*Assistant Professor/Associate Professor/Professor*, August 2003-present  
University of South Florida, Tampa, Florida

Undergraduate: Business Calculus, Engineering Calculus I, II and III,  
Intermediate Analysis, Vector Calculus, Differential Equations,  
Partial Differential Equations, Bridge to Abstract Mathematics,  
Complex Variables, Linear Algebra, Differential Geometry, Modern Geometry.

Graduate: Geometric Measure Theory (Topics course),  
Methods of Applied Math, Partial Differential Equations I and II,  
Advanced Linear Algebra, Dynamical Systems I, Differential Geometry,  
Control Theory, Topology I and II (wrote Ph.D. qualifying exams).

Chose textbooks, structured course, planned syllabi.

*NSF VIGRE Postdoctoral Fellow*, August 2000-May 2003

University of Michigan, Ann Arbor, Michigan

Calculus II, Fourier Analysis and Applications,  
Advanced Calculus, Advanced Math for Engineers.

Chose textbooks and content, created syllabi and exams.

*Visiting Assistant Professor*, August 1999-July 2000  
University of Arkansas, Fayetteville, Arkansas  
Calculus III, Differential Equations, Vector Spaces.  
Structured course, wrote syllabi and exams.

*Teaching Fellow/Assistant*, August 1993-May 1999  
University of Pittsburgh, Pittsburgh, Pennsylvania  
*Calculus Computer Lab Coordinator*  
Oversaw the use of *Mathematica* for all Calculus courses.  
Coordinated Teaching Asst. and Undergraduate Asst. lab office hours.

*Lecturer and Recitation Leader*  
Conducted recitations for Calculus I and II.  
Lectured Business Calculus and Calculus I.  
Coordinated syllabi and *Mathematica* assignments.  
Created exams, graded and supervised Teaching Assistants.

*Teaching Assistant*, August 1991-May 1993  
Purdue University, West Lafayette, Indiana  
Led recitations for Calculus I.  
Lectured Calc. for Liberal Arts Majors and Calc. for Technology Majors.  
Coordinated syllabi and created exams.

## **PUBLICATIONS:**

1. *Existence and Uniqueness of Viscosity Solutions to the Infinity Laplacian Relative to a Class of Grushin-Type Vector Fields*  
Joint with Zachary Forrest.  
Submitted for publication.
2. *Generalizations of the Drift Laplace Equation over the Quaternions in a Class of Grushin-Type Spaces*  
Joint with Keller BlackwWu7nr publication.
- 2.



23. *A Comparison principle for a class of subparabolic equations in Grushin-type spaces.*

## GRADUATE STUDENTS:

1. Meagan McNamee, Master's Thesis Advisor. Graduated 2005.
2. Ena Salter, Master's Thesis Committee Member. Graduated 2005.
3. Andrew Purcell, Master's Thesis Advisor. Graduated 2006.
4. Sarah Bleiler, Master's Thesis Committee Member. Graduated 2008.
5. Elliot Findley, Ph.D. Committee Member. Graduated 2009.
6. Konstantinos Dalamagkidis, (Comp. Sci. and Eng.), Ph.D. Committee Member. Graduated 2010.
7. Kristen Childers, Master's Thesis Advisor. Graduated 2011.
8. Butch Knudsen (Chemistry), Ph.D. Committee Member. Graduated 2013.
9. James Klinedinst, Master's Thesis Advisor. Graduated 2014.
10. Dewey Estep (University of Cincinnati), Ph.D. Committee Member. Graduated 2015.
11. Yue Sun, Master's Thesis Committee Member. Graduated 2016.
12. Robert Freeman, Ph.D. Thesis Advisor. Graduated 2020.
13. Zachary Forrest, Ph.D. Thesis Advisor. Graduation expected 2024.

## UNDERGRADUATE STUDENTS:

1. Johnathan Gray, Undergraduate Honors Thesis Advisor. Graduated 2015.
2. Keller Blackwell, Undergraduate Thesis Advisor/Goldwater Fellowship Application Advisor. Graduated 2020. Currently a Knight-Hennessy Scholar at Stanford University (Computer Science).
3. Alejandro Cano, Undergraduate Mentor. Graduated 2022. Currently at Purdue University (Mathematics).
4. Alexander Brower, Undergraduate Mentor. Graduated 2022. Currently at University of Georgia (Mathematics).

## INVITED ADDRESSES:

1. *University of Pittsburgh Department of Mathematics Colloquium*  
University of Pittsburgh, Pittsburgh, PA, Sept. 24, 2021.
2. *The Eighth Ohio River Analysis Meeting*  
University of Kentucky, Lexington, KY, Mar. 24-25, 2018.
3. *University of Cincinnati Analysis Seminar*  
University of Cincinnati, Cincinnati, OH, Mar. 16, 2016.
4. *The Sixth Ohio River Analysis Meeting*  
University of Kentucky, Lexington, KY, Mar. 12-13, 2016.
5. *The Fifth Ohio River Analysis Meeting*  
University of Cincinnati, Cincinnati, OH, Feb. 28-Mar. 1, 2015.
6. *University of Cincinnati Graduate Student Seminar*  
Cincinnati, OH, Mar. 11, 2014.
7. *University of Cincinnati Mathematics Dept. Colloquium*  
Cincinnati, OH, Mar. 11, 2014.
8. *The Fourth Ohio River Analysis Meeting*  
University of Kentucky, Lexington, KY, Mar. 8-9, 2014.

9. *The Third Ohio River Analysis Meeting*  
University of Cincinnati, Cincinnati, OH, Mar. 9-10, 2013.
10. *AMS Sectional Meeting*  
Special Session on Analysis in Metric Spaces  
University of South Florida, Tampa, FL, Mar. 10-11, 2012.
11. *AMS Sectional Meeting*  
Special Session on Geometric Aspects of Analysis and Measure Theory  
Cornell University, Ithaca, NY, Sept. 10-11, 2011.
12. *Recent Developments on  $L$ -in nity Variational Problems and Associated  
Nonlinear Partial Di erential Equations*  
University of Kentucky, Lexington, KY, May 12-14, 2011.
13. *AMS-MAA Joint Mathematics Meeting*  
AMS Special Session on Dirac Operators  
New Orleans, LA, Jan. 6-9, 2011.
14. *AMS Sectional Meeting*  
Special Session on Geometric Function Theory and Analysis on Metric Spaces  
University of Kentucky, Lexington, KY, Mar. 27-28, 2010.
15. *University of Cincinnati Mathematics Dept. Colloquium*  
Cincinnati, OH, Dec. 5, 2009.
16. *University of Pittsburgh Mathematics Dept. Colloquium*  
Pittsburgh, PA, July 25, 2008.
17. *University of Cincinnati Mathematics Dept. Colloquium*  
Cincinnati, OH, Oct. 25, 2007.
18. *AMS Sectional Meeting*  
Special Session on Subelliptic PDEs and Sub-Riemannian Geometry  
University of Arkansas, Fayetteville, AR, Nov. 3-4, 2006.
19. The Banach Center Conference on Analysis and Partial Di erential Equations  
in honor of Professor Bogdan Bojarski  
Bedlewo, Poland, June 19-23, 2006.
20. *AMS Sectional Meeting*  
Special Session on Singular Integrals, Geometric Analysis,  
and Free Boundary Problems  
Florida International University, Miami, FL, Apr. 1-2, 2006.
21. *University of Cincinnati Mathematics Dept. Colloquium*  
Cincinnati, OH, Oct. 6, 2005.
22. *AMS Sectional Meeting*  
Special Session on Geometric Analysis and Partial Di erential Equations  
in Subelliptic Structures  
University of Pittsburgh, Pittsburgh, PA, Nov. 6-7, 2004.
23. *University of South Florida Undergraduate Math Club*  
Tampa, FL, Oct. 29, 2004.
24. *AMS Sectional Meeting*  
Special Section on Analysis and Geometry in  
Carnot-Caratheodory Spaces  
University of New Mexico, Albuquerque, NM, Oct. 16-17, 2004.

25. *AMS Sectional Meeting*  
Special Section on Regularity of PDE's and Harmonic Analysis  
University of New Mexico, Albuquerque, NM, Oct. 16-17, 2004.
26. *University of Cincinnati Mathematics Dept. Colloquium*  
Cincinnati, OH, Feb. 19, 2004.
27. *Third Prairie Analysis Seminar*  
Kansas State University, Manhattan, KS, Oct. 17-18, 2003.
28. *RNC Workshop on Future Trends in Geometric Function Theory*  
University of Jyväskylä, Finland, June 15-18, 2003.
29. *Symposium on Analysis and PDE's*  
Purdue University, West Lafayette, IN, May 23-26, 2003.
30. *University of Kentucky Analysis Seminar*  
Lexington, KY, Apr. 4, 2003.
31. *Workshop in Analysis and Geometry in Carnot-Caratheodory spaces*  
University of Arkansas, Fayetteville, Mar. 7-8, 2003.
32. *University of Pittsburgh Analysis Seminar*  
Pittsburgh, PA, Oct. 17, 2002.
33. *AMS Sectional Meeting*  
Special Session on Topics in Geometric Function Theory  
University of Michigan, Ann Arbor, MI, Mar. 1-3, 2002.
34. *University of Arkansas Dept. of Mathematics Colloquium*  
Fayetteville, AR, Feb. 7, 2002.
35. *SUNY-Stony Brook Complex Analysis and Geometry Seminar*  
Stony Brook, NY, Apr. 4, 2001.
36. *Wayne State University PDE Seminar*  
Detroit, MI, Mar. 6, 2001.
37. *AMS Sectional Meeting*  
Special Session on Carnot-Caratheodory Spaces  
University of Notre Dame  
Notre Dame, Indiana, Apr. 7-9, 2000.

#### **SYNERGISTIC ACTIVITIES:**

Departmental Liaison with Office of National Scholarships. Work with ONS Director Dr. Sayandeb Basu to identify and target mathematics majors for external awards such as the Barry Goldwater, Marshall, and Knight-Hennessy Scholarships.

Recommendation writer for and informal adviser to Alexander Mercier, USF's first ever Rhodes Scholarship finalist.

Current member of Phi Beta Kappa Honor Society and Phi Kappa Phi Honor Society faculty councils.

Author of textbook *An Introduction to Writing Mathematical Proofs: Shifting Gears from Calculus to Upper-Level Mathematics Classes*, Fifth Edition.  
Kindle Direct Publishing.  
Hardcover: ISBN-13: 979-8724955300, March 19, 2021.  
Paperback: ISBN-13: 979-8561230653, November 8, 2020.

Created and developed graduate Differential Geometry II course and Differential Geometry graduate sequence.



Undergraduate Committee Chair, August 2011-August 2015.

- { Created Major Tracks (Pure/Applied/General) to help mathematics majors achieve their post-graduation goals.
- { Created and developed undergraduate Differential Geometry course.
- { Shepherded the creation and addition of Elementary Abstract Algebra II, Introduction to Graph Theory, Introduction to Combinatorics and Introduction to Cryptography and Coding Theory.
- { Formed Linear Algebra ad hoc committee of experts and frequent instructors to enhance and improve the course.

Florida Consortium of Metropolitan Research Universities Faculty Learning Community, Mathematics Committee Member, August 2015-August 2017.

Engineering Calculus Peer Leading Coordinator, Fall 2011, Fall 2015 and Spring 2016.

USF STEM for Scholars Summer Program, Linear Algebra Instructor, Summer 2011-2013.

Mentor for high school student Sean Chapman, Spring Hill High School, Summer 2012. Graduated Tufts University.

Co-organizer with Catherine Beneteau, Dima Khavinson, and Sherwin Kouchekian, 25th Southeastern Analysis Meeting, Tampa, FL, March 20-22, 2009.

Co-organizer with Wen-Xiu Ma, Yuncheng You, and Sherwin Kouchekian, 7th International Conference on Differential Equations and Dynamical Systems, Tampa, FL, Dec. 15-18, 2010.

President of USF Chapter, Phi Kappa Phi Honor Society, August 2011-May 2014.

USF Dept. of Mathematics and Statistics Graduate School Recruitment Presentations at the University of Pittsburgh and University of Cincinnati. Fall 2006 and 2009.

USF Academy for Teaching and Learning Excellence/STEER Peer Observation Program participant. Fall 2018.

Administrator and Creator of Facebook page "Avenue Carnot". Non-Facebook access via <http://shell.cas.usf.edu/~tbieske/index.html> .

## **PROFESSIONAL ASSOCIATIONS:**

American Mathematical Society