

Maribeth Oscamou

Contact Information

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University of Colorado, Boulder
Department of Applied Mathematics
Office: ECOT 241

Education

M.S. Applied Mathematics

University of Colorado at Boulder

Completed all required courses for the Ph.D.; Received Ph.D. Research Pass designation on preliminary exams in Applied Analysis, Numerical Analysis and Partial Differential Equations.

2006

B.S. Mathematics

Santa Clara University, Honors Program, Summa cum laude

2002

Teaching Experience

University Teaching Experience

University of Colorado, Department of Applied Mathematics (APPM) Boulder, CO

Instructor and Student Support Specialist

2017-present

Creating and sustaining a program in the APPM department geared to support students with underprepared math backgrounds in APPM Calculus classes.

Summary of courses taught:

- APPM 1350 *Calculus 1* Fall '17
- APPM 1360 *Calculus 2* Fall '17, Spring '18, Summer '20 (online)
- APPM 2350 *Calculus 3*
 - Course Coordinator (~225 students) Spring '20, Spring 21
 - Course Co-Coordinator (~400 students) Fall '19
 - Instructor Fall '18, '19 (2 sections)
Spr '19, '20 (2 sections), '21 (online)
- APPM 1390 *A-Game for Calculus*
 - Course Coordinator (~75 students) Spring 2018-present
 - Instructor: A-Game for Pre-Calculus Fall '18
 - Instructor: A-Game for Calculus 1 Spr '18 (2 sections), '19, '20, '21
Fall '18 (4 sections), '19 (3 sections)
Fall '18
 - Instructor: A-Game for Calculus 1A Fall '18
 - Instructor: A-Game for Calculus 1B Spr '19
 - Instructor: A-Game for Calculus 2 Spr '18 (2 sections), '19 (2 sections)
Fall '18 (2 sections)
Spr '19, '20, '21
- APPM 7400 *Teaching Excellence Seminar* Fall '19

Curriculum Development:

Created APPM 1390: A-Game for Calculus. This 1-credit seminar course supports students enrolled in APPM Calculus classes who are identified as mathematically underprepared. The course incorporates study skills as well as I developed course content and taught sections to support students in the following APPM classes: APPM 1235, APPM 1340, APPM 1345, APPM 1350, APPM 1360 and APPM 2350. In addition to creating the curriculum and teaching sections each semester, I oversee, mentor and train Graduate Teacher Instructors and Learning Assistants for the course and I am course coordinator for all sections.

Santa Clara University, Mathematics & Computer Science Department Santa Clara, CA

Renewable-Term Full Time Lecturer

2012 – 2017

Responsibilities consisted of 70% teaching (7 sections a year), 15% professional development, and 15% service.

Summary of courses taught:

- Math 11: *Calculus & Analytic Geometry I* Winter '13
- Math 13: *Calculus & Analytic Geometry III* Winter '17 (2 sections)
- Math 14: *Calculus & Analytic Geometry IV* Fall '12 (2 sections), Winter '14 (2 sections), Fall '14, Winter '15 (2 sections), Spring '15 (2 sections), Spring '16 (2 sections), Fall '16 (2 sections), Spring '17 (2 sections)
- Math 30: *Business Calculus I* Fall '12, Winter '13 (2 sections), Fall '14 (2 sections), Winter '15
- Math 31: *Business Calculus II* Spring '14 (2 sections)

Teaching Activities: Created online videos to supplement lesson material, incorporated active learning techniques into lessons, held weekly office hours & exam review sessions, created and graded all exams and quizzes.

Yearly Adjunct Lecturer

2011 – 2012

Responsibilities consisted of 95% teaching (7 sections a year) and 5% departmental service.

Summary of courses taught:

- Math 11: *Calculus & Analytic Geometry I* Spring '12
- Math 12: *Calculus & Analytic Geometry II* Winter '12 (2 sections)
- Math 13: *Calculus & Analytic Geometry III* Spring '12
- Math 14: *Calculus & Analytic Geometry IV* Fall '11 (3 sections)

Quarterly Part-Time Lecturer

2010 – 2011

Summary of courses taught:

- Math 8: *Introduction to Statistics* Summer '11
- Math 13: *Calculus & Analytic Geometry III* Spring '11
- Math 14: *Calculus & Analytic Geometry IV* Fall '10

University of Colorado, Department of Applied Mathematics (APPM) Boulder, CO

Lead Graduate Teacher

Graduate Teacher Program, Graduate School

2005 – 2006

Oversaw all department TAs and supported teacher training by running an orientation session, leading a weekly graduate seminar on teaching and research excellence, and conducting TA observations; attended weeklong training on teaching and consultation skills through University of Colorado's Graduate Teacher Program (GTP); attended 8 hours of workshops on teacher training through the GTP Fall Intensive; consulted with TAs on pedagogical skills using the Videotape Consultation method; acted as a liaison between the GTP and the Department of Applied Math; completed semester plans and reports and submitted to GTP.

Graduate Student Instructor

- Teaching and Research Excellence Graduate Seminar Instructor: Fall 2005
Developed curriculum for and instructed a weekly graduate seminar for department TAs on Teaching and Research Excellence. Curriculum included techniques for teaching calculus, student engagement, learning styles, conducting exam reviews, grading, grants and fellowships, and a series of guest speakers introducing research currently being conducted in the department.

Teaching Assistant

- Differential Equations Recitation Instructor (APPM 2360) Fall 2005
- Calculus I Recitation Instructor (APPM 1350) Fall 2003
- Calculus I Workgroup Instructor (COEN 1350) Fall 200

High School Teaching Experience

Presentation High School *San Jose, CA*
Mathematics and Science Teacher

2002 – 2003

Summary of Courses Taught:

- Algebra I (2 sections)
- Honors Algebra II (2 sections)
- Introduction to Science
- Math Analysis

Research Experience

University of Colorado, Applied Mathematics Department *Boulder, CO*

1/2004 – 1/2008

Graduate Research Assistant

Developed and analyzed mathematical models with applications in both mathematical biology and water waves.

- Conducted comparative analysis of algorithms estimating the nucleotide substitution rate matrix in the Markov model of molecular evolution.
- Created and analyzed a differential equation model of the cellular signaling dynamics of Transforming Growth Factor-Beta. Included Matlab implementation of evolution strategy global optimization and Markov Chain Monte Carlo algorithms.
- Analyzed a differential equation model of helicase translocation on DNA.
- Conducted analysis of the relationship between network topology and dynamics in biological signaling networks.
- Conducted mathematical stability analysis of partial differential equations, modeling three-dimensional waves on deep water.

Other Professional Experience

Lateral Sports *Palo Alto, CA*

1/2011 to 1/2012

Manager, Data and Analytics

- Developed recommendation algorithm to recommend athletes and games based on users' profile information.
- SQL database administrator for Lateral Sports' website.
- Aggregated, cleaned and analyzed athlete and schedule data for all D1 college sports, and displayed through Lateral Sports' website.

Lattice Engines *San Mateo, CA*

11/2009 to 12/2010

Analyst

- Developed logistic regression and decision tree statistical models to predict customer purchase behavior for VMware and Dell using historical customer transaction data and Dun and Bradstreet firmographic data.
- Developed models of future revenue opportunity by sales account for key product segments, based on firmographic information and historical transactional data.
- Responsible for database aggregation and analysis of customer data related to the sales cycle, including historical transaction data, account information, contact data, and service requests.
- Trained customer sales representatives on use and application of Lattice Engines' software program.
- Presented data findings and model results through client meetings at VMware and Dell.

Mercer *Denver, CO & San Francisco, CA*

02/2008 to 11/2009

Actuarial Analyst

- Calculated pension benefits and pension plan contribution amounts, performed annual actuarial pension valuations, conducted non-discrimination testing of pension plans, performed calculations for annual pension expense and disclosure of assets and liabilities according to the Financial Accounting Standards Board, and provided pension plan termination estimates.
- Presented results to clients and mentored junior analysts.
- Passed the Society of Actuaries exams in Probability, Financial Mathematics, and in Construction and Evaluation of Actuarial Models.

Publications

- Comparison of methods for estimating the nucleotide substitution matrix. M Oscamou, D McDonald, VB Yap, G Huttley, M Lladser, R Knight. *BMC Bioinformatics* **9**, (2008)
- Stable three-dimensional waves of nearly permanent form on deep water. W Craig, D Henderson, M Oscamou, H Segur. *Mathematics and Computers in Simulation* **74**, 135-144 (2007)

Presentations

- "Thriving in APPM Calculus Classes." *CEAS Academic Success Workshop*, CU Boulder, 2/24/2020 & 10/2/2019
- "APPM Initiatives for Pre-Calc/Calc/Diff Eq." *UEC Meeting*, CU Boulder, January 2019
- "Bringing Your A-Game to APPM Calculus Classes." *CU Engineering Orientation*, CU Boulder August 2018 and 2019
- "Bridging the Gap Between Math 14 & Physics 33." *Collaborative for Teaching Innovation Café*, SCU, March 2015
- "Pedagogy and Technology: Examples from the Math Classroom." *New Faculty Orientation*, SCU, Sept. 2014
- "Developing Activities to Deepen Student Learning: In-Class Strategies and Examples." *Varsi Café*, SCU, Feb. 2014
- "Teaching and Technology: Creating Video Examples." *Teaching and Technology Summer Seminar*, SCU, June 2013
- "Parameter Estimation in the TGF-beta/Smad Signaling System." *Bioinformatics Seminar*, CU Boulder, Oct. 2007
- "Control of TGF-beta/Smad Signaling," Poster presentation at *Biophysical Society Annual Meeting*, March 2007
- "Control of TGF-beta/Smad Signaling," Poster presentation at *Predictive Models of Complex Systems Conference*, June 2006

Honors and Awards

- NSF Graduate Research Fellowship 2005 – 2007
- "Best Should Teach" Silver Award, Graduate Teacher Program, Graduate School, CU Boulder 2005
- NSF VIGRE Graduate Student Fellowship Summer 2004 & 2005

Grants

- Santa Clara University Enhanced Teaching with Technology Grant: "Bridging the Gap Between Math 14 & Physics 33." 2014; Amount: \$1500. Collaborator: Norman Paris. This grant supported the creation of a series of video modules connecting the content between Math 14 (Multivariable Calculus) and Physics 33 (Electrostatics & Electromagnetics).

Professional Development

- Attendee at the College Mathematics Instructor Development Source (CoMInDS) 2020 Workshop, *Online*, (15 hour summer workshop sponsored by CoMInDS, an MAA-based project that provides instructional materials and guidance to departments as they establish or revise their graduate student professional development programs; 7/13/20-7/15/20).
- Attendee at the CEAS weekly discussion series: Going The Distance-A discussion series on innovative online and remote teaching, *Online*, CU Boulder, Summer 2020
- Reading Group Member: MAA Instructional Practices Guide Reading Group, *Online*, Summer 2020 (weekly)
- Attended conference: National Inquiry Based Learning Conference, *Denver, CO*, (6/6/19-6/8/19)
- Attended workshop: Improving Co-Requisite Mathematics Courses, *Aurora, CO*
(12 hour workshop provided by the University of Texas at Austin, Charles A. Dana Center, 5/20/19-5/21/19)
- Attended workshop: Pathway to Calculus Pedagogy Workshop, *Aurora, CO*
(12 hour workshop provided by the University of Texas at Austin, Charles A. Dana Center, 5/16/19-5/17/19)
- Attended workshop: "Teaching in a nutshell: Strategies to enhance student learning", CU Faculty Teaching Excellence Program Short Course (4/4/19)

- Attended workshop: "How to Engage Students Productively: The Games of Cognition and Identity," SCU Math/CS Department (8/31/16)
- Attended workshop: "Experimenting with Active Learning in College Mathematical Classrooms," *SCU Math/CS Department* (8/25/16)
- Attended the Mathematical Association of America's (MAA) Northern California Sectional Meeting (2/28/15)
- Attended talk "A Conversation about Evidence-Based Teaching and Learning in STEM" by Derek Bruff at SCU (4/28/15)
- Attended SCU's Faculty Collaborative for Teaching Innovation CAFÉ on "Engaging Students with their Favorite Technology", by Derek Bruff (4/29/15)
- Attended SCU's School of Engineering's Summer Teaching Workshop (6//30-7/1), to learn new techniques to make teaching effective, preparation efficient, and the classroom experience engaging for students.
- Attended MAA PREP Workshop on "Implementing Inquiry Based Learning (IBL) Methods in College Classes" (7/7/15-7/10/15)

Academic Advising

- Student Support Specialist: CU APPM Department 2018-present
 - Meet weekly with students in Pre-Calculus and Calculus identified by the department as mathematically underprepared. Teach study skills, answer questions on Calculus concepts and set weekly goals.
- Faculty advisor for SCU's New Student Orientation sessions Summer '12, '14 & '15
- Faculty advisor for SCU Math & CS department majors (20 students each year) 2012 – present

Academic Service

- Department Liaison, CU APPM Department 2018-present
 - Work with the School of Engineering Academic Coaches, Engineering Goldshirt program, University A&S Academic Coaches, CU Math Department and SASC faculty. Meet throughout the year with members of these groups to share curriculum ideas and methods for more effectively supporting students in APPM Calculus classes, particularly those who are mathematically underprepared.
- Faculty co-advisor: Association of Women in Math, CU Boulder Chapter 2019-present
- Member: College of Engineering Transfer Advising Committee, CU 2019-present
- Presenter: APPM Graduate Orientation, CU Boulder 2019 & 2020
- Presenter: College of Engineering and Applied Science Orientation, CU Boulder 2018-present
- Presenter: College of Engineering Academic Success Workshops 2/20 & 10/19
- Member: Calculus Curriculum Discussion Group , CU Math and SASC Departments 2019-2020
- Author: APPM Teaching Assistant Handbook Fall '19 and '20
- Chair: Teaching Evaluation Committee, SCU Math & CS Department 2016 – 2017
- Teaching Mentor: New & Adjunct Faculty, SCU Math & CS Department 2016 – 2017
- Member: Teaching Post-Doc Search Committee, SCU Math & CS Department 2016 – 2017
- Faculty advisor: Pi Mu Epsilon, California Eta Chapter, SCU 2014 – 2017
- Department Coordinator: MyMathLab Online HW System, SCU Math & CS Department 2014 – 2017
- Member: Phi Beta Kappa New Member Selection Committee, SCU 2013 – 2017
- Member: STEM Calculus Committee, SCU Math & CS Department 2014 – 2016
- Member: Business Calculus Committee, SCU Math & CS Department 2013 – 2014
- Co-coordinator: Colloquium Series, SCU Math & CS Department 2012 – 2013
- Chair: Calculus AP Exam Committee, SCU Math & CS Department 2011 – 2012