Brian Zaharatos

Email: brian.zaharatos@colorado.edu
Blog: bzaharatos.wordpress.com
Web: colorado.academia.edu/BrianZaharatos/

Education

Colorado School of Mines, Golden, CO
PhD, Applied Mathematics and Statistics, 2015
MS, Applied Mathematics and Statistics, 2013.
- Thesis title: *Statistical Modeling of Photovoltaic Device Performance.* Advisors: Luis Tenorio and Paul Constantine

University of South Carolina, Columbia, SC
MA, Philosophy, 2012
- PhD level pass of comprehensive exam on the history of philosophy, 2011.
- *Relevant Graduate Coursework*: Teaching Philosophy, Logic, and Probability Theory.

State University of New York, Stony Brook, NY
BS, Mathematics and Philosophy, 2007

Teaching Experience

- Over eighty credit hours of post secondary teaching experience. Courses include:
  - **Matrix Methods** (Univ. Colo. Boulder)
  - **Calculus I for Engineers** (Colorado School of Mines)
  - **Calculus II for Engineers** (Colorado School of Mines, Univ. Colo. Boulder)
  - **Statistical Modeling** (undergraduate and graduate level, Univ. Colo. Boulder)
  - **Applied Statistics** (undergraduate and graduate level, CU Denver)
  - **Intro. to Statistics** (Red Rocks Community College)
  - **Research Ethics** (graduate level, Colorado School of Mines)
  - **Inductive Logic** (University of South Carolina; met liberal arts math requirement)
  - **Deductive Logic** (TA, University of South Carolina; met liberal arts math requirement)
  - **Intro. to Philosophy** (University of South Carolina)
  - **Ethics** (Red Rocks Community College)
  - **Environmental Ethics** (Red Rocks Community College)
  - **Nature and Human Values** (two sections, Colorado School of Mines)
  - **Food Ethics** (TA, University of South Carolina)
  - **Intro. to Ethics** (TA, Colorado School of Mines)
  - **Human Systems: Globalization** (TA, Colorado School of Mines)
- Experience with:
  - diverse student populations, including applied science and engineering students, and community college students.
  - online learning environments, including WebAssign and Blackboard.
  - technology in the classroom (computer and A/V systems to stream video, display class notes, Smart Pens, demonstrations, etc.).

Select

- "Estimability of the PV Single-Diode Model Parameters" (lead author; co-authored with Mark Campanelli and Luis Tenorio). *Statistical Analysis and Data Mining*. In Press.

Publications

(2015).

- "Discovering an Active Subspace in a Single-Diode Solar Cell Model" (co-authored with Paul Constantine and Mark Campanelli). *Statistical Analysis and Data Mining*. In Press. (2015).
- "Nanoethics and Policy Education: A Case Study of Social Science Coursework and Student Engagement with Emerging Technologies" (co-authored with Jessica Rolston, Skylar Huzyk, Corinne Packard, and Carl Mitcham). *NanoEthics: Studies of New and Emerging Technologies*. Vol. 8(3). (2014).
- "Daniel Kahneman." In *Ethics, Science, Technology, and Engineering*, Second Edition. Eds. Carl Mitcham, Britt Holbrook. Macmillan Reference. (2014).
- "Decision Theory." In *Ethics, Science, Technology, and Engineering*, Second Edition. Eds. Carl Mitcham, Britt Holbrook. Macmillan Reference. (2014).
- "Misconduct in the Mathematical Sciences." In *Ethics, Science, Technology, and Engineering*, Second Edition. Eds. Carl Mitcham, Britt Holbrook. Macmillan Reference. (2014).
- "Peter Singer." In *Ethics, Science, Technology, and Engineering*, Second Edition. Eds. Carl Mitcham, Britt Holbrook. Macmillan Reference. (2014).
- "Probability: Basic Concepts of Probability Theory." In *Ethics, Science, Technology, and Engineering*, Second Edition. Eds. Carl Mitcham, Britt Holbrook. Macmillan Reference. (2014).
- "Statistics" (a five part series). In *Ethics, Science, Technology, and Engineering*, Second Edition. Eds. Carl Mitcham, Britt Holbrook. Macmillan Reference. (2014).

Work History

University of Colorado at Boulder, Boulder, CO
Full-time Teaching Faculty, Department of Applied Mathematics, Fall 2015-present
- Faculty advisor for the undergraduate chapter of the Society for Industrial and Applied Mathematics (SIAM).
- Coordinator for Calculus 2 for Engineers and Matrix Methods.
- Developed an upper division philosophy of statistics course to be taught Spring 2017.
- Developed a first year seminar in interdisciplinary decision-making, to be offered Fall 2017.

Colorado School of Mines, Golden, CO
Graduate Teaching/Research Fellow, 2011-2015
- Successfully fulfilled full instructor duties for four semesters of Calculus for Engineers and one semester of Nature and Human Values.
- Selected as a favorite faculty member by a student athlete and honored at the Volleyball Team Faculty Appreciation Night.
- Selected as a favorite faculty member and invited to honorary lunch by student member of the Society for Women Engineers.
- Served four semesters in Math Learning Center as a tutor.
- Received positive peer teaching evaluations and many positive student evaluations.
- Volunteered as assistant coach for Ethics Bowl team.
- Won 2014-2015 AMS Graduate Teaching Award.

Red Rocks Community College, Lakewood, CO
Part-time Instructor, January 2013-present
- Successfully fulfilled full instructor duties for two semesters of Introduction to Statistics and three semesters of Ethics. Received positive peer teaching evaluations and many positive student evaluations.

University of South Carolina, Columbia, SC
Graduate Instructor and Teaching Assistant, 2009-2011
- Successfully fulfilled full instructor duties for Inductive Logic and Introduction to

Philosophy and received many positive student evaluations.

Invited Talks

- "Beyond the 'Intersection': A new Paradigm for the Integration of the Liberal Arts and STEM." Colorado School of Mines, April 2016.
- "Beyond Algorithms: Philosophy of Statistics in the Standard Curriculum." Sponsored by the Committee for the History and Philosophy of Science, University of Colorado Boulder, February 23, 2016.
- "Inverse Problems and Uncertainty Quantification: A Gentle Introduction." University of Colorado, Boulder, CO. April 2015.
- "Statistics and Rationality." Northern Arizona University, Flagstaff, AZ. April 2015.
- "Statistics as a Liberal Art." The Evergreen State College, Olympia, Washington. March 2015.
- "Social Movements and Rationality." The Evergreen State College, Olympia, Washington. March 2015.

Service

Judge, Rocky Mountain Ethics Bowl, Fall 2016

Referee, *Problems, Resources, and Issues in Mathematics Undergraduate Studies (PRIMUS)*, Summer 2016

Statistics Committee Member, Department of Applied Mathematics, University of Colorado Boulder, Boulder, CO, Spring 2016-present

IT Committee Member, Department of Applied Mathematics, University of Colorado Boulder, Boulder, CO, Spring 2016-present

Committee for the History and Philosophy of Science Member, University of Colorado Boulder, Boulder, CO, Spring 2016-present

Faculty Advisor, Undergraduate SIAM Chapter, University of Colorado Boulder, Boulder, CO, September 2015-present

Social Chair, Graduate Student Government, Colorado School of Mines, Golden, CO, September 2014-present

Ethics Across Campus Student Representative, Colorado School of Mines, Golden CO, May 2013-present

Sustainability Committee Graduate Student Representative, Colorado School of Mines, Golden, CO, September 2013-present

Applied Mathematics and Statistics Dept. Representative, Graduate Student Government, Colorado School of Mines, Golden, CO, September 2013-July 2014

AmeriCorps National Civilian Community Corps Member, Denver, CO
- Over two-thousand service hours with non-profits/the US Forest Service in 2008.
- Received Presidential Volunteer Service Award and Bronze Congressional National Service Award.

Nevada Conservation Corps Member, Reno, NV
- Over four-hundred service hours with nonprofits/US Forest Service/Bureau of Land Management in 2009.

Conferences

- "Statistics as a Liberal Art." Joint Mathematics Meetings. 2016.
- "An Active Subspace Analysis of the Single-Diode Model." Oral presentation. SIAM Conference on Computational Science, March 14, 2015.
- "On Philosophical Beliefs in Science and Academia." Oral presentation. Society for Ethics Across the Curriculum. 2014.
- "Likelihood Methods for Single-Diode Model Parameter Estimation from Noisy I-V Curve Data." Oral presentation. Photovoltaics Specialists Conference. 2014 (received best student paper award).
- "On the Identifiability of the Single-Diode Model." Poster Presentation. Conference on Data Analysis. 2014 (honorable mention, best student poster).
- "Alternative Methods? Cost Benefit Analysis and the Precautionary Principle." Poster presentation. Sixth Annual Rocky Mountain Ethics Congress (RoME). 2013.
- "Kornblith, Dreyfus and Non-Representational Action." South Carolina Society for Philosophy Annual Conference. 2011 (received graduate student paper award).
- "Cultural Objects in Carnap's Aufbau: a Heideggerian Critique." South Carolina Society for Philosophy Annual Conference. 2010 (received graduate student paper award).

Awards

- Arts and Science Support of Education through Technology Faculty Fellows Program, 2017-2018.
- Colorado School of Mines AMS Graduate Teaching Award, 2014-2015
- Graduate Teaching Fellowship, Colorado School of Mines, 2012-2013, Spring 2015.
- National Center for Photovoltaics Graduate Student Fellowship, January 2014.
- Teaching Assistantship, University of South Carolina, 2009-2011.
- James W. Oliver Award for the Study of Logic, University of South Carolina.

Consulting

OptiMiser Energy, Denver, CO
Statistics Consultant, 2012, April 2015-present
- Independently researched and implemented statistical methods applied to energy analysis of commercial and residential buildings; contributed to statistical analyses used in litigation; worked efficiently and punctually from a home office.

EMS Development Corporation, Yaphank, NY
Applied Mathematics Consultant, 2010-2011
- Independently researched and implemented several mathematical models used in the calibration of a degaussing system. Improved company efficiency by developing algorithms that can be used remotely by field engineers.

Hobbies

Hockey, hiking, guitar, running, cycling, swimming (completed two full marathons, a half-ironman, and two sprint triathlons), and cooking.