Cassidy K. Buhler

Ph.D. Candidate in Business Analytics

Department of Decision Sciences & MIS
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Education

2019-2024 (expected) **Ph.D. Business Administration – Operations & Business Analytics Concentration, Graduate Minor: Computational Data Science**,
Drexel University, Philadelphia, PA.
Advisor: Professor Hande Y. Benson

2015–2019 **B.S. Mathematics – Statistics Emphasis**,
University of Utah, Salt Lake City, UT.
Advisor: Professor Frederick R. Adler

Research

Nonlinear optimization, machine learning, computational sustainability, operations research

Papers

Publications in peer-reviewed journal

Cassidy K. Buhler, Rebecca S. Terry, Kathryn G. Link, Frederick R. Adler. "Do mechanisms matter? Comparing cancer treatment strategies across mathematical models and outcome objectives". *Mathematical Biosciences and Engineering*, 2021, 18(5): 6305-6327. doi: 10.3934/mbe.2021315.

Publications in refereed proceedings

Buhler C. K., Benson H. Y. Optimal land conservation decisions for multiple species. *Proceedings of the Northeast Decision Sciences Institute Conference, Washington D.C., March 2023*.

In preparation

Buhler C. K., Benson H. Y., Shanno D. F. (2021). "Regularized step directions in conjugate gradient minimization for machine learning". Under first round of review at *INFORMS Journal on Optimization*.

Buhler C. K., Benson H. Y. (2020). "Efficient solution of portfolio optimization problems via dimension reduction and sparsification".

Publications in non peer-reviewed journal

Buhler C. K., Terry R. S., Link K. G., Adler F. R. (2019). "Mathematical modeling of adaptive therapy in prostate cancer". *Undergraduate Research Journal*.

Presentations

March 2023 NEDSI Annual Conference. **Buhler C. K.**, Benson H. Y. *Optimal land conservation decisions for multiple species*. Presenting in the *Sustainability Management* track.

Oct 2021 INFORMS Annual Meeting. **Buhler C. K.**, Benson H. Y. Shanno D. F. *Regularized step directions in conjugate gradient minimization for machine learning*. Presented in the *Nonlinear Optimization and Applications I* session (VTB63).

July 2021 SIAM Conference on Optimization. **Buhler C. K.**, Benson H. Y. *Conjugate gradient methods for machine learning*. Presented in the *Computational Optimization Methods for Machine Learning and Global Optimization* minisymposium (MS108).

Nov 2020 INFORMS Annual Meeting. **Buhler C. K.**, Benson H. Y. *Efficient solution of portfolio optimization problems via dimension reduction and sparsification.* Presented in the *Nonlinear Optimization Methods and Software* session (WC34).

Oct 2020 Drexel Computer Science Theory Reading Group. **Buhler C. K.** *Portfolio optimization.*

April 2019 Undergraduate Research Symposium. **Buhler C. K.**, Terry R. S., Link K. G., Adler F. R. *Mathematical modeling of adaptive therapy in prostate cancer.*

Teaching

2021-Present Instructor, *Drexel University*

Responsible for all lectures, course materials, and grading.

- BSAN 360: Programming for Data Analytics
- Ph.D. Programming Bootcamp
  - 2-day programming workshop for incoming Business Ph.D. students.

2019-Present Recitation Instructor, *Drexel University*

Responsible for delivering a weekly 2-hour lecture, preparing lecture material, and grading. Similar to a lab section, the recitation section is focused on learning technical skills in the computer lab.

- MIS 200: Management Information Systems

2019-Present Teaching Assistant, *Drexel University*

Assists primary instructor with duties such as holding office hours, preparing assignments, and grading.

- BSAN 360: Programming for Data Analytics
- OPM 200: Operations Management
- OPM 341: Supply Chain Management
- OPM 344: Revenue Management
- OPR 320: Linear Models for Decision Making
- STAT 201: Intro to Business Statistics
- STAT 202: Business Statistics II
- STAT 205: Statistical Inference I
- STAT 206: Statistical Inference II
- STAT 642: Data Mining for Business Analytics

2018-2019 Computer Lab & Mathematics Teaching Assistant, *University of Utah*
Tutored students at the T. Benny Rushing Mathematics Student Center in a variety of undergraduate mathematics courses.
- MATH 1050: College Algebra
- MATH 1210: Calculus I
- MATH 1220: Calculus II
- MATH 2210: Calculus III
- MATH 3070: Applied Statistics I
- MATH 3080: Applied Statistics II

Grants & Awards

2022 Teaching Assistant Excellence Award, *Drexel University*
- For graduate students who *"exhibit exemplary commitment to student learning through reflective teaching practices, creative and innovative teaching methods, academic support, leadership and a commitment to their own professional growth and development as an educator."*

2021 Student Travel Award, *SIAM Conference on Optimization (OP21)*
- Funding is provided by National Science Foundation (NSF) for graduate students to participate at a Society of Industrial and Applied Mathematics (SIAM) conference.

2021 Teaching Assistant Excellence Award (Highly Commended), *Drexel University*
- Nominees given close consideration by the review committee were given recognition as "highly commended" award finalists.

2019-2021 Modeling the Dynamics of Life Fund, *University of Utah*
- Research support provided by Professor Frederick R. Adler.

2019 Undergraduate Research Scholar Designation, *University of Utah*
- Undergraduate students who have completed two semesters of research, presented in the Undergraduate Research Symposium, and published research in the Undergraduate Research Journal.

2019 Research Experience for Undergraduates (REU), *University of Utah*
- Grant for undergraduate students conducting research with a faculty member from the mathematics department.

2015-2018 Honors at Entrance Scholarship, *University of Utah*
- Full tuition scholarship awarded to the top scholar at each Utah high school, based on GPA and ACT score.

Work Experience

2018 Computer Scientist Intern, *United States Air Force*
- Conducted research related to improving software for US Air Force aircraft
- Hired under the Premier College Intern Program (PCIP) and earned a position in the PALACE Acquire (PAQ) program.

Outreach & Service

2022 Panelist for Teaching Assistance Orientation Session, *Drexel University*
Provided insight and answered arising questions from new graduate teaching assistants.

2019 Utah Prison Education Project Tutor, *Timpanogos Women's Correctional Facility*
Tutored students who are incarcerated in a Salt Lake Community College math course.
- MATH 1030: Intro to Quantitative Reasoning

Organizations

2018-Present Society for Industrial and Applied Mathematics (SIAM)
Drexel University, University of Utah

2019-Present The Institute for Operations Research and the Management Sciences (INFORMS)
Drexel University

2018-2019 Association for Women in Mathematics (AWM)
University of Utah

Extracurricular

2019 Captain of Intramural Indoor Volleyball Team "No Games Scheduled" (Ranked 1st), *University of Utah*
- The team name likely impacted our ranking, due to opposing teams not showing up.

2018 Captain of Intramural Indoor Volleyball Team "Algebros" (Ranked 3rd), *University of Utah*

2018 Captain of Intramural Sand Volleyball Team "Mathletes" (Ranked 2nd), *University of Utah*