Cassidy K. Buhler

Ph.D. Candidate in Business Analytics

Department of Decision Sciences & MIS
LeBow College of Business, Drexel University
3220 Market St Philadelphia, PA 19104
✉ *cb3452@drexel.edu*
https://cassiebuhler.github.io/

Education

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

2015–2019 **B.S. Mathematics – Statistics Emphasis**,
University of Utah, Salt Lake City, UT.

Research

Nonlinear optimization, machine learning, computational optimization, operations research

Papers

Publication 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.

In preparation

Buhler C. K., Benson H. Y., Shanno D. F. (2021). "Regularized step directions in conjugate gradient minimization for machine learning". In preparation for submission to *INFORMS Journal on Optimization*.

Buhler C. K., Benson H. Y. (2020). "Efficient solution of portfolio optimization problems via dimension reduction and sparsification". Technical Report. Drexel University, Philadelphia PA, USA.

Publication 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

2021 INFORMS Annual Meeting. **Buhler C. K.**, Benson H. Y. Shanno D. F. *Regularized step directions in conjugate gradient minimization for machine learning*.

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

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).

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

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

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, prepping assignments, and grading.

- BSAN 360: Programming for Data Analytics
- OPM 200: Operations Management
- OPM 341: Supply Chain 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

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 1010: Intermediate Algebra
- 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

Outreach & Service

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

Grants & Awards

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*
For graduate students who "exhibit exemplary commitment to student learning". There were over 50 nominations and highly commended is an award finalist.

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*
For undergraduate students who have completed two semesters of research, have presented in the Undergraduate Research Symposium, and published research in the Undergraduate Research Journal.

2019 Research Experience for Undergraduates (REU), *University of Utah*
This grant was 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.

2015 Utah Centennial Scholarship for Early High School Graduation, *State of Utah*
Scholarship awarded to Utah residents who have graduated high school early.

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.

Organizations

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

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

Extracurricular

2019 Captain of Intramural Indoor Volleyball Team "No Games Scheduled" (Ranked 1st), *University of Utah*
The team name could have impacted our rankings, due to opposing teams not showing up for games. Although, this only happened twice.

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*