

Anthony J. Bonifonte  
Assistant Professor of Data Analytics, Denison University  
Denison University, Granville OH 43023  
[bonifontea@denison.edu](mailto:bonifontea@denison.edu) 440-865-6887



## I. Education

### Georgia Institute of Technology, Atlanta Ga

- Ph.D. in Operations Research, May 2018
  - Minor in Undergraduate Education
  - Advisor Dr. Turgay Ayer
- M.S. in Operations Research, May 2015

### Oberlin College, Oberlin Oh

- B.A. in Mathematics, May 2011
  - Minor in Biology

## II. Teaching and Mentorship

### Assistant Professor, Data Analytics Department, Denison University 2017 – present

- DA 101 Introduction to Data Analytics
- DA 200 Data Analytics Colloquium
- DA/MATH 220 Applied Statistics
- DA 301 Data Analytics Practicum
- DA 350 Advanced Methods for Data Analytics
- DA 401 Seminar in Data Analytics
- MATH 425 Applied Probability

### Mentored Research Students

- Tong Zhou, “Taking Out the Guesswork: An Analytical Approach to Police Traffic Stop Contraband Searches”, May – July 2018 (Full time)
- Fatima Haroon, Sally Hyde, and Nam Pham; Opioid research, May – July 2019 (Full time)
- Ziang Li, Personalized Blood Pressure treatment, Fall 2019 (4 credit)
- Hang Ngo, Mobile Methadone Clinics, May – July 2021 (Full time)

### Independent Studies Students

- Gavin Thomas, “Reinforcement Learning for game strategy”, Spring 2019 (4 credit)
- Chris DeSantis, “Cancer Detection”, Fall 2018 (4 credit)

### Instructor, Industrial and Systems Engineering department, Georgia Tech 2015-2017

- ISyE 3039 Methods for Quality Improvement, Summer 2015, Summer 2016, Fall 2016, Spring 2017, Summer 2017
- ISyE 3770 Probability and Statistics with Applications, Spring 2015

### Teaching Assistant, Georgia Tech 2012-2016

- ISyE 6338 Supply Chain Strategy Spring 2016
- ISyE 6339 Supply Chain Information Systems Spring 2016

- ISyE 6333 Operations Research for Supply Chain Engineering 1 Fall 2015
- ISyE 3103 Supply Chain Logistics Spring 2013
- ISyE 6669 Deterministic Optimization Fall 2012
- ISyE 3104 Manufacturing and Warehousing, Summer 2012
- ISyE 2027 Introduction to Probability with Applications, Spring 2012

**Guest Lecturer, Georgia Tech 2012-2013**

- ISyE 3104 Manufacturing and Warehousing, Summer 2012
- ISyE 2027 Introduction to Probability with Applications, Spring 2013

**TA Fellow, Georgia Tech, 2014-2016**

- Led campus wide training sessions for teaching assistants on effective teaching practices and legal and administrative procedures. Promoted to senior TA fellow in summer of 2015.

**ExCo Instructor Oberlin College 2008-2011.**

Created, designed, and taught 1 credit courses

- Philosophy of Calvin and Hobbes - examined social relevance of the strip and deeper implications of comics as an art medium and imbedded symbolism.
- History of Piracy - Explored societal perceptions of 17<sup>th</sup> century piracy and it's reconciliation with romanticized views of today.

### III. Scholarly Activity

#### A. Research Interests

- Healthcare analytics and medical decision making
  - Opioid crisis management
  - Cardiovascular Disease (Risk prediction, hypertension treatment)
  - Hepatitis C Management

#### B. Publications

1. **Bonifonte, A.**, Ayer, T., Haaland, B., & Wilson, P. W. "An Analytics Approach to Guide Randomized Controlled Trials in Hypertension Management". Forthcoming in *Management Science*
2. **Bonifonte, A.**, Merchant, R., & Deppen, K. "Morphine Equivalent Total Dosage as Predictor of Adverse Outcomes in Opioid Prescribing". *Pain Medicine* (2021): pnab249
3. Ayer, T., Zhang, C., **Bonifonte, A.**, Spaulding, A., & Chhatwal, J. "Prioritizing Hepatitis C Treatment in U.S. Prisons" *Operations Research* 67.3 (2019): 853-873.
4. **Bonifonte, A.**, Ayer, T., Veledar, E., Clark, A., & Wilson, P. W. "Antecedent blood pressure as a predictor of cardiovascular disease." *Journal of the American Society of Hypertension* (2015) 9(9): 690-696.
5. Norback, J., Utschig, T., **Bonifonte, A.**, and G. Ross. "Final Results of Reliability testing for the Norback-Utschig Presentation Scoring System". *ASEE*, 2014.

#### Working Papers

6. **Bonifonte, A.**, Garcia, E. "Improving Geographic Access to Methadone Clinics". Under review at *Journal of Substance Abuse Treatment*
7. **Bonifonte, A.**, Garcia, E., Ngo, H. "Optimal route planning for mobile narcotic treatment programs"

### C. Presentations

1. A. Bonifonte, E. Garcia, "Geographic Access to Methadone Clinics", INFORMS Annual Conference November 2020 (Virtual)
2. A. Bonifonte, T. Ayer, B. Haaland, P. Wilson, "An Analytics Approach to Randomized Controlled Trial Design for Hypertension Management", INFORMS Annual Conference, Oct 22 2019
3. A. Bonifonte, T. Ayer, B. Haaland, P. Wilson, "An Analytics Approach to Randomized Controlled Trial Design for Hypertension Management", Machine Learning for Health Workshop at Neural Information Processing Systems, Dec 8 2018
4. A. Bonifonte, "Analytics in Blood Pressure Management and Control", Denison Scientific Association, Dec 5 2018
5. A. Bonifonte, T. Ayer, B. Haaland, P. Wilson, "Analytics In Blood Pressure Management and Control: From Data to Decisions", INFORMS Conference, Nov 6 2018
6. A. Bonifonte, "Data Analytics at a Liberal Arts College", INFORMS Conference, Nov 5 2018
7. A. Bonifonte, T. Zhou, "Taking Out the Guesswork: Analytics in Police Vehicle Searches", INFORMS Conference, Nov 6 2018
8. A. Bonifonte, T. Ayer, B. Haaland, P. Wilson, "Analytics In Blood Pressure Management and Control: From Data to Decisions", INFORMS Conference, Oct 23 2017
9. A. Bonifonte, Y. Xie, T. Ayer, P. Wilson, "Mobile Health for Chronic Disease Management: A Changepoint Detection Approach", INFORMS Conference, Oct 24 2017
10. A. Bonifonte, T. Ayer, B. Haaland, P. Wilson, "A Stochastic Model of Blood Pressure Progression", Joint Math Meetings, January 4-7, 2017
11. T. Ayer, C. Zhang, A. Bonifonte, A. Spaulding, J. Chhatwal, "Prioritizing Hepatitis C Treatment in United States Prisons", INFORMS Conference, Nov 14 2016
12. A. Bonifonte, T. Ayer, B. Haaland, P. Wilson, "A Continuous Time Stochastic Model To Optimize Blood Pressure Treatment Decisions", INFORMS Conference, Nov 15 2016
13. A. Bonifonte "An Interactive Spreadsheet Based Game for Teaching Design of Experiments and Response Surface Methodology", INFORMS Conference, Nov 15 2016
14. A. Bonifonte, T. Ayer, B. Haaland, P. Wilson, "An Analytics Approach to Hypertension Management", Health Systems: The Next Generation, September 9, 2016
15. C. Zhang, T. Ayer, A. Bonifonte, J. Chhatwal, A. Spaulding, "Prioritizing Hepatitis C Treatment in United States Prisons", INFORMS Conference, Nov 3 2015
16. A. Bonifonte, T. Ayer, E. Veledar, A. Clarke, P. Wilson, "Role And Importance Of Antecedent Blood Pressure In Predicting Outcomes In Cardiovascular

Disease,” High Blood Pressure Research Conference, San Francisco, CA, September 9-12, 2014.

17. American Society for Engineering Education June 2014  
“Final Results of Reliability testing for the Norback-Utschig Presentation Scoring System”
18. Ohio Foundation of Independent Colleges Undergraduate Research Symposium February 2011 “The Ecological Effects of Invasive Crayfish *O. rusticus* in Northeast Ohio”
19. Oberlin College Senior Symposium April 2011  
“The Ecological Effects of Invasive Crayfish *O. rusticus*”
20. Midwest Ecology and Evolution Conference April 2011  
“The Effects of Invasive Crayfish *O. rusticus* on Aquatic Biodiversity”

#### **D. Workshops Led**

1. A. Bonifonte, “Effective Communication for Nontechnical Audiences – SIAM Policy Fellowship Project”, SIAM Annual Meeting, July 2021

#### **E. Panel Appearances**

1. “Undergraduate Programs in Analytics”, INFORMS Meeting of Analytics Program Directors, Austin TX, April 13, 2019

#### **F. Workshops Attended**

1. Workshop on Undergraduate Data Science Pedagogy & Practice, University of California Berkeley, July 16-19 2018

#### **G. Peer Reviews**

1. Health Care Management Science, January 2021
2. Naval Research Logistics, December 2020
3. Taylor Francis book publication, March 2020
4. ACM Conference on Health, Inference, and Learning (CHIL), January 2020 (4 conference papers)
5. Machine Learning for Health Workshop at Neural Information Processing Systems, September 2019
6. Journal of Human Hypertension July 2019

#### **H. News mentions**

1. <https://sinews.siam.org/Details-Page/communicating-mathematics-to-a-nontechnical-audience>
2. Forthcoming : “Resoundingly Human” podcast

#### IV. Honors, Awards, and Fellowships

##### **SIAM Science Policy Fellowship**, Washington, DC, 2019-2020

- Trains participants to be advocates for federal investments in applied mathematics and computational science.
- Attending workshops to learn about important legislative issues as well as the federal budget and appropriations process,
- Participating in an advocacy day on Capitol Hill,
- Representing the industrial and applied math community to policy-makers and federal official.

##### **IISE HealthCare Student Paper Competition Second Place**, IISE Annual Conference 2017

##### **Outstanding Graduate Student Instructor Award Winner**, Center for the Enhancement of Teaching and Learning, Georgia Tech, 2016

- Selected as winner from ~400 candidates and 7 finalists.

##### **Outstanding Graduate Student Instructor Award Winner**, Industrial and Systems Engineering Department, Georgia Tech, 2016

##### **Advanced Teaching Certificate**: Center for Enhancement of Teaching and Learning, Georgia Tech, 2015.

- Awarded for completing 4 courses in undergraduate instruction, covering teaching pedagogies, course design, assessment strategies, and teaching practicum.

##### **George Fellowship** Health Systems Institute, Georgia Tech and Emory University, 2013

- Awarded for academic strength, capacity for leadership, and commitment to Health Systems research.

##### **High Honors in Mathematics**: Oberlin Math Department, 2010-2011, with Dr. Robert Bosch

- Year-long study of Pure and Applied Convex Optimization. Focused study in optimal factory floor planning.

##### **The Orr Prize** Math Department, Oberlin College, 2011

- Granted to 1 graduating student displaying outstanding achievement in math.

##### **Spirit of the BCSL Award**, Bonner Center for Service and Learning, Oberlin College, 2011

- Awarded to one student each year who exemplifies the mission and goals of the Bonner Center through community service

##### **Engaged Community Partner Award**, Bonner Center, Oberlin College, 2011

- Presented for creating new College-Community relationships

##### **William Putnam Math Competition** Oberlin College, 2008-2010

- 2010- Selected to be 1 of 3 students representing Oberlin College.

#### V. Service

##### **Data Analytics Policy Parlay – Fall 2021**

- Created policy competition that engaged community partners Licking County in student competition. Work features in their report

##### **Denison Scientific Association** Denison University Fall 2019 – Spring 2020

- Co-host in charge of recruiting speakers, arranging logistics, and advertising

##### **DataFest Competition** Denison University Spring 2019

- Faculty consultant overseeing and advising undergraduate teams

##### **Pizza and Puzzles** Denison University Fall 2017 - present

- Held monthly gathering for math, computer science, and data analytics students. Mathematical and data puzzles designed to increase student interest, practice competition mathematics, and prepare for quantitative interview questions.

##### **Committees served**

- Student Research Grant Committee, Denison University Fall 2021
- Information Technology Committee, Denison University Fall 2019
- Assistant Professor of Applied Statistics search, Denison University Fall 2019
- INFORMS Undergraduate education committee, Fall 2019
- Visiting Assistant Professor search, Denison University Spring 2019
- Academic Administrative Assistant search, Denison University Fall 2018

**Competitions hosted**

- Police Data Challenge, American Statistical Association, Fall 2017

**Host Mock Technical Interview**

- Data Analytics, Spring 2019

**Georgia Tech Undergraduate Research Office** Fall 2011-2017

- Reviewed applications for President's Undergraduate Research Awards (PURA) and made recommendations on which to fund
- Judged Undergraduate Research Poster sessions

**Atlanta Science Fest** Spring 2014 - 2017

- Volunteered for STEM promotion and outreach at Atlanta area schools.
- Completed visits with 6 schools

**Georgia Tech Center for Education Integrating Science, Mathematics, and Computing** Summer 2012

- Assisted Rockdale County public school system in addressing Georgia State Standards of Education. Gave presentations to high school teachers regarding novel ways of presenting math and biology concepts to students.

**Oberlin College Bonner Scholars Program** Oberlin College, 2009-2011

- Engaged in tutoring high school students at The Bridge in downtown Oberlin.
- Co-created Spring Into Service, a program inviting students campus wide to participate in volunteering for local nonprofit organizations in the spring.
- Advised Oberlin school district administrator on optimal bus routes and created TSP heuristic to solve the problem. Solution implemented on bus routes.