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## EDUCATION & APPOINTMENTS

### Education

Ph.D., Mathematics, University of Washington, June 2010  
Dissertation: *Variational Properties of Polynomial Root Functions and Spectral Functions*  
M.S., Statistics, University of Washington, August 2009  
B.A., Mathematics, University of Rochester, May 2002

### Academic Employment

2017– Associate Professor, School of Interdisciplinary Arts & Sciences,  
University of Washington Tacoma, Tacoma, WA  
2011–17 Assistant Professor, School of Interdisciplinary Arts & Sciences,  
University of Washington Tacoma, Tacoma, WA  
2010–11 Visiting Assistant Professor, Mathematics and Computer Science Department,  
University of Puget Sound, Tacoma, WA  
2010 Research Assistant, Clinical Informatics Research Group, University of Washington,  
Seattle, WA  
2004-10 Graduate Teaching Assistant, Mathematics Department, University of Washington,  
Seattle, WA

## SCHOLARSHIP

### Publications<sup>1</sup>

#### Peer-reviewed articles

Burke J.V., Eaton J. Variational properties of convexly generated spectral max functions. *Mathematical Programming Series B*.\* 2018;168:63-92.  
Eaton J., Gürbüzbalaban M., Grundel S., Overton M.L. Polynomial root radius optimization with affine constraints. *Mathematical Programming*. 2017;165:509–528.  
Eaton J., Painter I., Olson D., Lober B. Visualizing data quality for partially accruing data for use in decision making. *Online Journal of Public Health Informatics*. 2015;7(3).  
Eaton J., Gürbüzbalaban M., Grundel S., Overton M.L. Polynomial Stabilization with Bounds on the Controller Coefficients. In: *2015 Proceedings of 8th IFAC Symposium on Robust Control Design*:381–86.\* (Peer-reviewed conference proceedings)  
Burke J.V., Eaton J. On the subdifferential regularity of max root functions for polynomials. *Journal of Nonlinear Analysis: Theory, Methods & Applications*. 2012;75(3):1168–87.\*  
Eaton J., Godbole A., Sinclair B. Competition between discrete random variables, with applications to occupancy problems. *Journal of Statistical Planning and Inference*. 2010;40(8):2204-12.\*  
Khanal Y., Eaton J., Pakish J., Yen P., Martins R., Carr L., Eaton K., Patel S. Survival disparities in non-small cell lung cancer patients receiving radiation treatment: An investigation of race and gender. *Journal of Cancer Research and Experimental Oncology*. 2010;2(3):29–34.<sup>2</sup>

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<sup>1</sup>authors for mathematics papers (indicated by \*) appear alphabetically

<sup>2</sup>I did the statistical analysis for this paper as a consultant for the main author.

## Proceedings

Painter I., Eaton J., Olson D., Revere D., Lober B. Generation of Prediction Intervals to Assess Data Quality in the Distribute System Using Quantile Regression. In: *2011 JSM Proceedings, Statistics in Defense and National Security Section*: 5172–79. Alexandria, VA: American Statistical Association.

## Published Abstracts

Eaton J., Painter I., Lober B. Accrued-An R Package for Visualizing Data Quality for Aggregate Surveillance Data. *Online Journal of Public Health Informatics*. 2014;6(1).

Painter I., Eaton J., Lober B. Using Change Point Detection for Monitoring the Quality of Aggregate Data. *Online Journal of Public Health Informatics*. 2013;5(1).

Painter I., Eaton J., Olson D., Revere D., Lober W. How good is your data? *Emerging Health Threats Journal*. 2011;4:11907.

Painter I., Eaton J., Olson D., Revere D., Lober W. Visualizing data quality: tools and views. *Emerging Health Threats Journal*. 2011; 4:11907

## Software

Eaton J., Painter I. **accrued** package *Data Quality Visualization Tools for Partially Accruing Data* in the statistical language and computing environment R <http://cran.us.r-project.org>. Version 1.0, 2013. Version 1.4.1, June 2016.

## Grants and Awards

**NSF-MAA Preparation for Industrial Careers in Mathematical Sciences (PIC Math)** grant for applied problems course and student competition, awarded April 2016 for Winter/Spring 2017, by the Mathematical Association of America (MAA). Amount: \$6500.00. *Grant included \$1000 for one student to travel to the national meeting of the Mathematical Association of America (MAA) in Chicago, July 2017. In May 2017, this student's group submitted a video presentation and written report to MAA judges. They were subsequently selected as one of eight out of 64 total groups to give a talk at this meeting. Talk title: "Predicting Consumer Insurance Type."*

**School of Interdisciplinary Arts & Sciences Research & Teaching Fund, UW Tacoma**  
Proposal title: *Organizing and documenting data sets for statistics instruction*, joint with Maureen Kennedy and Haley Skipper. Awarded March 2016. Amount: \$1425.60.

**School of Interdisciplinary Arts & Sciences Research & Teaching Fund, UW Tacoma**  
awarded to help fund two-month visit to the Courant Institute of Mathematical Sciences at New York University in 2014. Amount: \$1500.00.

**NSF-AWM Mentoring Travel Grant**, awarded by the Association for Women in Mathematics (AWM) to visit Michael L. Overton at the Courant Institute of Mathematical Sciences at New York University from January-March 2014. Amount: \$4037.00.

**Tanzi-Egerton Fellowship Award**, University of Washington Mathematics Department, 2009  
**Student Travel Award**, Society for Industrial and Applied Mathematics (SIAM), 2008  
**Microsoft Scholar Award**, University of Washington Mathematics Department, 2004-2008  
**VIGRE Fellow**, University of Washington Mathematics Department, 2006-2007  
**Ermine B. Smith Award for Excellence in Mathematics**, University of Rochester, 2001  
**Rush Rhees Scholarship**, University of Rochester, 1998-2002

**Presentations** <sup>+</sup> = Invited presentation

## Conference Presentations

- *Optimizing the polynomial abscissa subject to affine constraints*<sup>+</sup>  
Society for Industrial and Applied Mathematics Annual Meeting, Portland, July 9-13, 2018

- *Intuition to rigor: developing students' ability to bridge the gap*<sup>+</sup>, with Alan Bartlett & Ryan Card  
PNW Mathematical Association of America Section Meeting, Seattle University, April 21, 2018
- *A chain rule for convexly generated spectral max functions*<sup>+</sup>  
Society of Industrial and Applied Mathematics Conference on Optimization, Vancouver, May 2017
- *A chain rule for spectral functions*<sup>+</sup>  
Joint Mathematics Meeting, Seattle, January 2016
- *Polynomial root radius optimization with affine constraints*<sup>+</sup>  
International Symposium on Mathematical Programming, Pittsburgh, July 2015
- *Optimal solutions to a root minimization problem over a polynomial family with affine constraints*  
Joint Mathematics Meetings, San Antonio, January 2015
- *Optimal solutions to a root minimization problem over a polynomial family with affine constraints*<sup>+</sup>  
Society of Industrial and Applied Mathematics Conference on Optimization, San Diego, May 2014
- *Variational properties of spectral max functions*<sup>+</sup> (Poster)  
Pacific Institute for Mathematical Sciences Workshop on Numerical Linear Algebra and Optimization  
University of British Columbia, Vancouver, August 2013
- *Variational properties of spectral functions with an application to matrix preconditioning*<sup>+</sup>  
Joint Mathematics Meetings, San Diego, January 2013
- *On the subdifferential regularity of functions of roots of polynomials*<sup>+</sup>  
International Symposium on Mathematical Programming, Berlin, August 2012
- *On the subdifferential regularity of polynomial max root functions*  
Joint Mathematics Meetings, Boston, January 2012
- *Visualizing data quality: tools and views*  
International Society for Disease Surveillance Annual Conference, Atlanta, December 2011
- *Data Quality approaches in the Distribute system*  
Council for State and Territorial Epidemiologists Annual Conference, Pittsburgh, June 2011
- *Data quality in disease surveillance* (Poster)  
Symposium for Women in Mathematics  
Institute for Pure and Applied Mathematics, UCLA, February 2011
- *Variational analysis of functions of the roots of polynomials*  
Society of Industrial and Applied Mathematics Optimization Conference, Boston, May 2008
- *Competition between discrete random variables, with applications to occupancy problems*<sup>+</sup>  
6th International Lattice Path and Combinatorics Conference  
East Tennessee State University, July 2007

#### Invited Seminar Presentations

- *Activity & multiplicity in eigenvalue and polynomial root optimization problems*  
Rutgers University Optimization Seminar, February 8, 2018
- *Polynomials and their critical points*  
Seattle University Mathematics Seminar, November 02, 2017
- *What is the Preparation for Industrial Careers in Mathematics "PIC Math" Course?*  
UW Tacoma Mathematics Junior Seminar October 18, 2016
- *Data quality visualization for aggregate surveillance data with application to nowcasting*  
International Society for Disease Surveillance (ISDS) Webinar, March 16, 2016
- *Activity & multiplicity in polynomial root and eigenvalue optimization*  
West Coast Optimization Meeting, University of British Columbia Okanagan, October 10, 2015
- *The Riemann Sum in real life*  
Mathematics & Computer Science Seminar, University of Puget Sound, April 6, 2015
- *A foray into polynomial root optimization*  
IAS Brown Bag Seminar, University of Washington Tacoma, February 4, 2015
- *Variational properties of spectral max functions*  
Centre for Optimization, Convex Analysis & Nonsmooth Analysis Seminar  
University of British Columbia Okanagan, November 2012
- *What you know about math?*  
UW Tacoma Sophomore Retreat, University of Washington Tacoma, September 2012

- *Exploring polynomials with the Gauss Lucas Theorem and Newton polygons*  
Pacific Lutheran University Mathematics Seminar, October 2010
- *Stability and the spectral abscissa*  
University of Washington Optimization Seminar, November 2009
- *Globally robust methods for constrained nonlinear programming*  
West Coast Optimization Meeting, University of Washington, Seattle, May 2009
- *Variational analysis of functions of roots of polynomials*  
University of Washington Optimization Seminar, January 2007

## UNDERGRADUATE SENIOR CAPSTONE ADVISING

- **2018:** Emily Hoang, *Linear Optimization and the Simplex Method*. Best capstone paper award.  
Benita Beale & Matt Lyons, *Analyzing Trends in Survey Data*. Best capstone presentation award.  
Joshua Melanson, *Edgy Optimization: Optimality Conditions in Constrained Nonlinear Problems*
- **2017:** Megan Sharp, *Classifying individuals using mathematics*. Best capstone presentation award.

## TEACHING & COURSE DEVELOPMENT

### University of Washington Tacoma

#### Courses Taught

- TMATH 110: Introduction to Statistics with Applications  
Aut12, Win13, Aut13, Spr14, Spr15, Spr16
- TMATH 120: Precalculus  
Spr12
- TMATH 124: Calculus with Analytic Geometry I  
Aut11 (two sections), Aut14 (two sections), Win16
- TMATH 125: Calculus with Analytic Geometry II  
Win12, Spr13
- TMATH 126: Calculus with Analytic Geometry III  
Spr12, Spr13, Spr17
- TMATH 307: Introduction to Differential Equations  
Win12, Win15, Aut15, Aut16
- TMATH 310: Statistics for Environmental Applications  
Aut12, Spr14
- TCSS 321: Discrete Structures I  
Win13, Aut13
- TMATH 324: Multivariable Calculus  
Aut15, Aut16
- TMATH 327: Introduction to Real Analysis  
Win15
- TMATH 390: Probability & Statistics for Scientists and Engineers  
Spr15, Win16, Spr16, Spr18 (two sections), Aut18 (two sections)
- TMATH 424: Real Analysis I  
Win17
- TMATH 425: Real Analysis II  
Spr17
- TMATH 490: Special Topics in Mathematics: Preparation for Industrial Careers in Mathematics  
Win17
- TIAS 498: Independent Study (Mathematics)
  - Introduction to Real Analysis, Spr13 (1 credit, 1 student)
  - Applied Optimization, Spr15 (1 credit, 3 students)
  - Applied Linear and Integer Optimization, Spr17 (5 credits, 2 students)
  - Nonlinear Optimization Part I, Spr17 (5 credits, 1 student)

- Logistic Regression and Clustering, Spr17 (5 credits, 3 students)
- Applied Linear and Integer Optimization, Spr17 (5 credits, 1 student)
- TMATH 498: Independent Study
  - Linear Optimization, Aut17 (5 credits, 1 student)
  - Nonlinear Optimization Part II, Aut17 (5 credits, 1 student)
  - Applied Clustering, Aut17 (5 credits, 2 students)
  - Queuing Systems, Aut18 (5 credits, 3 students)
- TESC 499: Undergraduate Research
  - Advanced statistical methods for oceanography: An analysis of Quatermaster Harbor Water Properties and Nutrients, Aut12, Win13, and Spr13 (1 credit, 1 student)

#### Courses Proposed

- TESC 502: Graduate Environmental Statistics, 2015
- TMATH 328: Introduction to Real Analysis II, 2014. Course revision to TMATH 425 in 2015.
- TMATH 327: Introduction to Real Analysis I, 2012. Course revision to TMATH 424 in 2015.

### University of Puget Sound

#### Courses Taught

- MATH 160: Introduction to Applied Statistics, Autumn 2010 (three sections), Spring 2011
- MATH 181: Calculus II, Spring 2011 (two sections)

### Teaching and Professional Development

- *Strengthening Educational Excellence with Diversity Institute*, UW Tacoma, Summer 2018
- *Compassion Awareness Resilience & Empowerment*, UW Tacoma, January 2018
- *Minicourse on Teaching Introductory Statistics Using the Guidelines from the American Statistical Association*, Joint Mathematics Meetings, San Diego, January 2018
- *Mathematical Association of America Minicourse on the Scholarship of Teaching and Learning*, Joint Mathematics Meetings, Seattle, January 2016
- *Safer Zone Training*, UWT Center for Equity & Inclusion, September 2016
- *Inquiry Oriented Learning Workshop*, Mathfest (Annual meeting of the Mathematical Association of America), Portland, August 2014
- *Writing Fellows Institute*, UW Tacoma, 2012-2013
- *Using Inquiry Based Learning in Second-Year Calculus and Courses for Prospective Teachers* Mathematical Association of America Professional Enhancement Program University of California Santa Barbara, June 19-22, 2012
- *Getting Started with Inquiry-Based Learning* Mathematical Association of America, Pacific Northwest Section Meeting, Portland, April 2012

## SERVICE

### Service at the University of Washington Tacoma

#### Campus-wide Service

##### *Quantitative Literacy Task Force (January 2013-January 2014)*

(with: Dr. Doug Wills, Dr. Peter Selkin, Ms. Linda Dawson, and Dr. Cynthia Stanich) Developed a comprehensive plan for addressing the quantitative literacy including student support, faculty support, and identifying sources of funding. Specific personal contributions include a survey of the quantitative gaps reported by instructors of courses that have Introductory Statistics with Applications (TMATH 110), Precalculus (TMATH 120), and Calculus I (TMATH 124) as prerequisites; developing a diagnostic quiz for Calculus I, proposing and coordinating short-term quantitative boot-camps with the TLC and instructors in chemistry, physics, business, and computer science. Included submitting an NSF planning grant proposal (see page 2).

### *Statistical Consulting*

On a case-by-case basis I meet with faculty to assist with statistical analyses in their research.

### *School of Interdisciplinary Arts & Sciences (SIAS) Service*

#### *Faculty Searches*

##### *Search & Interview Committees*

- 2018 Math Temporary Lecturer competitive hire, Chair (3 candidates)
- 2016-17 Math Lecturer competitive hire, Chair (4 candidates)
- 2015-16 Psychology Research Methods Competitive Lecturer (3 candidates)
- 2015-16 Mathematics Geometry/History Assistant Professor (3 candidates)
- 2014-15 Mathematics Competitive Lecturer (7 candidates, 4 positions)
- 2014-15 Applied Mathematics or Statistics Assistant Professor (4 candidates)
- 2013-14 Biology Competitive Lecturer (search only, 5 positions)
- 2012-13 Mathematics Competitive Lecturer (4 candidates)

##### *Interview Committees*

- 2015 Groundwater Hydrology Tenure-Track Interview Committee (3 candidates)
- 2014 Part-Time Mathematics Lecturer Interview Committee (2 candidates)
- 2014 Cluster Hire in Hydrology Interview Committee (4 candidates)
- 2013 Cluster Hire in Hydrology Interview Committee (10 candidates)
- 2012 Chemistry Competitive Lecturer Interview Committee (1 candidate)

#### *Peer evaluations of teaching*

- 2018 Dr. Maureen Kennedy
- 2017 Mr. Michael Kula, Dr. Nicole Blair
- 2016 Ms. Linda Dawson
- 2015 Dr. Emily Cilli-Turner, Dr. Erik Tou, Dr. Peter Horak
- 2013 Dr. Sushil Oswal, Ms. Haley Skipper, Dr. Jutta Heller
- 2012 Dr. Ryan Card

### *Division of Sciences & Mathematics (SAM) Service*

#### *Co-Coordinator for Mathematics Program (August 2018-Present)*

Facilitate the math major meetings, serve the division chair and vice chair with scheduling, search, interview, and train new part-time hires, facilitate math major assessment programs, serve academic advisors with custom placement, edge-case transfer students, and notice of new curriculum, act as a contact for non-math faculty with math content questions, and act as a contact for other schools with curriculum questions.

#### *Environmental Science & Studies Survey Data (January 2012-September 2014)*

Involved assessing the needs for cleaning several quarter's worth of two surveys: one for students entering the major and one for and graduating students, as well as two surveys given to alumni. Results of this work included: Environmental Studies Report (Nov. 2012), Environmental Science & Studies Alumni and Senior Survey Data Presentation, SAM Retreat (Jan. 2013, with Lia Wetzstein), Report of Technical Recommendations for Program Assessment (Sept. 2014).

#### *Calculus Coordinator, September 2015-September 2016*

The calculus coordinator establishes and maintains a level of quality and consistency across all sections in the calculus sequence by providing calculus instructors: a sample syllabus, a list of topics and the course objectives, and a copy of the textbook; by ordering textbooks for all sections sections, mentoring both full-time and part-time calculus instructors, facilitate sharing teaching materials and exams, and fielding math placement questions in consultation with the math coordinators.

## Community Service

- 2018 Multicultural Child and Family Hope Center STEM night, May 22, 2018
- 2016-17 McCarver Scholars Volunteer, McCarver Elementary (through the Peace Community Center, Tacoma)
- 2016 Mann Middle School Career Day, Lakewood, WA. Spoke with 7 groups of 20-25 seventh graders about math puzzles, careers that involve math, and answered their questions.
- 2016 Seattle Expanding Your Horizon's (SEYH) outreach for middle school girls in STEM at Seattle University, March 12, 2016, with Dr. Ruth Vanderpool and Dr. Emily Cilli-Turner, Session 44 on the mathematics of paper folding; received positive feedback.
- 2015 Organized public Screening of the documentary "Return of the River" hosted by the Division of SAM and SIAS at UWT.
- 2015 Estimation activity for STEM night at Totem Middle School in Kent, WA.
- 2009 Graduate panelist for Nebraska Conference for Undergraduate Women in Mathematics.
- 2006-07 Co-teacher, TOPS elementary school math enrichment program, Seattle, WA.

## Professional Service

- 2016 Judge for the undergraduate poster session at the Joint Mathematics Meetings in Seattle, WA
- 2015 Organizer for the double-length session on mathematical modeling at the Pacific Northwest Regional Meeting of the Mathematical Association of America, UWT, Tacoma, WA

## Reviewing

I have reviewed articles for *Journal of Optimization Theory & Applications* and *Set-Valued and Variational Analysis*.