

*Eric R. Ruggieri*

Department of Mathematics and Computer Science  
College of the Holy Cross  
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**Education:**

**Ph. D. Applied Mathematics**, Brown University, May 2010

*Ph.D. Dissertation:* "Inference in discrete high dimensional space: An exploration of the Earth's ice sheets through change point and variable selection techniques"

**Sc. M. Applied Mathematics**, Brown University, May 2006

**B.A. Mathematics/Computer Science**, Providence College, May 2005

**Teaching Experience:**

*College of the Holy Cross* – **Associate Professor of Mathematics** August 2017 – present

*College of the Holy Cross* – **Assistant Professor of Mathematics** August 2013 – July 2017

**Courses Taught**

- MATH 120 – Statistical Reasoning, Fall 2016 (2 sections)
- STAT 220 (formerly MATH 220 and MATH 299) – Statistics, Spring 2020 (2 Sections), Fall 2018 (2 sections), Spring 2018 (2 sections), Fall 2015 (2 sections), Spring 2015 (2 sections), Spring 2014 (2 sections), Fall 2013  
\*New Course\* sought and received approval from Committee on the Curriculum
- STAT 226 (formerly MATH 299) – Bayesian Statistics, Fall 2018  
\*New Course\* sought and received approval from Committee on the Curriculum
- STAT 231 (formerly MATH 231) – Linear Models, Fall 2019, Spring 2019, Spring 2018
- STAT 375 (formerly MATH 375) – Probability Theory, Fall 2019, Spring 2019, Fall 2017, Spring 2017, Fall 2016, Fall 2015, Spring 2015, Fall 2013
- MATH 376 – Mathematical Statistics, Spring 2014, Spring 2016, Spring 2017
- STAT 380 (formerly MATH 380 and MATH 392)– Statistical Computing (Seminar), Spring 2020, Fall 2017, Spring 2016  
\*New Course\* sought and received approval from Committee on the Curriculum
- MATH 400 – Investments & Financial Markets (Independent Study), Spring 2019
- MATH 400 – Financial Mathematics (Independent Study), Spring 2016, Spring 2017, Fall 2017
- MATH 400 – Evaluation of Actuarial Models (Independent Study), Spring 2017
- MATH 400 – Models for Life Contingencies (Independent Study), Fall 2016
- MATH 400 – Statistical Computing (Independent Study), Spring 2014
- MATH 410 – Techniques of Data Analysis [Time Series and Forecasting] (Directed Project), Spring 2016
- MATH 410 – Bayesian Change Point Models (Directed Project), Spring 2015

**Senior Theses**

- Piotr Pogorzelski '20, Title: Predicting NCAA March Madness Games Using Bayesian Logistic Regression Techniques [College Honors]
- Rui Qiang '19, Title: Bayesian Change Point Analysis [College Honors]
- Alex Clark '19, Title: A Stochastic Model of Single Lane Vehicular Traffic Flow
- Michelle Yu '18, Title: Detecting Change Points in Climate [Clare Booth Luce Scholar 2017-18]

**Reader for College Honors Theses**

- Cara Donovan '18, Title: A Dynamical Systems Approach to Climate Modeling

**Reader for Departmental Theses**

- Jinghan (Damon) Chen '20: Title: Persistent Homology in Ballistic Deposition simulation models

**Summer Research Students**

- Marialena Bevilacqua '20, Topic: Predicting a collegiate player's 'success' in NBA, Summer 2019

- Xu (Mike) Ding '21, Topic: Simulating the Board Game RISK, Summer 2019. Project featured on HC website [\[Link\]](#)
- Jeenn Barriero '18, Topic: Bayesian variable selection applied to heart disease data, Summer 2017
- Rui Qiang '19, Topic: Bayesian change point analysis of financial time series, Summer 2017
- Richard Bielak '18, Topic: Bayesian change point models, Summer 2016
- Fan Wu '18, Topic: Change point models applied to financial time series, Summer 2016
- Joe Terranova '16, Topic: Bayesian change point models, Summer 2015
- Marcus Antonellis '15, Topic: Bayesian sequential change point detection, Summer 2014

#### **Other Student Research Projects**

- Josh Clark '19 and William MacDonald '20, Topic: Predicting Red Sox Success in the Postseason: A Bayesian Approach to a Hierarchical Model, presented poster at Joint Mathematics Meetings, January 2019 \*winner of prize for outstanding poster\*
- Caitlin Harty, '18, Topic: Analyzing Monopoly Using Statistical Computing, departmental honors presentation, May 2018
- Michael Hanlon '18, Topic: A Statistical Analysis of Blokus, presented poster at Joint Mathematics Meetings, January 2018
- Jack Champagne '19, Topic: Simulating Chutes and Ladders, presented poster at Joint Mathematics Meetings, January 2018 \*winner of prize for outstanding poster\*

#### **Duquesne University - Assistant Professor of Statistics August 2010 – June 2013**

##### **Courses Taught:**

- MATH 125 – Fundamentals of Statistics, Fall 2010, Spring 2011, Summer 2011, Summer 2012
- MATH 125C – Fundamentals of Statistics, Spring 2013 (Service Learning)
- MATH 225 - Introduction to Biostatistics, Fall 2010, Spring 2011, Fall 2011 (2 sections), Spring 2012
- MATH 301 – Introduction to Probability and Statistics I, Fall 2011, Fall 2012
- MATH 302W – Introduction to Probability and Statistics II, Spring 2012, Spring 2013
- CPMA 521 – Probability and Markov Chains, Fall 2012
- CPMA 522 – Statistical Inference, Fall 2012
- CPMA 573 – Statistical Computing, Spring 2013

##### **Master's Thesis Advisor**

- Bryan Nelson – Thesis “Modeling the NCAA Tournament Through Bayesian Logistic Regression” defended July 2012
- Pete Stevenson – Thesis in progress

##### **Master's Thesis Committee**

- Julia Jacovino – Spring 2013
- James Gardner – Summer 2012
- Hernan Maldonado – Spring 2011

#### **Providence College - Special Lecturer of Mathematics September 2008 – May 2010**

- MTH 132 - Calculus & Analytic Geometry II, Fall 2008, Fall 2009

#### **Brown University - Special Lecturer of Applied Mathematics September – December 2008**

- AM 171 – Information Theory, Fall 2008

#### **Honors and Awards:**

- Nominated for **Presidential Award for Excellence in Teaching** 2009 – Brown University

#### **Teaching Related Publications:**

- Ruggieri, E. (2019), “Statistics in the World Around Us – A Group Project for an Introductory Statistics Course,” *Universal Journal of Educational Research*, 7(4), 1061-1073. doi: 10.13189/ujer.2019.070418
- Ruggieri, E. (2016), “Visualizing the Central Limit Theorem through Simulation,” *PRIMUS*, 26(3), 229-240. doi: 10.1080/10511970.2015.1094684
- Russell, M., Stern, L., Richardson, J., Ruggieri, E., and Severino, C. (2003), “Effective use of algorithms in action web site,” *Journal of Computing Sciences in Colleges*, 18(5), 237-238.

**Teaching Related Presentations:**

- *Statistics in the World Around Us – A Group Project for an Introductory Statistics Course*, MAA Contributed Paper Session: Best Practices for Teaching the Introductory Statistics Course, Joint Mathematics Meetings 2015, San Antonio, TX, January 2015
- *Visualizing the Central Limit Theorem through Simulation*, MAA Contributed Paper Session: Data, Modeling, and Computing in the Introductory Statistics Course, Joint Mathematics Meetings 2014, Baltimore, MD, January 2014.
- *Teaching Statistics Online Using Blackboard Collaborate*, MAA Contributed Paper Session: Best Practices for Teaching Online Courses, Mathfest 2013, Hartford, CT, August 2013
- *Statistics in the World Around Us*, MAA Contributed Paper Session: Novel Ways to Incorporate Writing into Mathematics Classes, Mathfest 2011, Lexington, KY August 2011
- *The Mnemonics of Mathematics*, presented at the 6<sup>th</sup> annual New England Peer Tutoring Association Meeting, Bryant University, Smithfield, RI, April 2005
- *Effective Use of the Algorithms in Action Website*, presented at 8<sup>th</sup> Annual Consortium for Computing Sciences in Colleges Northeastern Conference (CCSCNE), CCRI, Providence, RI, April 2003

**Publications:**

- *Bayes.chgpt: An R package for performing Bayesian change point analysis, (in progress).*
- With IG Hatvani, D. Topal, and Z. Kern. *Spatially clustered changepoints in ice core  $\delta^{18}O$  across Greenland concurring with regime-shifts of large-scale atmospheric variability over the past millennium (in progress).*
- Ruggieri, E., Yu, M., and Qiang, R. (2020), “Change Point Models: What are They and Why Do We Need Them?”, *Undergraduate Mathematics and Its Applications*, **41(1)**, 61-80.
- Yu, M. and Ruggieri, E. (2019), “Change Point Analysis of Global Temperature Records,” *International Journal of Climatology*, **39**, 3679-3688. doi: 10.1002/joc.6042
- Ruggieri, E. (2018) “A Pruned, Recursive Solution to the Multiple Change Point Problem,” *Computational Statistics*, **33(2)**, 1017-1045. Doi: 10.1007/s00180-017-0756-9
- Civitarese, AM, Ruggieri, E., Walz, JM, Mack, DA, Heard, SO, Mitchell, M., Lilly, C.M., Landry, K.E., and Ellison, R.T. (2017), “A 10-Year Review of Total Hospital-Onset ICU Bloodstream Infections at an Academic Medical Center,” *CHEST*, **151(5)**, 1011-1017. doi: 10.1016/j.chest.2017.02.008
- Ruggieri, E. and Antonellis, M. (2016), “An exact approach to Bayesian sequential change point detection,” *Computational Statistics and Data Analysis*, **97**, 71-86. doi: 10.1016/j.csda.2015.11.010
- Caramiciu, J.A., Adams, J.P., McKnown, B.T., Frence, C.D., Ruggieri, E.R. and Heard S.O. (2014), “Effects of an in-house coordinator and practitioner referral rather than proxy referral on tissue donation rates,” *Transplantation Proceedings*, **46(5)**, 1274-1280. doi: 10.1016/j.transproceed.2014.03.005
- Ruggieri, E., and Lawrence, C.E. (2014), “The Bayesian Change Point and Variable Selection Algorithm: Application to the  $\delta^{18}O$  Record of the Plio-Pleistocene,” *Journal of Computational and Graphical Statistics*, **23(1)**, 87-100. doi:10.1080/10618600.2012.707852
- Ruggieri, E. (2013), “A Bayesian Approach to Detecting Change Points in Climatic Records,” *International Journal of Climatology*, **33(2)**, 520-528. doi: 10.1002/joc.3447
- Ruggieri, E., and Lawrence, C.E. (2012), “On Efficient Calculations for Bayesian Variable Selection,” *Computational Statistics and Data Analysis*, **56**, 1319-1332. doi:10.1016/j.csda.2011.09.026
- Ruggieri, E. (2011), “Inference in discrete high dimensional space: An exploration of the Earth’s ice sheets through change point and variable selection techniques,” Ph.D. Dissertation, Brown University.
- Ruggieri, E., Herbert, T., Lawrence, K., and Lawrence, C.E. (2009), “The Change Point Method for Detecting Regime Shifts in Paleoclimatic Time Series: Application to  $\delta^{18}O$  Time Series of the Plio-Pleistocene,” *Paleoceanography*, **24**, PA1204, doi:10.1029/2007PA001568
- Ruggieri, E., and Schreiber, S.J. (2005), “The Dynamics of the Schoener-Holt Model of Intra-Guild Predation,” *Mathematical Biosciences & Engineering*, **2**, 279-288.

**Conference Proceedings**

- Civitarese, A., Ellison, R.T., Mack, D.A., Ruggieri, E., Heard, S.O., and Walz, J.M. (2014), “Sustained Reduction in Nosocomial Bloodstream Infections in the ICU Setting,” *Critical Care Medicine*, **42**(12), A1477. doi: 10.1097/01.ccm.0000457983.02079.c0

### **Letter to the Editor**

- Civitarese, AM, Ruggieri, E., Walz, JM, Mack, DA, Heard, SO, Mitchell, M., Lilly, C.M., Landry, K.E., and Ellison, R.T. (2019), “RE: Preventability of hospital onset bacteremia and fungemia: A pilot study of potential healthcare-associated infection outcome measure, by Dantes et al (2019)”, *Infection Control and Hospital Epidemiology*. doi: 10.1017/ice.2019.193

### **Published Software:** Available at <http://www.mathcs.holycross.edu/~eruggier>

*Pruned\_Bayes* – [A more efficient Sequential Bayesian Change Point algorithm] – Programmed in Matlab

- A more efficient, but approximate algorithm for performing sequential Bayesian change point analysis using a linear regression model input by user
- Has the ability to analyze longer time series than previous software packages.
- Determines uncertainty estimates surrounding the number and location of change points, or regime boundaries

*CLT\_Simulation* – [Interactive Central Limit Theorem Simulator] – Programmed in Matlab

- Simulator lets the user draw an arbitrary population distribution and then watch as the sampling distribution for the mean, median, or standard deviation grows in real-time.

*Bayes\_Sequential\_Chgpt* – [Sequential Bayesian Change Point algorithm] Programmed in Matlab

- An efficient algorithm for performing sequential Bayesian change point analysis using a linear regression model input by user
- Determines uncertainty estimates surrounding the number and location of change points, or regime boundaries

*Bayes\_Chgpt* - [Bayesian Change Point algorithm] – Programmed in Matlab

- An efficient algorithm for performing a Bayesian change point analysis using a linear regression model input by user
- Determines uncertainty estimates surrounding the number and location of change points, or regime boundaries
- Included in *Acycle*, a software package for analysis of time series designed for paleoclimate research and education

*Bayes\_Chgpt\_VS* - [Bayesian Change Point and Variable Selection algorithm] – Programmed in Matlab

- Combines the Bayesian Change Point and EBIR algorithms into a single algorithm
- Also available at website of Journal of Computational and Graphical Statistics

*EBIR* - [Exact Bayesian Inference in Regression] – Programmed in Matlab

- An efficient algorithm for performing Bayesian variable selection and model averaging
- Calculates the posterior probability of a model given a data set and the marginal probability of including each of the predictor variables

*Change Point* – Programmed and Developed in Matlab with Graphical User Interface

- Calculates optimal placement of any number of change points, or regime boundaries, using least squares linear regression
- Generates sinusoidal or polynomial regression model or can have regression model input by user

### **Presentations and Invited Talks:**

- *Change Point Analysis of Global Temperature Records*, Contributed Paper Session, MAA Northeast Section Spring Meeting, June 2019
- *Climate Change, GPS Directions, and DNA Searches: How Recursion Can Make Hard Problems Easier to Solve*, Pi Mu Epsilon Induction Ceremony, Providence College, April 2017
- *Climate Change! Global Warming! Searching for Change Points in Climate Records*, Natural Science Seminar Series, Assumption College, Worcester, MA, February 2016
- *A Pruned, Recursive Solution to the Multiple Change Point Problem*, AMS Session on Probability Theory, Stochastic Processes, and Statistics, Joint Mathematics Meetings, Seattle, WA, January 2016
- *A Bayesian Approach to Sequential Change Point Detection*, AMS Session on Statistics, Joint Mathematics Meetings 2015, San Antonio, TX, January 2015

- *A Sequential Approach to Detecting Change Points*, AMS Session on Statistical Modeling, Big Data, and Computing, Joint Mathematics Meetings 2014, Baltimore, MD, January 2014
- *A Bayesian Approach to Detecting Change Points in Climatic Records*, New Faculty Talk, MAA Northeast Fall Section Meeting, Wheaton College, Norton, MA, November 2013
- *A Bayesian Approach to Detecting Change Points in Climatic Records*, Department of Mathematics and Computer Science Colloquium, Providence College, Providence, RI, October 2013
- *A Bayesian Approach to Detecting Change Points in Climatic Records*, College of the Holy Cross, Worcester, MA, January 2013
- *A Bayesian Approach to Detecting Change Points in Climatic Records*, AMS Session on Probability and Statistics, Joint Mathematics Meetings, San Diego, CA, January 2013
- *A More Efficient Approach to Bayesian Variable Selection*, AMS Special Session on Groups, Algorithms, Complexity, and Theory of Security, Joint Mathematics Meetings, Boston, MA, January 2012
- *A Mathematical Exploration of the Earth's Glacial System*, Pi Mu Epsilon Induction Ceremony, Providence College, Providence, RI, April 2010.
- *The Frequency of Glacial Events*, University of Massachusetts at Amherst, Amherst, MA, February 2010
- *The Frequency of Glacial Events*, Kenyon College, Gambier, OH, February 2010
- *The Frequency of Glacial Events*, Niagara University, Niagara, NY, February 2010
- *The Frequency of Glacial Events*, Duquesne University, Pittsburgh, PA, February 2010
- *The Mid-Pleistocene Transition: From Forcing to Pacing of Ice Sheets*, AMS Session on Probability and Statistics, Joint Mathematics Meetings, San Francisco, CA, January 2010

#### **Statistical Consultation on Faculty/Community Projects**

- Organ and Tissue Donation Rates at UMass Memorial Hospital, PI: Stephen Heard, UMass Medical School, Fall 2017
- City of Worcester – Survey to inform strategic plan (with Denise Bell), Fall 2017
- Sleep and Fatigue in Childhood Cancer – A Chronobiological Research Approach, PI: Rebecca Kronk, School of Nursing, Duquesne University, September 2012 – June 2013
- Are Children with Fragile X Losing their Zzzz's and Y? Part 2, PI: Rebecca Kronk, School of Nursing, Duquesne University, Dec. 2011 – June 2013
- Music Therapy vs. Music Medicine for Patients in Intensive Care, PI: Carol Schultis, Temple University, Jan. 2012 – Apr. 2012
- Music Therapy NIH Grant, PI: Elaine Abbott, Mary Pappert School of Music, Duquesne University, June-July 2011

#### **Statistical Consultation on Student Projects**

- Brian Toner '17 – Identification of Treatment Effect for Alzheimer's Disease Based on Blinded Clinical Data
- Emily Winn '17 – Topological Modeling of Force Networks in Granular Materials (Senior Honors Thesis)
- Alex Taurone '17 – AfterMath of Genocide: Unraveling Balckboxes in the Guatemalan Civil War (Senior Honors Thesis)
- Charles Schufreider '17 – On the Format of the Scholia to the Iliad in the Venetus A Manuscript (College Honors Thesis)

#### **Statistical Consultation (General)**

- Expert witness on federal tax fraud case, March-October 2019

#### **Grants and Fellowships:**

- "RUI: Bayesian Change Point Analysis of Autocorrelated Time Series," (PI: E. Ruggieri, NSF Statistics program 2018, unfunded, \$188,920)
- "RUI: A Bayesian Approach to Sequential Change Point Detection," (PI: E. Ruggieri, *funded*, \$135,490, July 15 2014 – June 30, 2018, Award #:DMS-1407670)
- 2014 Batchelor-Ford Summer Faculty Fellowship, February 2014
- "A Bayesian Approach to Sequential Change Point Detection," (PI: E. Ruggieri, NSF Statistics program 2012, unfunded)

- McNulty Summer 2012 Grant Writing Funding Award, July 2012
- Dissertation Fellowship, Brown University, September 2009-May 2010
- Brown University Fellowship, September 2005-May 2006

#### **Software Evaluation:**

- Quantum Simulations Artificial Intelligence Probability Tutor
  - Product evaluation of an artificial intelligence Probability tutor (DOE grant). Phase II of project concerned Data Reading and Interpretation
  - Spoke with researchers during development stage
  - MA 125 students try out and give feedback on software, had access to finished product
  - Wrote letter of support for software to be submitted with DOE grant

#### **Reviewer:**

- Canadian Journal of Statistics, **Computational Statistics (5)**, Computational Statistics and Data Analysis, Data Mining and Knowledge Discovery, Entropy, Environmental and Ecological Statistics, International Journal of Climatology, Journal of the American Statistical Association, Journal of Industrial Engineering International, Journal of the Korean Statistical Society, Journal of Machine Learning Research, Journal of Statistics Education, Nature Communications (2), Proceedings for the National Academy of Science (PNAS), **PRIMUS (6)**, Pure and Applied Geophysics, Statistical Modeling, Symmetry, The American Statistician

#### **Professional Development:**

##### **Rubric Team Member for AP Statistics Exam, June 2021, June 2020**

- Worked in a small group with Question Leader to develop scoring guidelines and training materials for one of the free-response questions

##### **Table Leader for AP Statistics Exam, June 2021, June 2020, June 2019**

- Leadership position within the AP grading structure. Led team of 8 readers grade, helping them grade consistently and according to the rubric.

##### **Reader for the AP Statistics Exam, June 2018, June 2017, June 2015, June 2014, June 2013**

- AP Higher Ed Faculty focus group on AP credit and placement policies (June 2018)
- Professional development activities include – talks by prominent statisticians, curriculum development, best practices in teaching introductory statistics.

##### **Project NExT (New Experience in Teaching) Fellow [Blue 10 Dot], August 2010 – August 2011**

- One of 82 new Mathematics faculty nationwide
- Attended workshops and seminars aimed at improving teaching and adjusting to faculty life. Topics included ‘Undergraduate Research –How to Make it Work’, ‘Effective group projects’, ‘The effect of online homework on students learning and retention’, ‘Mathematical Biology in the Mathematics Curriculum’, etc.

##### **Sheridan Center for Teaching and Learning Certificate Program**

- Certificate III – Developing a Teaching Portfolio (May 2009)  
[http://www.brown.edu/Administration/Sheridan\\_Center/certificateprograms/pds.html](http://www.brown.edu/Administration/Sheridan_Center/certificateprograms/pds.html)
- Certificate II – Classroom Tools Seminar (May 2008)  
[http://www.brown.edu/Administration/Sheridan\\_Center/certificateprograms/ct.html](http://www.brown.edu/Administration/Sheridan_Center/certificateprograms/ct.html)
- Certificate I – Sheridan Teaching Seminar (May 2006)  
[http://www.brown.edu/Administration/Sheridan\\_Center/certificateprograms/sts.html](http://www.brown.edu/Administration/Sheridan_Center/certificateprograms/sts.html)

##### **Passed Actuarial Exam P (Probability)**

- Sought out real exam experience to become a better advisor to our actuarial students

#### **Meetings Attended:**

##### **National**

- **Joint Mathematics Meetings, Virtual, Jan 6-9, 2021**
- **Joint Mathematics Meetings, Denver, CO, Jan 15-18, 2020**
- **Mathfest, Cincinnati, OH, July 31 – Aug 3, 2019**
- **Joint Mathematics Meetings, Baltimore, MD, Jan 16-19, 2019**

- *Mathfest*, Denver, CO, Aug. 1-4, 2018
- *Joint Mathematics Meetings*, San Diego, CA, Jan 10-13, 2018
- *Mathfest*, Chicago, IL, July 26-29, 2017
- *Joint Mathematics Meetings*, Atlanta, GA, Jan 4-7, 2017
- *Joint Mathematics Meetings*, Seattle, WA, Jan 6-9, 2016
- *Joint Mathematics Meetings*, San Antonio, TX, Jan 9-13, 2015
- *Joint Statistics Meeting*, Boston, MA, Aug 2-7, 2014
- *Joint Mathematics Meeting*, Baltimore, MD, Jan 15-18, 2014
- *Mathfest*, Hartford, CT, July 31-August 3, 2013
- *Joint Mathematics Meeting*, San Diego, CA, Jan 9-13, 2013
- *Joint Mathematics Meeting*, Boston, MA, Jan 4-7, 2012
- *MathFest*, Lexington, KY, August 4-6, 2011
- *Joint Mathematics Meeting*, New Orleans, LA, Jan 6-9, 2011
- *MathFest*, Pittsburgh, PA, Aug 5-7, 2010
- *Joint Mathematics Meeting*, San Francisco, CA, Jan. 13-16, 2010

### **Regional**

- **MAA Northeast Section Spring Meeting, Virtual, June 5, 2021**
- **MAA Northeast Section Fall Meeting, Virtual, Nov 20-21, 2020**
- **MAA Northeast Section Fall Meeting**, Babson College, Wellesley, MA, Nov 22-23, 2019
- **MAA Northeast Section Spring Meeting**, Fitchburg State University, Fitchburg, MA, May 31-June 1, 2019
- **MAA Northeast Section Fall Meeting**, Southern New Hampshire University, Manchester, NH, Nov 16-17, 2018
- **MAA Northeast Section Spring Meeting**, University of New Haven, New Haven, CT, June 1-2, 2018
- **MAA Northeast Section Fall Meeting**, Sacred Heart University, Fairfield, CT, Nov. 17-18, 2017
- **MAA Northeast Section Fall Meeting**, Trinity College, Hartford, CT, November 18-19, 2016
- **New England Isolated Statisticians Meeting**, Boston College, Boston, MA, Oct 17, 2015
- **MAA Northeast Section Spring Meeting**, University of New England, Biddeford, ME, June 3-4, 2016
- **MAA Northeast Section Fall Meeting**, Gordon College, Wenham, MA, Nov 20-21, 2015
- **New England Isolated Statisticians Meeting**, Boston College, Boston, MA, Oct 17, 2015
- **MAA Northeast Section Fall Meeting**, Southern Connecticut State University, New Haven, CT, Nov 21-22, 2014
- **New England Isolated Statisticians Meeting**, Boston College, Boston, MA, Nov 1, 2014
- **MAA Northeast Section Fall Meeting**, Wheaton College, Norton, MA, Nov 22, 2013
- **New England Isolated Statisticians Meeting**, College of the Holy Cross, Worcester, MA, Nov. 2, 2013
- **Allegheny Mountain Section NExT Fall Workshop**, Pittsburgh, PA, Sept 18, 2010; Sept 17, 2011; Sept 15, 2012

### **Workshops Attended:**

- **Myths and Facts of the Promotion Process, April 15, 2021**
- **Hosting Virtual Section Meetings (MAA), Jan 21, 2021**
- Data Visualization and Mapping Tools, Nov 12, 2019
- First-Year Advising Dinner and Discussion, Joyce Contemplative Center, Sept 5, 2019
- Common Requirements August Workshop, Aug 29, 2019
  - Set up, facilitate and take notes of table discussions, present modeling activity
- Teaching Introductory Statistics in a Data-Driven World, Aug 1-2, 2019
- First-Year Advising Workshop, June 6, 2019. Workshops continued throughout the year.
- Responding to Students in Distress, March 26, 2019
- First-Year Advising workshop, May 30, 2018. Workshops continued throughout the year
- Teaching Statistics Using R and RStudio, Sept 9, 2017
- Bayesian Statistics for Undergraduates, Olin College of Engineering, June 13, 2016
- Hewlett Mellon: Assessing Project Courses, June 7, 2016
- Myths and Facts about the Tenure Process, March 26, 2015, April 7, 2016

- R and RStudio, August 26, 2015
- Hewlett Mellon: Putting the “I” in ISC Workshop, July 20-21,2015
- Commenting on Student Writing Lunch Discussion, Oct 22, 2014
- Advising Workshop, August 21, 2014 (Follow-up session March 17, 2015)
- Hewlett Mellon Statistics Workshop, July 23, 2014
- NSF CAREER Grant Lunch Discussion, June 2014
- Letters of Recommendation, Center for Teaching, April 8, 2014
- Community Based Learning 101, October 22, 2013
- Making the Case: Integrating Case Studies in our Liberal Arts Classrooms, August 15, 2013
- Why Use Bb Collaborate Web Conferencing? February 2013
- Grant Writing Seminar, September 2012
- Documenting the Impact of Your Scholarship, May 2012
- CTE Workshop “Preparing an Effective Case for Third-Year Review, Promotion and Tenure”, March 2012
- Service Learning Open House, November 2011
- Blackboard 9.1 Certification, April 2011
- New Faculty Grant Writing Session, Feb 2011
- CTE New Faculty Workshop "Work Smarter, Not Harder", Sept. 2010
- Blackboard 7.3 Certification, July 2010

### Service:

#### National

- Chair of Northeast Section of the MAA, Nov 2019 - present
  - Coordinate section-wide events, monthly newsletter to members, organize the nomination and election of new section officers, set agenda for executive committee and business meetings, serve on program committee for section meetings and selection committees for distinguished teaching award and distinguished service award
- Co-coordinator for Undergraduate Student Poster Session, Joint Mathematics Meetings, Feb. 2016-present, [2021 – Virtual; 2020 – Denver, CO; 2019 – Baltimore, MD; 2018 – San Diego, CA; 2017 – Atlanta, GA]
  - Create abstract submission form, manage submissions, coordinate travel grant funding, communicate with presenters, contribute to abstract book, run orientation session for judges, collect and distribute completed judging forms to student presenters, compile list of ‘outstanding’ posters
  - 2021: Reimagined poster session to run in a virtual setting. Additional responsibilities include creation schedule of presentations, extensive communication with students on new format and expectations, assignment of judges and moderators to specific sessions, drafting of information packet and individualized judging forms, technical troubleshooting prior to and on day of event.
  - Redesign of judging forms (2018)
  - Coordinate with PME representatives on transition of event in 2022.
- Co-coordinator for MAA Undergraduate Student Paper Session, Mathfest, Jan 2017 – present [2021 – Virtual; 2020 – Cancelled; 2019 – Cincinnati, OH; 2018 – Denver CO; 2017 – Chicago, IL]
  - Create abstract submission form, manage submissions, communicate with presenters, generate schedule of talks, contribute to abstract book, distribute judging forms, compile list of ‘outstanding’ papers
- Chair, Program Committee – MAA NES Spring Section Meeting, June 5, 2021 (Virtual)
  - Created a general outline of conference, invited and communicated with speakers, worked with webmasters to develop and continually update the meeting website, created abstract book, set registration costs, coordinated with all session organizers, identified moderators for sessions, general logistics on day of meeting.
- Chair, Program Committee – MAA NES Fall Section Meeting, Nov 20-21, 2020 (Virtual)
  - See items listed above
  - Also, coordinated with MAA national on logistics (e.g. Zoom),
- Co-coordinator for MAA Undergraduate Student Poster Session \*new session at Mathfest 2020\*

- Submit proposal for session, create abstract submission form, manage submissions, communicate with presenters.
- MathFest 2020 cancelled due to pandemic after abstract submission began
- Panelist at MAA workshop on Planning Virtual Section Meetings, Jan 21, 2021
- Program Committee – MAA NES Spring Section Meeting, May 29-30, 2020 [cancelled]
  - Plan overall program, incl. theme, speakers, sessions, panels, exhibitors, registration, meals, etc.
- Selection Committee for 2020 MAA Northeast Section Distinguished Teaching Award
- Program Committee – MAA NES Fall Section Meeting, Nov 22-23, 2019 (Babson College)
  - Plan overall program, incl. theme, speakers, sessions, panels, exhibitors, registration, meals, etc.
  - Invite and communicate with speakers and panelists for Graduate School and Alumni panels.
  - Moderator for Graduate School panel; Introduce Saturday morning speaker
  - Score papers for Collegiate Mathematics Competition
- Member of the Committee on Undergraduate Students (CUS), a national MAA committee, Jan 2017-present
- Vice-Chair, Northeast Section of the MAA, Nov 2018-Nov 2019
  - Selection committee for the Section’s Distinguished Teaching award
  - Position transitions into Chair of Northeast Section Nov 2019, then Past Chair in Nov 2021
- Co-coordinator Collegiate Mathematics Competition (Northeast Section of MAA) Sept 2015 – Nov 2018, [Southern New Hampshire University, Nov 16, 2018; Sacred Heart University, Nov. 17, 2017; Trinity College Nov. 18, 2016; Gordon College, Nov 20, 2015]
- Judge at Babson-Olin-Wellesley DataFest, April 9, 2018
- Moderator for MAA general contributed paper session on “Probability and Statistics”, Joint Mathematics Meetings, Seattle, WA, Jan. 9, 2016
- Moderator for AMS general contributed paper session on “Statistics”, Joint Mathematics Meetings, San Antonio, TX, Jan. 10, 2015
- Contributor to Northeast Section of MAA Collegiate Mathematics Competition 2014, Southern Connecticut State University, Nov 21, 2014.
- Moderator for AMS general contributed paper session on ‘Statistical Modeling, Big Data, and Computing’, Joint Mathematics Meeting, Baltimore MD, Jan. 18, 2014
- Judge for Undergraduate Student Poster Session, Joint Mathematics Meeting – 2013: San Diego, CA; 2014: Baltimore, MD; 2015: San Antonio, TX; 2016: Seattle, WA
- Moderator for MAA general contributed paper session on ‘Research in Applied Mathematics’, Joint Mathematics Meeting, San Diego, CA, Jan. 12, 2013
- Organized panel on ‘Effective Group Projects’ at MathFest, Lexington, KY, Aug. 3, 2011
- Judge at Undergraduate Student Paper Session, MathFest, Lexington, KY, Aug. 4, 2011

#### College / University

- Common Area Requirements Steering Committee, Oct 2018 – May 2021
  - Committee was charged with leading a review of the existing system of common area requirements and proposing potential alternatives to the current model.
  - Activities related to modeling include: research models used by comparison schools to identify interesting/unique features, create and record presentations on Competencies, Breadth, and Responsible Citizenship to distribute across campus, meet with departments to gather feedback on three initial model proposals, host listening sessions and follow-up meetings with different groups on campus, discuss data related to how students satisfy the current set of Common Requirements, merge initial models into a final proposal based on campus feedback, survey departments/programs to determine which goals their programs will meet, create mock transcripts for various programs across campus (e.g. Math + pre-health) to identify the number of required courses
  - Activities related to learning goals include: gathering information from constituencies across campus, developing an aspirational list of student learning outcomes, meeting with departments to gather feedback on learning outcomes, revising and refining learning goals, researching potential alternative models, planning and then presenting activity at August workshop, designing survey of faculty, staff, and students, data analysis and preparation of report summarizing survey data, creating a final set of learning outcomes and rationale to present to the Faculty Assembly
- Sponsored Research Advisory Board, Jan 2020- present
  - Discussed how Sponsored Research could better serve the College community

- Health Professions Consultant, Sept 2019-present
  - Serve as a resource to advisors regarding health professions advising
- Organized and ran demonstration on statistics for 3<sup>rd</sup> annual Women in Science Day, Apr 13, 2019
  - Represented Mathematics and Statistics programs at browsing session
- Gateways advising, June 2018
- Organized and wrote presentation on statistics for 2<sup>nd</sup> annual Women in Science Day, Mar 24, 2018
- Holy Cross Summer Research Program selection committee, March 2016, March 2018
- Faculty Compensation Committee, July 2015 – June 2017
- Assisted with organization of dinner for first year faculty members, Nov. 2014
- NSF CAREER Grant Lunch Discussion panelist, June 6, 2014
- Collected and contributed student papers to Expert Committee on Writing Assessment and Pedagogy for development of writing rubric to assess senior writing, December 2013, May 2014
- Consulted with SPUD community organizer on survey design and data collection techniques, March 2014
- Faculty panelist for CTE/Ed Tech workshop ‘Why Use Bb Collaborate Web Conferencing? To Enhance Teaching and Scholarship Productivity’, February 2013
- Graduate Student Award for Excellence in Teaching committee, Oct. 2012-June 2013.
- Moderator for Duquesne University Academic Challenge, March 2011, 2012
- Fresh Eyes Committee – Toured Living Learning Centers and made recommendations for improvements, Sept 2010 – Jan 2011

#### Department

- Actuarial advisor (course selection, actuarial exam preparation, etc.) - ongoing.
  - Advise students on courses, exam preparation
  - Coordinate with Center for Career Development regarding actuarial internships and entry-level positions. Initial meeting Sept 2015 to discuss actuarial profession / preparation.
  - Organize student participation in Hanover Actuarial Career Summit [Sept 2020, 2019, 2018, 2017, 2016, 2015, 2014]
    - Submitted courses for ‘validation of educational experience’ (VEE) approval to the Society of Actuaries, updated documentation of existing courses, April 2020, Nov 2019, April 2019, April 2018, April 2017
    - Hosted representatives from John Hancock/Manulife, Sept 2019 [cancelled], 2018, 2017, 2016
    - Attended events with students hosted by Hanover Insurance [Sept 2016, Sept 2014] and Travelers Insurance [Sept 2016]
    - Hosted representative from St. John’s University, Master’s program in actuarial science, Nov 2016
    - Attended Campus Engagement Lunch prior to Career Fair, Sept 2017
    - Faculty host for Actuarial Science Alumni Career Panel, Nov 10, 2014
- Search Committee for Visiting Assistant Professor, Spring-Summer 2020
- Departmental representative at 2YO Academic Extravaganza, Sept 4, 2019
- Internship/Graduate School Advisor for Statistics, Sept 2019-June 2020
- Study Abroad Liaison for Statistics, Sept 2017-June 2019
- Representative at Open House, Nov 2018
- Search Committee, tenure-track position in mathematics, Sept 2017-March 2018
- With Ed Soares and Shannon Stock, led discussion on incorporating statistics courses into the mathematics curriculum. Submitted proposal for a minor in statistics to the Committee on the Curriculum March 2017, approved
- Hiring Committee, Visiting Assistant Professor in Mathematics, April 2016
- Department representative to ‘Battle of the Departments’, April 21, 2015
- Spoke in Faculty/Student seminar on Hidden Markov Models, Jul 16, 2014
- Reviewed, updated, and increased statistics offerings in library, February 2014
- Interviewed candidates for Assistant Professor position at Joint Mathematics Meeting, Jan 2011, Jan 2013
- Representative at Graduate School Fair, Joint Mathematics Meetings – 2012: Boston, MA; 2013: San Diego, CA.
- Representative at University Open House, September 2012
- Statistics Textbook Selection Committee, Spring 2011
- Search Committee – Statistics Instructor, Spring 2011

**Community**

- CBL component to Math 376: Mathematical Statistics (Spring 2017)
  - Designed and implemented a survey of Partner Agencies for the Worcester County Food Bank and Community Harvest Project, then performed data analysis.
  - Created summary documents and delivered to Food Bank at end of semester.

**Professional Memberships and Honor Societies (Induction Year):**

- Mathematical Association of America (MAA)
- American Statistical Association (ASA)
- Pi Mu Epsilon – Mathematical Honor Society (2003)