

Updated: September 2018

# Matt Higham

Personal Website: <https://xtxinverse.netlify.com/>

Phone: 330-261-8010, E-mail: [highamm@oregonstate.edu](mailto:highamm@oregonstate.edu)

## EDUCATION

**Doctor of Philosophy**, Oregon State University

*Statistics*, Expected June 2019

GPA: 4.00

Dissertation Advisors: Dr. Lisa Madsen & Dr. Jay Ver Hoef

Committee Members: Dr. Julia Jones, Dr. Katie McLaughlin, & Dr. Debashis Mondal

**Master of Science**, Oregon State University

*Statistics*, June 2016

**Bachelor of Science**, Miami University (OH)

Academic Honors with Distinction

*Botany*, May 2014

GPA: 3.98

*Environmental Science Co-major*, May 2014

*Statistics*, May 2014

*Zoology*, May 2014

**Graduate Certificate in College and University Teaching**

Oregon State University, August 2018

18 credits of graduate-level coursework [Link to Learning Outcomes](#)

## TEACHING EXPERIENCE

**Lead Instructor for Introductory**

June 2016 - July 2018, Interspersed

**Statistics Courses**

Oregon State University

- ST 201: Principles of Statistics I (Spring 2018), ST 351: Introduction to Statistical Methods I (Summer 2016 OSU Cascades, Summer 2018), and ST 352: Introduction to Statistical Methods II (Summer 2016).
- Presented statistics material in the context of appropriate software (R or TI-84).
- Utilized active learning strategies in both small and large class sizes, ranging from 15 students to over 100 students.
- Managed Teaching Assistants for labs and recitations.

**Lead Instructor for Introductory**

Sep. 2017 - Mar. 2018

**Ecampus Statistics Course**

Oregon State University

- ST 202D: Principles of Statistics II Ecampus (Fall 2017, Winter 2018).
- Supplemented course material with videos and screencasts.
- Motivated distance students through engaging online interactions.
- Managed Teaching Assistants for online grading of assignments.

**Graduate Teaching Assistant**

Sep. 2014 - Sep. 2016

Oregon State University

- ST 511: Methods of Data Analysis, ST 552: Statistical Methods, ST 351, ST 352.
- Facilitated laboratories using R for upper-level undergraduate students and graduate students from outside departments (ST 511).
- Instructed a laboratory using R for first-year statistics graduate students (ST 552).

- Led laboratories using Minitab for introductory statistics students (ST 351, 352).
- Supervising Instructors:
  - Dr. Lisa Madsen (ST 511).
  - Dr. Charlotte Wickham (ST 552).
  - Juli Moore and Jeff Kollath (ST 351, 352).

## COURSE DEVELOPMENT

### Graduate Data Analytics Oregon State University

Apr. 2017 - June 2017

- Created laboratory materials for the graduate-level online ST 518D (Data Analytics II) course.

### Introductory Statistics Oregon State University

June 2016 - Aug. 2016

- Revised the on campus ST 351 lab materials and assignments from Minitab to R (lead role).
- Collaborated with ST 351 and ST 352 instructors Jeff Kollath and Juliann Moore at OSU to transition all ST 351 and ST 352 lecture notes and online materials from Minitab to R (secondary role).

## RESEARCH

### Publications

- **Higham, M.**, Ver Hoef, J., Madsen, L., & Aderman, A. (2018). Adjusting a finite population block kriging estimator for imperfect detection. (In Prep: [Link to Current Draft](#)).
- **Higham, M.**, Hoven, B. M., Gorchov, D. L., & Knight, K. S. (2017). Patterns of coarse woody debris in hardwood forests across a chronosequence of ash mortality due to the emerald ash borer (*Agrilus planipennis*). *Natural Areas Journal*, 37(3), 406-411. [Link to Abstract](#).

### Grants

- United States Fish and Wildlife Grant Sep. 2016 - June 2017
  - Created a Finite Block Kriging with Imperfect Detection.
  - Award number F16AC01127. Amount: \$40,813.
  - Role: Graduate Research Assistant. Supervisors: Dr. Lisa Madsen & Dr. Jay Ver Hoef.
- Hughes Research Internship May 2013 - May 2014
  - Collected and subsequently analyzed data on coarse woody debris in forest research plots with ash mortality from the emerald ash borer.
  - Amount: \$4,500.
  - Role: Undergraduate Research Assistant. Supervisor: Dr. David Gorchov.

### Projects

- Master's Project: "Performance of a Local Variance Estimator from a GRTS (Generalized Random-Tessellation Stratified) Sample."
  - Evaluated bias and confidence interval coverage of the GRTS spatial sampling estimator under a variety of spatial surfaces.
  - Advisors: Dr. Lisa Madsen & Dr. Jay Ver Hoef.
  - Committee Members: Dr. Debashis Mondal & Dr. Charlotte Wickham.

- Consulting Projects
  - Collaborated with university graduate students, providing statistical advice on six PhD and Master's theses.
  - Fields of Study: Integrative Biology, Engineering, Crop Science, Wood Science.

#### **Presentations and Posters**

- **Higham, M.**, Ver Hoef, J., Madsen, L., & Aderman, A. (2018). Adjusting a finite population block kriging estimator for imperfect detection. Joint Statistical Meetings. Contributed Poster and Speed Presentation.
- **Higham, M.**, Howard, E. (2018). Exploring spatiotemporal patterns in forecast data. Joint Statistical Meetings. Contributed Poster and Speed Presentation. [Link to Github Project Site](#).
- **Higham, M.**, Ver Hoef, J., Madsen, L., & Aderman, A. (2017). Incorporating imperfect detection into the moose Geospatial Population Estimator (GSPE). Alaska Fish and Wildlife Service. Invited Presentation.
- **Higham, M.**, Ver Hoef, J., Madsen, L., & Aderman, A. (2017). Adjusting a finite population block kriging estimator for imperfect detection. Western North American Region of the International Biometric Society. Contributed Presentation.

#### **WORKSHOPS AND PROFESSIONAL DEVELOP- MENT**

**Associate and Practitioner in CIRTL**  
Oregon State University

Sep. 2017 - Mar. 2018

- Center for the Integration of Research, Teaching, and Learning.
- Researched and applied evidence-based teaching strategies.
- Examined and integrated a “learning-through-diversity” philosophy to current teaching practices.

**Certificate in Teaching and Learning  
for Teaching Talks**  
Oregon State University

March 2018 - June 2018

- Addressed current issues in adult education through OSU's Center for Teaching and Learning.

**Prepare to Teach Workshop**  
National Science Foundation

July 2018

- NSF sponsored workshop for graduate students planning careers involving teaching statistics.

**Stat. Education Mentoring Program**  
American Statistical Association

August 2018 - Present

- Mentor: Dr. Nicole Dalzell, Wake Forest University.

#### **MENTORSHIP**

**Head Boys' Tennis Coach**  
Crescent Valley High School

Feb. 2016 - Present, Spring

- Motivated student athletes in aspects of tennis as well as sportsmanship and discipline.
- Organized matches, held daily practices, and participated in tournaments.

**Science Department Head Tutor**  
Miami University

Aug. 2013 - May 2014

- Supervised all Rinella Learning Center tutors in the science department.
- Improved tutor feedback to students through training sessions and through individual problem-solving.

**Statistics Tutor**  
Miami University

Sep. 2011 - May 2013

- Tutored approximately 10 students in Introductory Statistics courses each semester through the Rinella Learning Center.
- Strengthened student problem-solving skills through one-on-one meetings with each student about once per week.

**TECHNICAL  
SKILLS**

**Statistical Programs:** R, SAS, Matlab, Minitab.

**Presentation and Collaboration:** RMarkdown, knitr, shiny, L<sup>A</sup>T<sub>E</sub>X, Microsoft Office Suite, Git and Github.

**PROFESSIONAL  
SOCIETY  
MEMBERSHIP**

- |  |                     |
|--|---------------------|
| • American Statistical Association                   | Jan. 2017 - Present |
| • WNAR Branch of the International Biometric Society | Oct. 2016 - Present |
| • International Environmetrics Society               | Oct. 2016 - Present |
| • Data Science Association                           | Nov. 2016 - Present |

**UNIVERSITY  
SERVICE**

- **New Graduate Teaching Assistant Orientation Leader** Sep. 2018
  - Facilitated OSU policy, diversity and inclusion, and introduction to the learning management system Canvas sessions for new GTAs.
  - Developed materials for OSU's new GTA training and orientation with a team of 11 other graduate students.
- **Department Head Search Committee Member** Aug. - Oct. 2018
  - Served as the graduate student representative in the committee.
  - Collaborated in drafting interview questions for candidates and summarizing student and faculty feedback about the candidates for the Dean of Science.
- **Department of Fisheries and Wildlife Proposal Review** Nov. 2017
  - Assessed and offered improvements to a research design applying the Finite Population Block Kriging estimator with imperfect detection to brown bears.
- **OSU Student Statistics Organization Vice President** 2015 - 2016
  - Organized events designed to promote communication between Oregon State Statistics students and faculty and to encourage professional growth.
- **Datafest Workshop Leader and Consultant** 2016
  - Created and led a workshop on the R package ggplot2 for participants.
  - Served as a consultant to help with the Datafest participants statistical techniques and visualizations.
- **Review Committee for OSU Professors** 2016, 2017
  - Collaborated with two to three other OSU students to summarize and script student opinions on four OSU faculty up for promotion.

**AWARDS AND  
SCHOLARSHIP**

- **WNAR Distinguished Student Presentation Award** 2017
- **Seely Award**, OSU Dept. of Statistics 2015
  - High performance in first-year courses and on comprehensive exams.
  - Award determined through Statistics Department faculty vote.
- **Provosts Distinguished Graduate Scholarship** 2014 - 2015
  - OSU award to “foster enrollment of students of the highest quality.”
- **Scott Overton Scholarship** for Statistical Ecology 2014 - 2015
- **Comer-Reynolds Memorial Award** in Statistics 2013
- **Benjamin Harrison Scholarship** from Miami University 2010 - 2014
  - Covered full tuition expenses for four years of study at Miami University.