

# Timothy Joseph NeCamp

Erdős number: 5

## Education

2014-2019

**Ph.D. in Statistics - University of Michigan, Ann Arbor, Michigan**

Awarded August 2019

Advisor: Professor Edward Ionides and Professor Zhenke Wu

Dissertation Title: Design and Analysis of Sequential Randomized Trials with Applications to Mental Health and Online Education

GPA: 4.00

2011-2013

**Master of Education - University of Nevada Las Vegas, Las Vegas, Nevada**

Focus in Curriculum and Instruction

GPA: 4.00

2007-2011

**Bachelor of Science - Ohio State University, Columbus, Ohio**

with Honors in Arts and Science (*magna cum laude*)

Major: Mathematics; Minors: Statistics, Economics

GPA: 3.82

## Research Interests

- Developing analysis methodology to inform dynamic treatment regimes (adaptive interventions)
- Experimental designs for evaluating and refining dynamic treatment regimes
- Design and analysis of large-scale experiments involving intensive longitudinal data, with applications in mobile health and online education
- Reinforcement learning techniques for online intervention decision making

## Publications

### Peer Reviewed Journal Publications

**T. NeCamp**, A. Kilbourne, D. Almirall. (2017) Comparing cluster-level dynamic treatment regimens using sequential, multiple assignment, randomized trials: Regression estimation and sample size considerations. *Statistical Methods in Medical Research*. 26: 1572-1589.

Wolfe, A. D., **T. NeCamp**, S. Fassnacht, P. Blischak, and L. Kubatko. (2016) Population genetics of *Penstemon albomarginatus* (Plantaginaceae), a rare Mojave Desert species of conservation concern. *Conservation Genetics*. 17: 1245-1255.

Wolfe, A. D., A. McMullen-Sibul, V. J. Tepedino, L. Kubatko, **T. NeCamp**, and S. Fassnacht. (2014) Conservation genetics and breeding system of *Penstemon debilis* (Plantaginaceae), a rare beardtongue endemic to oil shale talus in western Colorado, USA. *Journal of Systematics and Evolution*, 52: 598–611.

### Peer Reviewed Conference Publications

**T. NeCamp**, J. Gardner, C. Brooks. (2019) Beyond A/B Testing: Sequential randomization for developing interventions in scaled digital learning environments. In Proceedings of *Learning Analytics & Knowledge Conference (LAK 19)*. ACM. 539-648.

### Non-Peer Reviewed

**T. NeCamp**, J. Gardner, C. Brooks. (2019) Sequential randomization to develop personalized and optimized interventions in massively open online courses: A case study. In Proceedings of *2019 Conference on Digital Experimentation (CODE) at MIT*.

E. Reynold, **T. NeCamp**. (2018) STATCOM: Revitalization of statistical community service at universities. *AMSTAT NEWS*. 490: 22-23

**T. NeCamp**, E. Morris, E. Reynolds, S. Salerno. (2018) Data for Good In Your Neighborhood: A case study on how data can benefit your local community. *2018 Bloomberg Data For Good Exchange (D4GX)*.

**T. NeCamp**, P. Sattigeri, D. Wei, E. Ray, Y. Drissi, A. Poddar, D. Mahajan, S. Bowden, B.A. Han, A. Mojsilovic, K.R. Varshney. (2017) Cognitive Disease Hunter: Developing automated pathogen feature extraction from scientific literature. *2017 Data Science for Social Good Conference (DSSG)*.

### Submitted

**T. NeCamp**, Z. Wu, E. Ionides, A. Tewari, Y. Fang, M. Walton, E. Frank, S. Sen. (2019+) Assessing real-time moderation for developing adaptive mobile health interventions for medical interns: A micro-randomized trial. *Journal of Medical Internet Research*. Revised and resubmitted.

## Teaching Experience

### University of Michigan, Ann Arbor, Michigan

**Fall 2018, Fall 2017**      **Lead Instructor-Introductory Statistics for Mathematics Educators**

Led instruction, designed curriculum, created course content, graded, and held office hours.

**Jan 2018-Dec 2018**      **Course Developer- Coursera: Statistics with Python Specialization**

Designed curriculum and created instructional videos, assignments, discussion questions, and resources.

**Fall 2017**

**Graduate Student Instructor-Introduction to Statistics and Data Analysis**

Led a lab section, created lab materials, graded homework and exams, and held office hours.

**Aug 2014-Aug 2017**

**Statistics Tutor**

### Clark County School District, Las Vegas, Nevada

**Aug 2011-Jun 2014**      **Middle School Mathematics Teacher**

Taught 7th grade Math, Pre-Algebra, and Algebra at Monaco Middle School, a Title 1 school.

**Jun 2011-Jun 2013**

**Teach for America Corps Member**

### Ohio State University, Columbus, Ohio

**Jan 2009-Apr 2010**      **Mathematics Tutor- Office of Minority Affairs**

**Sep 2009-Dec 2009**

**Student Instructional Assistant-Precalculus**

## Advising

Jessica Liu, University of Michigan Statistics PhD student, Fall 2018-Winter 2019  
“Mood Prediction Using Data from Smartphones and Wearables”

Mengjie Shi, University of Michigan Statistics Undergraduate (thesis) and Master’s, Fall 2017-Winter 2019  
“Machine Learning Methods for Mood Prediction Using Data from Smartphones and Wearables”  
Presented in undergraduate thesis

Julia Lynn, University of Michigan Data Science Undergraduate, Fall 2016-Winter 2017  
“Method for Constructing a Confidence Interval Based on Estimating the Profile Likelihood”  
Presented at 2017 Michigan Student Symposium for Interdisciplinary Statistical Sciences. Poster.

Kelly Hall, University of Michigan Statistics Undergraduate, Winter 2017

“Construction & Evaluation of Contextually-Tailored Activity Suggestions: Evidence from the HeartSteps”  
Presented at 2017 Michigan Student Symposium for Interdisciplinary Statistical Sciences. Poster.

## **Awards and Honors**

**Outstanding Graduate Student Instructor**, University of Michigan, April 2019

University-wide award recognizing outstanding teaching given to 1% of graduate instructors

**Professional Organization of the Year-STATCOM**, University of Michigan, April 2018

University-wide award for a graduate/professional organization that shows significant success and development in following their mission and goals. Awarded while I was president of STATCOM

**Best Student Flash Talk, Michigan Symposium for Interdisciplinary Statistical Sciences**, March 2018

**Highest Low score (Hi-lo) instructor award**, University of Michigan Department of Statistics, Fall 2017

Award given to one of 30 lab instructors with highest low student final exam score for Introduction to Statistics course

**Outstanding First Year PhD Student**, University of Michigan Department of Statistics, Spring 2015

Award for first-year statistics PhD students who performed best in courses and qualifying exam

**Sue Lehmann Award nomination for teaching excellence**, Teach for America, April 2013

**Office of Minority Affairs Scholarship recipient**, Ohio State University, September 2007-June 2011

**Eagle Scout**, Boy Scouts of America, December 2007

## **Grants and Fellowships**

Engaged Pedagogy Initiative Fellowship, University of Michigan, January 2018-April 2018

NSF Graduate Research Fellowship, National Science Foundation, June 2016-May 2019

Rackham Merit Fellowship, University of Michigan, Fall 2014

## **Consulting Experience**

“Determining the Effects of Caseload Size on Clinician Efficiency.”

The Children’s Center of Detroit. Project leader, January 2018-January 2019

“Optimizing Scheduling for Behavioral Therapists.”

Catholic Social Services of Ann Arbor. Project leader, September 2017-December 2017

“Improving Quality of Life for Washtenaw County Senior Citizens.”

Ann Arbor Area Community Foundation (AAACF). Project leader and analyst, January 2016-April 2017

“Understanding Food Access and Family Nutrition in Bolivia.”

University of Michigan Taubman College of Architecture. Project leader and analyst, Nov 2016-May 2017

“Determining the Impact of Psychosocial Risk in Kidney Transplant Candidates.”

University of Michigan Health Services. Analyst, October 2016-April 2017

## **Service**

### **Volunteer**

Statistics in the Community-STATCOM president, University of Michigan, September 2017-January 2019

STATCOM member and project leader, University of Michigan, September 2016-January 2019

R workshop host for School of Social Work, University of Michigan, December 2017 and December 2018

Mentor2Youth STEM workshop host, Ypsilanti, Michigan, January 2017

Rackham Graduate School Orientation volunteer, University of Michigan, September 2016

Ann Arbor SLATE youth mentor, Ypsilanti, Michigan, September 2015-June 2016

Rackham Volunteer Corps member, University of Michigan, January 2015-December 2015

First Year PhD Student Mentor, Department of Statistics, University of Michigan, August 2015-April 2018

Big Brothers Big Sisters mentoring program participant, Ohio State, January 2009-June 2011

### **Organizing**

Data for Public Good Symposium organizer, University of Michigan, April 2018, February 2019

NSF Graduate Research Fellowship Info Session host, University of Michigan, Sept 2016, 2017, 2018  
Student coordinator for Graduate Student Statistics Seminar, University of Michigan, Jan 2016-Dec 2016  
Student coordinator for Pushing Mobile Interventions Forward, University of Michigan, Jan 2016-Jan 2017

## **Work Experience**

Sept 2019-Present      Freelance Statistical Consultant  
May 2017-Aug 2017      IBM Research, Data Science for Social Good Intern, Yorktown Heights, New York

## **Trainings**

Workshop on Understanding and Combating Microaggressions, March 2019  
Mentoring Undergraduate and Graduate Students: University of Michigan, January 2019  
Developing Your Teaching Philosophy: University of Michigan, January 2019  
Inquiry Based Learning Workshop: University of Michigan, August 2017-December 2017  
Entering, Engaging, and Exiting Communities: University of Michigan, November 2017  
Institute for Social Change, University of Michigan, August 2015

## **Extracurricular Experience**

Statistical Education Professional Learning Community member, Michigan, Sept 2018-June 2019  
Monaco Middle School Mathematics Department Chair, Las Vegas, Nevada, August 2013-June 2014  
Monaco Middle School Math Counts program instructor, Las Vegas, Nevada, August 2013-June 2014  
Monaco Middle School soccer coach, Las Vegas, Nevada, February 2013-June 2014  
Monaco Middle School English Language Learner tutor, Las Vegas, Nevada, August 2012-January 2013  
Ohio State LeaderShape Institute participant, Ohio State University, September 2009  
Ohio Union Activities Board member, Ohio State University, January 2009-June 2011

## **Presentations**

### **Talks and Posters**

Developing Year-long Mobile Health Interventions to Improve Health Outcomes among Medical Interns  
2019 Joint Statistical Meeting. Speed Talk and Poster  
2019 Michigan Student Symposium for Interdisciplinary Statistical Sciences. Speed Talk and Poster  
2019 Michigan Precision Health Symposium. Poster

Beyond A/B Testing: Sequential Randomization for Developing Interventions in Scaled Learning Environments  
2019 Learning Analytics and Knowledge Conference. Talk  
2019 Academic Innovation at Michigan Analytics Workshop. Talk

Sequential Randomization to Develop Personalized and Optimized Interventions in Massively Open Online Courses  
2018 Conference on Digital Experimentation (CODE) at MIT. Talk

Predicting Mood Using Multivariate Mobile Sensor Data Streams for Medical Interns  
2018 Michigan Student Symposium for Interdisciplinary Statistical Sciences. Speed Talk and Poster\*  
**\*Winner of Best Speed Oral Presentation**  
2018 Joint Statistical Meeting. Poster  
2018 International Biometric Conference. Talk  
2018 Bayesian Frequentist Fiducial Conference. Poster  
2018 Thomas R. Ten Have Symposium on Statistics in Mental Health. Poster

STATCOM Project with The Children's Center  
2019 Michigan Data for Public Good Symposium. Poster  
2018 Michigan Institute for Data Science Annual Symposium. Poster  
2018 Michigan Student Symposium for Interdisciplinary Statistical Sciences. Poster

Data for Good in Your Neighborhood: A Case Study on How Data Can Benefit your Local Community

2018 Bloomberg Data for Good Exchange. Talk  
2018 Michigan Institute for Data Science Annual Symposium. Poster

#### Statistics in the Community (STATCOM)

2018 Midwest Big Data Hub. Webinar  
2018 Michigan Institute for Data Science Annual Symposium. Poster

#### Assessing Quality of Life of Older Adults in Washtenaw County

2018 Michigan Data for Public Good Symposium. Poster  
2018 Michigan Institute for Data Science Annual Symposium. Poster  
2018 Michigan Association for Evaluation Conference. Poster

#### Cognitive Disease Hunter: Developing Automated Pathogen Feature Extraction from Scientific Literature.

2017 Chicago Data Science for Social Good (DSSG) Conference. Talk\*  
**Received DSSG student travel award to attend conference**

#### HeartSteps: A Case Study in Trial Design and Evaluation of Mobile Health Interventions.

2016 Michigan Institute for Data Science Annual Symposium. Poster

#### Cluster-level Adaptive Interventions and SMARTs: Estimation and Sample Size

2016 International Biometric Conference. Talk  
2016 Joint Statistical Meeting. Poster  
2016 Thomas R. Ten Have Symposium on Statistics in Mental Health. Talk  
2016 Michigan Student Symposium for Interdisciplinary Statistical Sciences. Poster  
2016 Mobile Data 2 Knowledge Meeting (MD2K). Poster

#### Testing Speciation Via Habitat Fragmentation Using Coalescent-Based Divergence Time Estimation

2011 Ohio State Denman Undergraduate Research Forum. Poster\*  
**\*Won 3<sup>rd</sup> Place for Best Poster**

#### Conservation Genetics of *Penstemon albomarginatus*.

2011 Ohio State Denman Undergraduate Research Forum. Poster

#### Workshops

##### Developing mHealth Interventions to Improve Mood, Activity, and Sleep for Medical Interns

2019 Statistical Methods for Developing Personalized Mobile Health Interventions Workshop, Singapore

##### Diving in to Educational Experiments: Process, Evaluation, and Reasoning in Support of Learning

2019 Learning Analytics and Knowledge Conference, Tempe, AZ

##### Cluster-level Adaptive Interventions and Sequential, Multiple Assignment, Randomized Trials

2019 Institute of Education Sciences SMART workshop, Ann Arbor, MI

##### Interventions in Massively Open Online Courses-Case Study: Hypothesis Testing and Confidence Intervals

2019 Visual Exploration of Data- Coursera course, Ann Arbor, MI

##### Invite and Complicate, not Indoctrinate: Course Design for Social Change

2018 Michigan Engaged Pedagogy Initiative Symposium, Ann Arbor, MI

##### Adaptive Interventions and Sequential, Multiple Assignment, Randomized Trials (SMARTs)

2016 Training for Optimization of Behavioral and Biobehavioral Interventions, Bethesda, MD

##### Just In-Time Adaptive Interventions (JITAI) and Micro-randomized Trials

2016 Training for Optimization of Behavioral and Biobehavioral Interventions, Bethesda, MD