Michele S. Zemplenyi

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EDUCATION

Harvard University 8/2015-5/2020
Ph.D. in Biostatistics, expected May 2020 Cambridge, MA
- Dissertation Projects: High-Dimensional Regression Methods for Identifying Windows of Susceptibility to Environmental Exposures; Optimal Bayesian Experimental Design for Causal Network Inference
- Advisors: Dr. Brent Coull and Dr. Jeffrey Miller

A.M. in Biostatistics, May 2017

Harvard College 9/2009-5/2013
A.B. in Statistics and Secondary Field in Chemistry, May 2013 Cambridge, MA
- Summa cum laude, Phi Beta Kappa
- Thesis: "Design and Analysis of a Fractional Factorial Screening Experiment to Identify Small Molecule Inducers of Pancreatic β Cells"
- Thesis awarded Hoopes Prize

WORK AND RESEARCH EXPERIENCE

Biostatistics Department, Harvard University 2016 - Present
Research Assistant to Dr. Brent Coull and Dr. Jeffrey Miller Boston, MA
Develop high-dimensional regression techniques to analyze the effects of air pollution on human health. Research optimal Bayesian experimental design methods for discovery of gene networks.

New England Journal of Medicine 2017 - 2019
Statistical Consultant Boston, MA
Performed analyses to screen clinical trials at submission for possible violations of randomization.

Applied Predictive Technologies 2013 - 2015
Associate Product Manager Arlington, VA
Led engineering teams, created product requirements, designed software features, implemented new modeling tools.

Statistics Department, Harvard College 2012 - 2013
Research Assistant Cambridge, MA
Collaborated with Dept. of Stem Cell Biology to design & analyze experiments for type-I diabetes therapeutics.

Milliman Life & Financial Services 2012
Actuarial Analyst Intern Seattle, WA
Used proprietary financial modeling software to deliver valuations of company assets in the insurance industry.

VentiRx Pharmaceuticals 2010
Summer Intern and Research Assistant Seattle, WA
Determined genetic profiles of clinical samples in collaboration with University of Washington Tumor Vaccine Group.

LEADERSHIP EXPERIENCE

Biostatistics Student Consulting Center 2018 - Present
President Boston, MA
Manage a team of 25 consultants who handle 150 inquiries / year, lead consultant training meetings, secure funding, maintain systems for handling inquiries, recruit consultants.

Center for Climate, Health, and the Global Environment 2019-2020
Student Ambassador Boston, MA
Produced report on climate-related research and funding in my department, presented results and opportunities for increased climate education and training to the Center's leadership team.

Harvard Forward Campaign 2020
City Coordinator Boston, MA
Organized outreach to Harvard alumni to support nominees to the Harvard Board of Overseers on a platform of increased funding for climate research and divestment from fossil fuels.

PhD Student Committee 2018-2019
Co-Chair Boston, MA
Created and analyzed first doctoral student survey to assess research and teaching opportunities for improvement within the department. Organized first town halls with students and department leadership to address gaps in curriculum, funding, and advising.

HONORS AND AWARDS

2019 Djokovic Science and Innovation Fellow, Djokovic Foundation & Harvard Center on the Developing Child
2019 Statistical Learning and Data Science Poster Awarded Honorable Mention, Joint Statistical Meetings
2019 Symposium on Data Science & Statistics Student Travel Award, American Statistical Association
2018 Science Policy in Washington D.C. Travel Award, Harvard Graduate Student Science Policy Group
2018 Environmental Training Grant Fellow, National Institutes of Health
2017 Summer Institute in Statistical Genetics Scholarship, University of Washington Department of Biostatistics
2015 Statistical Genetics & Computational Biology Training Grant Fellow, National Institutes of Health
2013 Hoopes Prize for Outstanding Undergraduate Thesis, Harvard College
2013 Phi Beta Kappa, Harvard College
2012 Certificate of Distinction in Teaching, Derek Bok Center for Teaching and Learning, Harvard University
2012 John Harvard Scholar for Academic Achievement of High Distinction, Harvard College
2010 Detur Book Prize, Harvard College
2009 Presidential Scholar Finalist
2009 National Merit Scholar

PROFESSIONAL SERVICE

2019 Statistics content editor, Harvard edX course "The Health Effects of Climate Change"
2018-2019 President, Biostatistics Student Consulting Center
2019 Member, Graduate Environmental Action Team
2018-2019 Co-chair, Harvard Biostatistics PhD Student Commitee
2018-2019 Organizer & Teacher, StatStart High School Summer Program in Biostatistics
2017 Contributor, Harvard edX course "Introduction to Probability"
2015-2017 Organizer, Harvard Statistics & Biostatistics Annual Student Mixer
2015-2019 Member, American Statistical Association

PUBLICATIONS

1. Zurayk LF, Cheng KL, **Zemplenyi M**, Burke A, Dillon JK. Perceptions of Sexual Harassment in Oral and Maxillofacial Surgery Training and Practice, *Journal of Oral and Maxillofacial Surgery.* Published online August 29, 2019.

2. **Zemplenyi M**, Wei L. Quantifying the Treatment Effect of Drug-Eluting Stents Optimized for Biocompatibility vs Bare-Metal Stents With a Single Month of Dual Antiplatelet Therapy. *JAMA Cardiol.* Published online March 27, 2019 doi:10.1001/jamacardio.2019.0546

3. Zhong J, Karlsson O, Wang G, Li J, Guo Y, Lin X, **Zemplenyi M**, Sanchez-Guerra M, Trevisi L, Urch B, Speck M, Liang L, Coull BA, Koutrakis P, Silverman F, Gold DR, Wu T, Baccarelli AA. B vitamins attenuate the epigenetic effects of ambient fine particles in a pilot human intervention trial, *PNAS.* 114 (13) (2017) 3503-3508.

4. **Zemplenyi M.** Design and Analysis of a Fractional Factorial Screening Experiment to Identify Small Molecule Inducers of Pancreatic β Cells. Undergraduate Thesis. (2013) 1-124.

In Progress

1. **Zemplenyi M**, Meyer MJ, Cardenas A, France-Hivert M, Rifas-Shiman SL, Gibson H, Kloog I, Schwartz J, Oken E, DeMeo DL, Gold DR, Coull BA. Function-on-Function Regression for the Identification of Epigenetic Regions Exhibiting Windows of Susceptibility to Environmental Exposures. [Under Review at *Annals of Applied Statistics*; pre-print: https://arxiv.org/abs/1912.07359.].
2. **Zemplenyi M**, Miller JW. Optimal Bayesian Experimental Design for Causal Network Inference. [In Progress].
3. **Zemplenyi M**, Coull BA. Sparse Canonical Correlation Analysis with Applications in Environmental Epidemiology. [In Progress].
4. Margeta MA, **Zemplenyi M**, Ratanawongphaibul K, Tsikata E, Chen T. Risk Factors for Optic Disc Hemorrhage in Glaucoma Patients. [In Progress].
5. Ratanawongphaibul K, Tsikata E, **Zemplenyi M**, Lee H, Margeta MA, Ondeck CL, Kim J, de Boer JF, Chen T. Longitudinal Detection of Three-Dimensional Neuroretinal Rim Parameter Change in Glaucoma Using Optical Coherence Tomography Volume Scans. [In Progress].
6. Iokheles A, Bellinger D, Coull BA, Weisskopf M, **Zemplenyi M**, Korrick SA. Prenatal exposure to chemical mixtures and cognitive inhibition among adolescents in the New Bedford Cohort. [In Progress].

EDUCATIONAL CONTRIBUTIONS

Teaching

2019	Teaching Assistant, BST 254: Design and Monitoring of Adaptive Clinical Trials
2018-2019	Organizer & Teacher, StatStart High School Summer Program in Biostatistics
2018	Teaching Assistant, BST 227: Statistical Genetics, Harvard University
2018	Teaching Assistant, BST 312: Statistical Consulting, Harvard University
2018	Teaching Assistant, BST 214: Principles of Clinical Trials, Harvard University
2016-2017	Teaching Assistant, BST 222: Basics of Statistical Inference, Harvard University
2017	Statistics Tutor, Harvard University
2012	Teaching Assistant, EM16: Real-Life Statistics, Harvard College
2010-2012	Course Assistant, STAT 104: Introduction to Statistics, Harvard College

Mentorship

2016	Marcia Higgins, *Pipelines into Biostatistics Summer Program, Harvard University*

PRESENTATIONS

Oral Presentations

07/2019	Discovery of gene regulatory networks using adaptively selected gene perturbation experiments. *Joint Statistical Meetings.*
03/2019	Discovery of gene regulatory networks using adaptively selected gene perturbation experiments. *ENAR International Biometric Society Spring Meeting.*
09/2018	The Biostatistics Student Consulting Center: A quick consultation about who we are and what we do. *Lightning Talks, Harvard University.*
08/2018	Identifying epigenetic regions exhibiting critical windows of susceptibility to air pollution. *Joint Statistical Meetings.*
03/2018	Sample Size Calculations for Clinical Trial Design. *BST 214 Clinical Trials, Harvard University.*
03/2018	Identifying epigenetic regions exhibiting critical windows of susceptibility to air pollution. *ENAR International Biometric Society Spring Meeting.*
10/2016	Real Talk with Dave. *Invited Speaker, A Celebration of David Harrington's Career.*
05/2016	Identifying epigenetic regions exhibiting critical windows of susceptibility to air pollution in cord blood methylation outcomes. *Project Viva Co-Investigator Meeting.*

Poster Presentations

06/2019	Discovery of gene regulatory networks using adaptively selected gene perturbation experiments. *Symposium on Data Science & Statistics.*
04/2019	Discovery of gene regulatory networks using adaptively selected gene perturbation experiments. *Dana Farber Cancer Institute Marvin Zelen Memorial Symposium.*
03/2019	Discovery of gene regulatory networks using adaptively selected gene perturbation experiments. *Women in Statistics & Data Science.*

SKILLS & INTERESTS

Statistical Software	R, Matlab; Experience in: Python
Other Software	Linux computing, LaTeX, JIRA, Confluence, Microsoft Office
Interests	Tennis, soccer, piano, cello, guitar, exploring national parks

REFERENCES

Brent Coull, Professor, Associate Chair
Department of Biostatistics
Harvard T.H. Chan School of Public Health
bcoull@hsph.harvard.edu, (617) 432-2376

Mark D'Agostino, (Former) Senior Vice President of Product Management
Applied Predictive Technologies
markdagostino@gmail.com, (703) 304-4238

Mark P. Smith, Program Director
Center for Climate, Health, and the Global Environment (C-CHANGE)
Harvard T. H. Chan School of Public Health
mpsmith@hsph.harvard.edu, (617) 384-9850