TOM LOGAN

Industrial and Operations Engineering, University of Michigan, Ann Arbor, USA

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EDUCATION

University of Michigan, Ann Arbor, USA

> PhD in Industrial and Operations Engineering (expected) — In progress
> *Advisor*: S. Guikema

Johns Hopkins University, Baltimore, USA

> Master of Science in Geography and Environmental Engineering — 2015

University of Canterbury, New Zealand

> Bachelor of Science in Mathematics — 2014
> Bachelor of Engineering in Natural Resources Engineering with First Class Honours — 2013

RESEARCH INTERESTS

Methodological

> Risk analysis, statistical modeling, agent-based and complex-system modeling, data analytics, resilience assessment

Application areas

> Climate change adaptation, urban planning, civil systems engineering, couple natural-human systems

JOURNAL PUBLICATIONS

Aldarondo, F., Logan, T., Guikema, S. "Assessing Influencing Factors for Evacuation Behavior Under Repeated Hurricanes Using Travel Time Data." *Risk Analysis* — *under review*

Marasco, D., Murray-Tuite, P., Guikema, S., Logan, T. "Time to leave: An analysis of travel times during the approach and landfall of Hurricane Irma." *Natural Hazards* — *under review*

White, A., Guikema, S., Logan, T.M., "Persistent Patterns of Discriminatory Housing Policy and Inequity: A Spatial Analysis." Intended for *PLOS One* — *under review*

Bordley, R., Keisler, J., Logan, T. "Managing projects with uncertain deadlines." *European Journal of Operations Research* — 2018

Logan, T., Guikema, S., Bricker, J. "Hard-adaptive measures can increase vulnerability to storm surge and tsunami hazards over time." *Nature Sustainability* — 2018

Logan, T., Williams, T., Nisbet, A., Liberman, K., Zuo, C. T., Guikema, S. D. "Evaluating urban accessibility: Leveraging open-source data and analytics to overcome previous limitations." *Environment and Planning B: Urban Analytics and City Science.* — 2017

Logan, T., McLeod, S., Guikema, S. "Predictive models in horticulture: A case study with Royal Gala apples." *Scientia Horticulturae*, 209, 201-213 — 2016

NON-PEER-REVIEWED PUBLICATIONS

Logan, T. M., and Arnott, J. "You've got the power." *Nature* — 2017

INDUSTRY EXPERIENCE

One Concern, *Resilience Data Scientist,* Palo Alto, CA, USA — 2018

> Based on my research, I developed the resilience product for use by cities.

First Quartile Consulting, *Data Consultant*, USA — 2016

> Predictive modelling and data compilation.

Beca Infrastructure Ltd., *Engineering Technician*, Christchurch, NZ — 2012

> Water team: technical drawing management, winery wastewater regulation, other projects

Fulton Hogan Christchurch Southern Motorway Project Team, *Student Engineer*, NZ — 2011

> Labouring, surveying, quality assurance, and other jobs as required.

Abley Transportation Consultants, *Technical Assistant*, Christchurch, NZ — 2011

> I wrote Python code to process NZ transport survey data and conducted traffic surveys.

Student Bookshelf Ltd., *Director*, NZ — 2011 - 2013

> Co-founder of the online textbook store. Jointly responsible for inventory management, accounting, deliveries.

TEACHING EXPERIENCE

Lecturer

IOE 460: Decision Analysis, University of Michigan	2017
IOE 460: Decision Analysis (Substitute), University of Michigan	2015
570.210: Computational, Mathematical Modelling (Guest), Johns Hopkins University	2015
ENCN304: Deterministic Mathematical Methods (Guest), University of Canterbury	2014

Graduate Student Instructor

IOE 316: Intro. to Markov Processes, University of Michigan	2018
IOE 460: Decision Analysis, University of Michigan	2016

Undergraduate Student Instructor

ENCN304: Deterministic Mathematical Methods (Coordinator), University of Canterbury	2014
ENCN305: Stoch. Modelling and Programming, University of Canterbury	2014
EMTH171: Math Modelling and Computation, University of Canterbury	2013
EMTH210: Engineering Mathematics 2, University of Canterbury	2011-2014

HONOURS AND AWARDS

J X Kasperson Student Paper Award, American Association of Geographers annual meeting	2019
Rackham Predoctoral Fellowship, University of Michigan	2018
Honourable mention, Industrial & Operations Engineering Bonder Fellowship, University of Michigan	2017
Conference Travel Grant, Rackham Graduate School, University of Michigan	2017
Professional Development Grant, Rackham Graduate School, University of Michigan	2017
Poster prize: 1st Industrial & Operations Engineering. Michigan Student Symposium for Interdisciplinary Statistical Sciences.	2016
Poster prize: 4th Civil & Environmental Engineering. Michigan Engineering Graduate Symposium.	2016
Gordon Croft Fellowship from JHU Environment, Energy, Sustainability, Health Institute	2014
Dean Robert H. Roy Fellowship for graduate study at Johns Hopkins University	2014
Fulbright New Zealand Science and Innovation Graduate Award	2013
John R Templin Trust Postgraduate Scholarship	2013
Allan Wilson Centre Research Scholarship	2013
Environment Canterbury Prize in Natural Resources Engineering	2012
Tonkin and Taylor Prize for Hydrology and Hydraulic Engineering	2012
First Prize in Sophomore Civil & Natural Resource Engineers' Communication Portfolio	2011
University of Canterbury's Mathematics Research Scholarship	2010
University of Canterbury's Emerging Leaders' Scholarship	2010

UNIVERSITY SERVICE

Industrial and Operations Engineering Department, *PhD mentor program co-coordinator*	2017 -
Michigan University-wide Sustainability and Environment (MUSE) Workshop, Rackham Interdisciplinary Workshop, University of Michigan, *Co-convenor*	2017 –
Michigan University-wide Sustainability and Environment (MUSE) Conference, *Organising Committee, Logistics & Webmaster*	2017 -
Graduate student outdoor club (aka. ARRO), University of Michigan, *Founder and co-president*	2017 -
Institute for Operations Research and Management Science, Student Chapter at the University of Michigan, *Secretary*	2017
Michigan Student Symposium for Interdisciplinary Statistical Sciences, *Organising committee*	2016 -2017

Epsilon Eta, Professional Environmental Fraternity, University of Michigan, *Graduate advisor*   2015 -2017

PROFESSIONAL SERVICE
Reviewer, *Journal of Risk Analysis*   2016 - present
Reviewer, *Journal of Infrastructure Systems*   2016 - present
Project mentor, *Seattle City for All hackathon*, Seattle   2017

OTHER CERTIFICATIONS AND TRAINING
Santa Fe Institute, Complex Systems Summer School   2017
New England Complex Systems Institute, Winter School   2015

SKILLS
Programming
Experienced: Python • R
Familiar: Bash • SQL • HTML • Git • Docker • PostGreSQL
Tools/Applications
MATLAB • Adobe CS • MS Office • ArcGIS

AFFILIATIONS
Society for Risk Analysis (SRA)   2015 –
Foundations of Risk Analysis Specialty Group
Engineering and Infrastructure Specialty Group
Chair, Students and Young Professionals (2018 -)

Institute for Operations Research and Management Sciences (INFORMS)   2015 –
Secretary, Student Chapter at the University of Michigan (2017)

American Statistical Association (ASA)   2016 –2017

American Society of Civil Engineers (ASCE)   2015 – 2017

Generation Zero, New Zealand   2014
Transportation Team Leader, Christchurch

Engineers Without Borders New Zealand (EWBNZ)   2012 – 2017
IT assistant (2012 – 2017)
Newsletter Editor (2013 – 2015)
President Canterbury Students' Chapter (2013)

CONFERENCE PRESENTATIONS
Logan, T. M., Bricker, J., and Guikema, S. "The role of behavior in undermining the effectiveness of adaptive measures in reducing long-term vulnerability to natural hazards." *Intergovernmental Panel on Climate Change (IPCC) Cities Conference*, Edmonton, Canada   2018

Logan, T. M., Bricker, J., and Guikema, S. "The role of behavior in undermining the effectiveness of adaptive measures in reducing long-term vulnerability to natural hazards." *Society of Risk Analysis Annual Meeting*, Arlington, VA   2017

Logan, T. M., Bricker, J., and Guikema, S. "The role of behavior in undermining the effectiveness of adaptive measures in reducing long-term vulnerability to natural hazards." *Research Symposium 2017: Urban Environment. Environmental Science and Policy Program.* Michigan State University.   2017

Logan, T. M., Bricker, J., and Guikema, S. "The role of behavior in undermining the effectiveness of adaptive measures in reducing long-term vulnerability to natural hazards." *INFORMS Annual Conference*, Houston.   2017

Williams, T. G., Logan, T. M., Liberman, K., Zuo, C., and Guikema, S. "How accessible are our cities? A cross-sectional analysis of access to green space." *INFORMS Annual Conference*, Houston.   2017

Logan, T. M. and Guikema, S. D. (2017). "Urban development alongside ¿man-made? disasters." *Michigan University-Wide Sustainability and Environment (MUSE) Conference.*   2017

Logan, T. M., Williams, T. G.*, Nisbet, A. J., Liberman, K. D., Zuo, C. T., and Guikema, S. D. (2017). "Assessing parcel-resolution multi-modal accessibility to core services." *Michigan University-Wide Sustainability and Environment (MUSE) Conference.*	2017
Logan, T. M., Guikema, S., O'Meara, K., Zaitchik, B.F., Liberman, K., Zuo, C., and Nichols, R. "Turning up the heat on urban temperature data." *Society of Risk Analysis Annual Meeting*, San Diego.	2016
Logan, T. M., Bricker, J., and Guikema, S. "Tsunamis, seawalls, and memory: urban development alongside natural hazards." *INFORMS Annual Conference*, Nashville.	2016
Logan, T. M., McLeod, S., and Guikema, S. "Predictive models in horticulture: A case study with Royal Gala apples." *Joint Statistical Meeting*, Chicago.	2016
Logan, T. M., McLeod, S., and Guikema, S. "Predictive models in horticulture: A case study with Royal Gala apples." *INFORMS Annual Conference*, Philadelphia.	2015
Zaitchik, B.F.*, O'Meara, K.*, Guikema, S.D., Scott, A., Bessho, A., and Logan, T.M. *"Visualizing and Understanding Socio-Environmental Dynamics in Baltimore."* Proc., American Geophysical Union Fall Meeting	2015

* indicates presenting author, when not first

POSTER PRESENTATIONS

Logan, T. M. and Guikema, S. "Measuring urban resilience using access to essential services: Case study with Hurricane Florence." *University of Michigan Engineering Graduate Symposium*, Ann Arbor.	2018
Logan, T. M., Bricker, J., and Guikema, S. "The role of behavior in undermining the effectiveness of adaptive measures in reducing long-term vulnerability to natural hazards." *University of Michigan Engineering Graduate Symposium*, Ann Arbor.	2017
Williams, T. G., Logan, T. M., Liberman, K., Zuo, C., and Guikema, S. "How accessible are our cities? A cross-sectional analysis of access to green space." *University of Michigan Engineering Graduate Symposium*, Ann Arbor.	2017
Williams, T. G., Logan, T. M., Liberman, K., Zuo, C., and Guikema, S. "How accessible are our cities? A cross-sectional analysis of access to green space." *Research Symposium 2017: Urban Environment. Environmental Science and Policy Program.* Michigan State University.	2017
Logan, T. M., Bricker, J., and Guikema, S. "Tsunamis, seawalls, and memory: urban development alongside natural hazards." *University of Michigan Engineering Graduate Symposium*, Ann Arbor.	2016
Logan, T. M., McLeod, S., and Guikema, S. "Predictive models in horticulture: A case study with Royal Gala apples." *Joint Statistical Meeting*, Chicago.	2016
Logan, T. M., McLeod, S., and Guikema, S. "Predictive models in horticulture: A case study with Royal Gala apples." *Michigan Student Symposium for Interdisciplinary Statistical Sciences*, Ann Arbor.	2015

JOURNAL PAPERS IN PROGRESS

	Estimated submission
Bordley, R., Logan, T., Pollock, S. "Reducing the Underestimation Bias in PERT/CPM's Calculation of Schedule Risk." Intended for *Operations Research*	October 2018
Guikema, S.D, Quiring, S.M., Buckstaff, K., Beck, M., McRoberts, B., Nateghi, R., Logan, T.M. "Storm Damage and Restoration Labor Estimation: An All-Weather Model." Intended for *IEEE Access*	December 2018
Flage, R., Guikema, S., Logan, T., Johnson, C., Kabir, E., Schell, K. "Conceptualizing and handling uncertainty in predictive data models for risk analysis." Intended for *Risk Analysis*	December 2018
Logan, T.M, Zaitchik, B., Guikema, S. "Drivers of urban land surface temperature: diurnal and nocturnal." Intended for *Remote Sensing of Environment*	October 2018
Logan, T.M, Larsen, L., Guikema, S. "Urban density's effect on mental health." Intended for *Landscape and Urban Planning*	December 2018
Logan, T.M, Guikema, S. "A framework for urban resilience assessment." Intended for *Natural Hazards*	January 2018
Williams, T.G., Logan, T. M., Zuo, C., Liberman, K., Guikema, S., "Congested and dangerous: is this the state of green space for minorities in the USA?" Intended for *PLOS One*	October 2018

PERSONAL ACHIEVEMENTS

1st place over-all, Python Rogaine, 6hr navigational on/off trail running, Ohio   10/2018

1st place over-all, Gold Rush 12 Hour Summer Challenge, California   6/2018
       Qualified for USA Adventure Racing National Championship

1st place over-all, Nain Rouge Gaine, 6hr navigational on/off-trail running, Michigan   4/2018

1st place over-all, Frozen Beaver Rogaine, 6hr navigational on/off trail running, Ohio   2/2018

1st place over-all, Michigan Adventure Race: Winter Edition, 3hr, Michigan   1/2018