

# Tim G Williams

Email: [tgw@umich.edu](mailto:tgw@umich.edu)  
Website: <https://tgwilliams.com/>  
Blog: <https://reckoningrisk.com/>

## Summary

- Ph.D. candidate in Industrial and Operations Engineering at the University of Michigan
- Interdisciplinary researcher with experience in simulation modeling, risk, resilience, and data science
- Motivated by addressing social and environmental sustainability challenges

## Education

**University of Michigan** 2016-21  
*Ph.D. in Industrial and Operations Engineering* (expected)

- Advisor: Seth D Guikema
- Committee: Daniel G Brown, Arun Agrawal, Mark van Oyen
- Thesis topic: "Evaluating robust strategies for enhancing smallholder farmer resilience"

*M.Sc. in Industrial and Operations Engineering* 2016-19

**University of Canterbury** 2012-15  
*B.Eng. with 1<sup>st</sup> class honors in Natural Resources Engineering*

- Thesis topic: "Gravity currents propagating over rough boundaries"

## Employment History

University of Michigan	Research Assistant	2016-
Helmholtz Centre for Environmental Research (Umwelt Forschung Zentrum, UFZ)	Visiting Scholar	2019

## Publications

### In peer-reviewed journals

- Williams T.G.**, Guikema S.D., Brown D.G, Agrawal A. "Resilience and equity: quantifying the distributional effects of resilience-enhancing strategies in a smallholder agricultural system" *Agricultural Systems* 2020
- Williams T.G.**, Logan T.M., Zuo C., Liberman K., and Guikema S.D. "Parks and safety: a comparative study of green space access and its inequities in five US cities" *Landscape and Urban Planning* 2020
- Logan, T. M., **Williams, T. G.**, Nisbet, A. J., Liberman, K. D., Zuo, C. T., and Guikema, S. D. "Evaluating urban accessibility: Leveraging open-source data and analytics to overcome existing limitations." *Environment and Planning B – Urban Analytics and City Science* 2019
- Zhou, J., Cenedese, C., **Williams, T.**, Ball, M., Venayagamoorthy, S., Nokes, R. "On the propagation of gravity currents over and through a submerged array of cylinders." *Journal of Fluid Mechanics* 2017

### Under review

**Williams T.G.**, Dreßler G., Stratton A.E., Müller B. "Ecological and financial strategies provide complementary benefits for smallholder climate resilience: insights from an agent-based model" under review in *Ecology and Society*

**Williams T.G.**, Guikema S.D., Brown D.G, Agrawal A. "Assessing model equifinality for robust policy analysis in complex socio-environmental systems" under review in *Environmental Modelling & Software*

## In progress

**Williams T.G.**, Trush S., Sullivan J., Liao C., Chesterman N., Agrawal A., Guikema S.D., Brown D.G. "Direct and indirect land-use changes associated with large-scale land acquisitions in Ethiopia" invited contribution for *Journal of Land Use Science*

**Williams T.G.**, Agrawal A. "Land grabs and climate change: Establishing a future research agenda"

Bakhtsiyarava M., **Williams T.G.**, Verdin A., Guikema S.D., Grace K., "A non-parametric analysis of household-level food insecurity in Ethiopia and Nigeria"

## Conference Contributions

\* indicates presenting author

### Oral presentations

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| <b>Williams T.G.*</b> , Dreßler G., Stratton A.E., Müller B. "Ecological and financial strategies provide complementary benefits for smallholder climate resilience: insights from an agent-based model" <i>Michigan University-Wide Sustainability and Environment (MUSE) Conference</i>  | 2020 |
| Logan, T.*, Gray, S., Caines, M., <b>Williams, T.</b> , Rachunok, B., Chapman, B. "Roundtable: Tomorrow's Perspective on Today's Risk: Technology, Environment, and Society" <i>Society for Risk Analysis Annual Meeting</i>   | 2019 |
| <b>Williams T.G.*</b> , Guikema S.D., Brown D.G, Agrawal A. "Acknowledging uncertainty in models for sustainable development: a framework for robust policy analysis" <i>Society for Risk Analysis Annual Meeting</i>  | 2019 |
| Smith, A.*, Southworth J., Agrawal, A., Brown, D., Liao, C., Khatami R., Sullivan, J., <b>Williams, T.</b> , Muir, C., Trush, S., Ayana, A. "A comparative analysis of the social-ecological impacts of LSLAs in Ethiopia and Tanzania in the context of sustainable development" <i>Global Land Programme 4<sup>th</sup> Open Science Meeting</i> | 2019 |
| <b>Williams, T.*</b> "Computation and data science for food security" <i>Michigan University-Wide Sustainability and Environment (MUSE) Conference</i>   | 2019 |
| <b>Williams, T.*</b> , Logan, T, Zuo, C., Liberman, K., and Guikema, S. "Parks and safety: a comparative study of green space access and its inequities in five US cities" <i>Michigan University-Wide Sustainability and Environment (MUSE) Conference</i>  | 2019 |
| <b>Williams, T.*</b> , Guikema, S. "Modeling climate resilience in smallholder agricultural systems: an agent-based approach" <i>Society for Risk Analysis Annual Meeting</i>  | 2018 |
| <b>Williams, T.*</b> , Guikema, S. "Modeling climate resilience in smallholder agricultural systems: an agent-based approach" <i>Sustainable Development Conference</i>  | 2018 |
| <b>Williams, T.*</b> , Logan, T, Zuo, C., Liberman, K., and Guikema, S. "How accessible are our cities? A cross-sectional analysis of access to green space." <i>INFORMS Annual Meeting</i>  | 2017 |
| Logan, T. M., <b>Williams, T. G.*</b> , Nisbet, A. J., Liberman, K. D., Zuo, C. T., and Guikema, S. D. "Measuring accessibility to core urban services." <i>Michigan University-Wide Sustainability and Environment (MUSE) Conference</i> .  | 2017 |

### Poster presentations

<b>Williams, T.*</b> , Guikema, S. "Modeling climate resilience in smallholder agricultural systems: an agent-based approach" <i>University of Michigan Engineering Graduate Symposium</i>	2018
<b>Williams, T.*</b> , Logan, T, Zuo, C., Liberman, K., and Guikema, S. "How accessible are our cities? A cross-sectional analysis of access to green space." <i>Michigan University-Wide Sustainability and Environment (MUSE) Conference</i> .	2018
<b>Williams, T.*</b> , Logan, T, Zuo, C., Liberman, K., and Guikema, S. "How accessible are our cities? A cross-sectional analysis of access to green space." <i>University of Michigan Engineering Graduate Symposium</i>	2018
<b>Williams, T.*</b> , Logan, T, Zuo, C., Liberman, K., and Guikema, S. "How accessible are our cities? A cross-sectional analysis of access to green space." <i>Research Symposium 2017: Urban Environment. Environmental Science and Policy Program. Michigan State University</i>	2017

## Service and Leadership

### Reviewer

Journals: *Risk Analysis*

### Societies and organizations

Society of Risk Analysis Students and Young Professionals Committee	2020
Michigan University-wide Sustainability and Environment (MUSE) Initiative: Workshop Co-Coordinator	2018-20
Michigan University-wide Sustainability and Environment (MUSE) Conference 2019: Agenda Management	2018-19
Michigan University-wide Sustainability and Environment (MUSE) Conference 2018: Workshops Organizer	2017-18
University of Michigan Adventure Racing, Rogaining, and Orienteering (ARRO) Club president	2017-19
University of Canterbury Meditation Club President	2014-15
Engineers Without Borders (EWB) Canterbury Students Committee member	2014
EWB Conference Team	2013-14

## Awards and Fellowships

Rackham Predoctoral Fellowship	2020
JR Templin Scholarship	2019
Industrial and Operations Engineering Department Fellowship	2016
John Blackett Prize	2015
University of Canterbury Natural Resources Engineering Prize	2015
Environment Canterbury Natural Resources Engineering Prize	2015
IPENZ Rivers Group UC Prize	2014
Tonkin & Taylor Hydrology and Hydraulic Engineering Prize	2014
Beca Engineering in Society Scholarship	2014
URS Scholarship	2014
MWH New Zealand Ltd Geotechnical Engineering Prize	2014
C S McCully Scholarship	2014
Ian McMillan Prizes	2014

Vice Chancellor's Excellence Award	2014
MWH / Jim McFarlane Memorial Prize	2013
College House Rowley Scholarship	2013
University of Canterbury Emerging Leaders Scholarship	2012
University of Canterbury Undergraduate Entrance Scholarship	2012
NZQA Scholarship Physics	2011

### Teaching Experience

<b>IOE460: Decision analysis</b> – <i>graduate student instructor</i>	2018
<b>ENCN342: Fluid mechanics</b> – <i>tutor</i>	2015
<b>ENGR102: Engineering mechanics</b> - <i>tutor</i>	2014
Miscellaneous private tutoring for freshman-level engineering classes	2013-14

### Industry Experience

<b>Beca Ltd</b> – <i>Graduate Environmental Engineer</i> , Auckland Water Team	2016
Water treatment plant design, pipeline routing, landfill leachate tank design	
<b>Beca Ltd</b> – <i>Summer Intern</i> , Auckland Water Team	2014-15
Writing and editing reports, GoldSim modeling	
<b>Geotechnics Ltd</b> – <i>Summer Intern</i> , Auckland	2013-14
Calibrating and repairing shear vanes and impact testers	

### Key Strengths

Gallup Strengths Finder® strengths:

- **Harmony:** I believe that little is gained from conflict, and aspire to unite people via their similarities.
- **Achiever:** I have a constant need for attainment.
- **Relator:** I derive pleasure and strength from forming close relationships with people.
- **Includer:** I want to include people and make them feel a part of the group. I am instinctively accepting of others, regardless of race, sex, nationality, personality, or faith.
- **Learner:** I constantly strive to learn and improve. The process of learning is as important as the knowledge I gain.

### Other Skills

- Programming: Python, R
- Language: German (conversational-fluent)

### Interests

- Running: Dexter-Ann Arbor Half Marathon (2018), RAGNAR del Sol (2015), Shotover Moonlight mountain marathon (2014), Speights West Coaster 21K (2014), Speights West Coaster 30K (2013), Port Hills crater rim 28K (2013)
- Adventure racing, rogaining, and orienteering: Naine Rouge gaine (2018), Flying pig (2017), Python rogaine (2016, 2017, 2018), Sleeping Bear Adventure Race (2016), TWALK (2013, 2014, 2016), Castle hill bouldergaine (2014), Golden Road rogaine (2014), Heights of Winter rogaine (2013)
- Cross country skiing: USCSA Nationals (2017), Michigan cup races (2017)

## References

Available upon request.