

Michael T. Talbot

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EDUCATION

Ph.D., Civil & Environmental Engineering

Expected 2027

Colorado State University

Program: Hydrologic Science & Engineering

Dissertation: Advancing Streamflow Estimation in Colorado Using Mixture Distributions and Deep Learning

Advisor: Dr. Frances Davenport

Research areas: Flood frequency analysis and mixture distributions; Deep learning (LSTMs) for streamflow prediction at the extremes; Large-sample hydrology, mountain hydrology, and snow processes; Explainable AI and uncertainty quantification

M.S., Bioproducts & Biosystems Science, Engineering, and Management

2019

University of Minnesota

Thesis: Comparison of Evapotranspiration Estimation Methods and Implications for Water Balance Model Parameterization in the Midwestern United States

Advisor: Dr. Gary Sands

B.B.A.E., Biosystems & Agricultural Engineering

2009

University of Minnesota

RESEARCH & PROFESSIONAL EXPERIENCE

Graduate Research Assistant

2024 – Present

Colorado State University, Fort Collins, CO

Water Resources Engineer

2013 – 2023

Emmons & Olivier Resources, Inc., St. Paul, MN

Stormwater and flood modeling, climate resilience and risk analysis, watershed management planning (MN, IA, ON, AB), and web application development.

Graduate Research Assistant

2010 – 2012

University of Minnesota, St. Paul, MN

Graduate Research Contractor

2010

United States Geological Survey, Minneapolis, MN

Visiting Research Assistant

2009

Czech Technical University (ČVUT), Prague, Czech Republic

Undergraduate Research Assistant

2005 – 2009

University of Minnesota, St. Paul, MN

TEACHING EXPERIENCE

Graduate Teaching Assistant

Fall 2026 – Present

Department of Civil & Environmental Engineering, Colorado State University, Fort Collins, CO

- CIVE 520: Physical Hydrology

Graduate Teaching Assistant

2009 – 2012

Department of Bioproducts and Biosystems Engineering, University of Minnesota

- BBE 2001: Mechanics and Structural Design
- BBE 4013: Transport in Biological Systems II

Physics Learning Assistant

2009

Department of Physics and Astronomy, University of Minnesota

PUBLICATIONS

PEER-REVIEWED

1. **Talbot MT**, McGuire O, Olivier C, Fleming R. (2016). Parameterization and Application of Agricultural Best Management Practices in a Rural Ontario Watershed Using PCSWMM. *Journal of Water Management Modeling*. doi:10.14796/JWMM.C400
2. Sands GR, Canelon D, **Talbot M**. (2015). Developing optimum subsurface drainage design procedures. *Acta Agriculturae Scandinavica, Section B – Soil & Plant Science* 65(sup1):121–127. doi:10.1080/09064710.2014.997788

IN PREPARATION

1. **Talbot MT**, Davenport FV. (2026). Toward closing the peak-flow prediction gap in LSTM streamflow models. *In preparation*.

CONFERENCE PROCEEDINGS

1. **Talbot MT**, Sands G, Coulter J. (2014). Evaluating and Estimating DRAINMOD's Effective Rooting Depth for Corn. *Evapotranspiration: Challenges in Measurement and Modeling from Leaf to the Landscape Scale and Beyond*. Raleigh, NC. doi:10.13031/et.1863580

CONTRIBUTIONS & ACKNOWLEDGEMENTS

1. Capel PD, McCarthy KA, Coupe RH, Grey KM, Amenumey SE, Baker NT, Johnson RL. (2018). Agriculture — A river runs through it — The connections between agriculture and water quality. *U.S. Geological Survey Circular 1433*. doi:10.3133/cir1433
2. Lenhart CF, Titov ML, Ulrich JS, Nieber JL, Suppes BJ. (2013). The Role of Hydrologic Alteration and Riparian Vegetation Dynamics in Channel Evolution along the Lower Minnesota River. *Transactions of the ASABE* 56(2):549. doi:10.13031/2013.42686

PRESENTATIONS

1. **Talbot MT**. No Free Lunch? Improving LSTM Flood Predictions with Minimal Loss in Overall Skill. *AGU25 Annual Meeting*, New Orleans, LA. Dec 2025. Poster.
2. **Talbot MT**. Toward Enhancing Neural Networks in Predicting Streamflow Extremes. *2025 AWRA & CGWA Symposium*, Golden, CO. May 2025.
3. **Talbot MT**. Toward Improving Machine Learning Models for Predicting Streamflow Extremes. *2025 Hydrology Days*, Fort Collins, CO. Apr 2025.
4. **Talbot MT**. Watershed Alchemy: Transforming Data into Hydrologic Understanding. *AGU24 Annual Meeting*, Washington, D.C. Dec 2024. Poster.
5. **Talbot MT**. Evaluation of a GIS-Based Flood Hazard Assessment in Rochester, Minnesota. *56th International Conference on Water Management Modeling (ICWMM)*, Virtual. Mar 2023. Poster.
6. **Talbot MT**, Isensee M, Pynn B. Improving Remote Collaboration while Lowering Costs: A Case Study in Prioritization and Targeting using Open Source Software. *Minnesota Association of Watershed Districts Annual Conference*, Virtual. Dec 2020.

7. **Talbot MT.** Investigating the impact of ET model choice for DRAINMOD in the upper Midwest. *Midwest Drainage Research Forum*, Virtual. Dec 2020.
8. **Talbot MT.** Locating and Evaluating the Costs and Benefits of Urban LID Retrofits. *EWRI World Environmental & Water Resources Congress*, Minneapolis, MN. Jun 2018.
9. **Talbot MT.** What to do when your lidar is out of date: a modeling perspective. *51st International Conference on Water Management Modeling (ICWMM)*, Brampton, ON. Feb 2018.
10. **Talbot MT**, Perera N. Locating and Evaluating the Costs and Benefits of Urban LID Retrofits. *51st International Conference on Water Management Modeling (ICWMM)*, Brampton, ON. Feb 2018.
11. Naber JN, Ulrich JS, **Talbot MT.** Modeling the Influences of Riverine Hydrology on Near-Channel Nesting Habitat for State-Listed Turtle Species. *2016 Minnesota Water Resources Conference*, St. Paul, MN. Oct 2016.
12. Emmons BH, Correll C, **Talbot MT**, Davenport T, Vincent P. Searching for the Goldilocks Water Quality Model. *89th Central States Water Environment Association Annual Meeting*, Madison, WI. May 2016.
13. Olivier C, **Talbot MT.** Rural Stormwater Management Model (RSWMM). *48th International Conference on Water Management Modeling (ICWMM)*, Brampton, ON. Feb 2015.
14. **Talbot MT.** Assessment of Bioretention Device Performance by Use of Water Level Recordings. *2014 Minnesota Water Resources Conference*, St. Paul, MN. Oct 2014.

HONORS & AWARDS

Outstanding Graduate Student Service Award	May 2026
Graduate Student Council Conference Travel Grant	Nov 2025
Awarded for travel to the AGU25 Annual Meeting in New Orleans, Louisiana.	
Dr. Yung Hai and Dr. Ada Chen Civil and Environmental Engineering Graduate Scholarship	Oct 2025
Whitney Borland Scholarship	Jan 2024, Oct 2024, Oct 2025
AWRA Colorado Rich Herbert Memorial Scholarship	Feb 2025
CASFM Ben Urbonas Scholarship	Dec 2024
Walter Scott, Jr. College of Engineering Excellence in Research Award	Nov 2024
Graduate Student Council Conference Travel Grant	Nov 2024
Awarded for travel to the AGU24 Annual Meeting in Washington, D.C.	
Jorge Ramirez Graduate Scholarship in Hydrology and Water Resources	Oct 2024
Walter Scott, Jr. Graduate Fellowship	Jan 2024
EOR Forward! Award	Jan 2023
Awarded for high-quality and innovative project work.	

SERVICE & LEADERSHIP

Mentor, OURA Mentored and Matched Scholars	Spring 2026
Co-Chair, Hydrology Days Organizing Committee	Spring 2026
Peer Reviewer, Journal of Hydrology	2026 – Present
Peer Reviewer, Frontiers of Earth Science	2025 – Present
Mentor, Scott Undergraduate Research Experience (SURE)	Spring 2025
Treasurer, Environmental & Water Resources Institute (EWRI) Graduate Student Group	2025
Co-Chair, Water Engineering and Science (WES) Seminar	Fall 2024

CERTIFICATIONS & TRAINING

Certified Floodplain Manager (CFM) Since 2016
Association of State Floodplain Managers (ASFPM)
Credential ID: US-16-09490

Graduate Student Teaching Certificate Course (GSTCC) In Progress
Colorado State University

HPC System Administrator Workshop January 2026
University of Colorado Boulder / RMACC

- Selected for a competitive, immersive 5-day NSF-funded training (Grant #2322260) on research computing infrastructure
- Developed a deeper, hands-on understanding of HPC system architecture, image-based provisioning, and SLURM-based job scheduling in production research environments

PROFESSIONAL MEMBERSHIPS

American Society of Agricultural and Biological Engineers (ASABE)	Member, 2007 – Present
Association of State Floodplain Managers (ASFPM)	Certified Floodplain Manager (CFM), 2016 – Present
American Geophysical Union (AGU)	Member, 2024 – Present
American Society of Civil Engineers (ASCE)	Member, 2024 – Present
American Water Resources Association (AWRA)	Member, 2025 – Present