

CONRAD BRENDDEL

Work Address

SMHI
601 76 Norrköping
Sweden

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+46 072-141-0878

Home Address

Norrköping
Sweden

Objective To develop tools, models, and knowledge to support forecasting and decision-making to address global water resources issues.

Employment **Swedish Meteorological and Hydrological Institute:** Norrköping, Sweden
▪ *Researcher in Water Quality Modeling* 2022 -Present
▪ *Post-Doc in Hydrological Research* 2020-2022
City of Roanoke, Virginia Stormwater Utility Roanoke, USA
▪ *Stormwater Engineer I* 2020-2020
Virginia Tech Via Department of Civil & Environmental Engineering: Blacksburg, USA
▪ *Graduate Research Assistant for Dr. Randy Dymond* 2017-2020
▪ *Graduate Teaching Assistant* 2017-2020
Iowa State Agricultural and Biosystems Engineering Department: Ames, USA
▪ *Graduate Research Assistant for Dr. Michelle Soupir* 2015-2017

Education **Virginia Polytechnic Institute and State University:** Blacksburg, USA
Doctorate of Philosophy, Civil Engineering May, 2020
♦ Cumulative GPA: 4.0/4.0
Iowa State University: Ames, USA
Master of Science, Ag. & Biosystems Engineering May, 2017
♦ Co-Major: Civil Engineering
♦ Cumulative GPA: 3.89/4.0
Bachelor of Science, Civil Engineering May, 2015
♦ Minor: Sustainability
♦ *Magna cum laude* (GPA: 3.76/4.0) & Honors Program

Professional Experience » Monitoring and modeling of agricultural & urban water quality and quantity
» Large-scale modeling of soil erosion and sediment processes
» Research in fate and transport of emerging contaminants
» Development of apps and workflows for retrieval, visualization, & spatial/statistical analysis of large datasets
» Process and model assessment, development, calibration, and quality assurance
» Usage of high-performance (super) computing environments
» Program Experience:
▪ Geographic Information System (GIS): ESRI ArcGIS, QGIS, R
▪ Computer-Aided Design (CAD): AutoCAD Civil 3D
▪ Statistics: JMP, R, SAS
▪ H&H Models: GSSHA, HEC-HMS, HEC-RAS, HYPE, PCSWMM, SWAT, SWMM
▪ Phosphorus Models: ICECREAMDB
▪ Programming Languages: Fortran, Python, R, VBA
▪ Version Control Systems: Git, SVN
▪ Database Systems: MySQL

Professional Affiliations – ASCE-EWRI Emerging and Innovative Technologies Committee 2021-Present
– European Geosciences Union (EGU) 2021-Present
– Modelling & Simulation Society of Australia & New Zealand 2021-Present

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Grants & Contracts	» Roanoke Urban Stormwater Research - 2019 & 2020 Scope of Research	2018 & 2019
	» Iowa Water Center Supplemental Graduate Student Grant	2016
Selected Research Presentations	– MODSIM Conference <i>Relative importance of hydrology optimization targets and sediment routine combinations towards calibration of a global sediment model</i>	2021
	– HYPE Model Conference <i>Reservoir Sedimentation in HYPE</i>	2021
	– EGU General Assembly <i>Modeling losses of reservoir storage capacity from sedimentation in different landscapes</i>	2021
	– AWRA Geospatial Water Technology Conference <i>Probabilistic Urban Flash Flood Information Nexus (PUFFIN): An app for probabilistic forecasting of urban flash flooding</i>	2020
	– AWRA Spring Specialty Conference: Integrated Water Resources Management <i>An Interactive Web App for Retrieval, Visualization, & Analysis of Hydrologic & Meteorological Time Series Data</i>	2019
	– AWRA Summer Specialty Conference: GIS and Water Resources IX <i>Relating Watershed Characteristics to Elevated Stream E. coli Levels in Agriculturally Dominated Areas</i>	2016
Volunteer Experience	National Ski Patrol: <i>Alpine Patroller</i> <ul style="list-style-type: none">♦ Responsible for providing outdoor emergency care at ski resorts Special Olympics: <i>Coach at Arc of Story County</i> <i>Coach at Special Olympics Virginia - Southwest Region</i> <ul style="list-style-type: none">♦ Responsible for leading and organizing practices for variety of sports	2010-Present 2014-2020 Ames, USA Blacksburg, USA
Honors	» Recipient of National Ski Patrol Purple Merit Star For Saving A Life	2020
	» Virginia Tech Department of Civil & Environmental Engineering Via Scholar	2017-2020
	» ASABE Iowa Section Outstanding M.S. Degree Student	2017
	» Recipient of Monsanto Graduate Student Scholarship	2016
	» Iowa State University George Washington Carver Scholar	2011-2015
Languages	– English: Native	
	– Swedish: Intermediate	
	– German: Basic	

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- Publications** Law, J. Y., Long, L. A., Kaleita, A., Helmers, M., Brendel, C., van der Woude, K., & Soupir, M. (2022) Stacked conservation practices reduce nitrogen loss: A paired watershed study. *Journal of Environmental Management*, 302, 114053.
- Brendel, C., R. L. Dymond, and M. F. Aguilar. (2021) Modeling Storm Sewer Networks and Urban Flooding in Roanoke, Virginia with SWMM and GSSHA. *Journal of Hydrologic Engineering*, 26(1), 05020044.
- Brendel, C., R. L. Dymond, and M. F. Aguilar. (2020) Integration of quantitative precipitation forecasts with real-time hydrology and hydraulics modeling towards probabilistic forecasting of urban flooding. *Environmental Modelling & Software*, 134, 104864.
- Law, J.Y., C. Brendel, L. Long, M. Helmers, A. Kaleita, M. Soupir (2020) Impact of land use changes and conservation practices on phosphorus and sediment export at the catchment scale. *Journal of Environmental Quality*, 49(6), 1552-1563.
- Brendel, C., R. L. Dymond, and M. F. Aguilar. (2019) An interactive web app for retrieval, visualization, and analysis of hydrologic and meteorological time series data. *Environmental Modelling & Software*, 117, 14-28.
- Brendel, C., M.L. Soupir, L.M. Long, M. J. Helmers, C. D. Ikenberry, and A. L. Kaleita. (2018) Catchment scale phosphorus export through surface and drainage pathways. *Journal of Environmental Quality*, 48(1), 117-126.
- Brendel, C., & M.L. Soupir (2017). Relating Watershed Characteristics to Elevated Stream *Escherichia coli* Levels in Agriculturally Dominated Landscapes: An Iowa Case Study. *Water*, 9(3), 154.