

Taufique H. Mahmood

5/12/2020

Harold Hamm School of Geology and Geological Engineering, University of North Dakota,
Grand Forks, ND 58201.

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1. Summary of education

- Ph.D. in Geological Science (Hydrology), Arizona State University, Tempe, AZ, 2012.
(**Advisor:** Professor Enrique Vivoni)
- M.S. in Engineering science (RS and GIS), The University of Mississippi, 2003-2006.
- M.Sc. in Geology, University of Dhaka, Bangladesh, 2001-2003.
- B.Sc. in Geology, University of Dhaka, Bangladesh, 1996-2000.

2. Professional experience

- Assistant Professor, University of North Dakota, (08/2015 - present)
- Post-doctoral Fellow, University of Saskatchewan, (06/2012 – 08/2015).
- RS and GIS analyst, Center for Environment and Geographic Information System, Bangladesh, (03/2003 - 07/2003).

3. Publications

Published while at UND

1. **Mahmood, T.H.**, Hasan, K. and Akhter, S.H., 2019. Lithologic mapping of a forested montane terrain from Landsat 5 TM image. *Geocarto International*, 34(7), pp.750-768.
2. **Mahmood, T.H.**, Pomeroy, J.W., Wheeler, H.S., & Baulch, H. 2017. Hydrological responses to climatic variability in a cold agricultural region. *Hydrological Processes*, 31(4), 854-870.
3. Rasouli, K., Nasri, B.R., Soleymani, A., **Mahmood, T.H.**, Hori, M. and Haghghi, A.T., 2020. Forecast of streamflows to the Arctic Ocean by a Bayesian neural network model with snowcover and climate inputs. *Hydrology Research*. doi.org/10.2166/nh.2020.164.
4. Van Hoy, D.F., **Mahmood, T.H.**, Todhunter, P.E. and Jeannotte, T. 2020. Mechanisms of Cold Region Hydrologic Change to Recent Wetting in a Northern Glaciated Landscape. *Water Resources Research*, DOI: 10.1029/2019WR026932. Accepted: May 6, 2020.

Published before joining to UND

5. **Mahmood, T.H.** & Vivoni, E. R. (2014). Forest ecohydrological response to bimodal precipitation during contrasting winter to summer transitions. *Ecohydrology*, 7(3), 998-1013.
6. **Mahmood, T. H.** & Vivoni, E. R. (2011a). A climate-induced threshold in hydrologic response in a semiarid ponderosa pine hillslope. *Water Resources Research*, 47(9), 1028-1038.
7. **Mahmood, T.H.** & Vivoni, E.R. (2011b). Breakdown of hydrologic patterns upon model coarsening at hillslope scales and implications for experimental design, *Journal of Hydrology*, 411 (3-4), 309-321, doi: 10.1016/j.jhydrol.2011.10.011.
8. **Mahmood, T.H.** & Vivoni, E.R. (2008). Evaluation of distributed soil moisture simulations through field observations during the North American monsoon in Redondo Creek, New Mexico. *Ecohydrology*. 1(3): 271-287.

9. Vivoni, E.R., Rinehart, A.J., Méndez-Barroso, L.A., Aragón, C.A., Bisht, G., Cardenas, M.B., Engle, E., Forman, B.A., Frisbee, M.D., Gutiérrez-Jurado, H.A. **Mahmood, T.H.**, and Hong, S.H., 2008. Vegetation controls on soil moisture distribution in the Valles Caldera, New Mexico, during the North American monsoon. *Ecohydrology*, 1(3), pp.225-238.
10. **Mahmood, T.H.** & Easson, G.L. (2006). Comparing ASTER and Landsat 7 ETM+ at spectral level for change detection studies, ASPRS annual conference 2006, Reno, Nevada.

Under Review

1. Rasouli, K., Scharold, K., **Mahmood T.H.**, Glenn, N.F., Marks, D. (2020). The role of snowcover heterogeneity in runoff generation in mid-latitude mountain basins under climate variability. (*Under Review in **Hydrological Processes** after reject and resubmit*).
2. Todhunter, P., Jackson, C., **Mahmood, T.H.** (2020). Streamflow Partitioning using the Budyko Hypothesis in a Northern Glaciated Watershed under Drought to Deluge Conditions. (*Under Review in **Journal of Hydrology** after reject and resubmit*)
4. Jeannotte T., **Mahmood T.H.**, Matheney, R.K., Hou, X., Van Hoy, D.F. (2020). Phosphorous export model development in a terminal lake basin. (*Under review in **Journal of Hydrology** after moderate revision*).
5. **Mahmood, T. H.**, Pomeroy, J. W., Wheeler, H. S., Elliott, J. A., Baulch, H., and Lindenschmidt, K. 2020. Nutrient model development at multiple scales from streamflow-nutrient concentration relationship. (*In submission in **Hydrologic Science Journal** after reject and resubmit*).
6. Archambault A.L., **Mahmood T.H.**, Todhunter, P., (2020). Wetland dynamics of a terminal lake basin from remotely sensed imagery over last four decades: implications to hydro-climatic evolutions. (*Under review in **Remote Sensing of Environment***).
7. **Mahmood T.H.**, Putkonen., J., Sobbe, A. (2020). Spatially Variable Precipitation Dictates the Water Balance in a Headwater Basin of High Mountain Asia, Nepal. (*Under review in **Arctic, Antarctic and Alpine Research***).

In submission or preparation

1. Bradenberger, W., **Mahmood, T.H.** (2019). A hysteric response of wetland changes to recent climatic wetting in the Souris River Basin. (In preparation of ***Geocarto International***). Expected submission date: **Jul, 2020**.

Graduate students

- **Diane Van Hoy** (MS in Geological Engineering, graduated in summer, 2018):
 - **Van Hoy, D.F.,** Mahmood, T.H., Todhunter, P.E. and Jeannotte, T. 2020. Mechanisms of Cold Region Hydrologic Change to Recent Wetting in a Northern Glaciated Landscape. *Water Resources Research*, DOI: 10.1029/2019WR026932. Accepted: May 6, 2020.
- **Tyson Jeannotte** (MS in Geological Engineering, graduated in spring 2019, now Environmental Engineer, Division of Water Quality, ND) (**Turtle Band of Chippewa**).
 - **Jeannotte T.,** Mahmood T.H., Matheney, R.K., Hou, X., Van Hoy, D.F. (2020). Phosphorous export model development in a terminal lake basin. (*Under review in Journal of Hydrology after moderate revision*).
- **Alexis Archambault** (MS in Geological Engineering, 2017-2019, PhD in Geological Engineering, 2019-present). (**Standing Rock Tribe, Hunkpapa Lakota**).
 - **Archambault A.L.,** Mahmood T.H., Todhunter, P., (2020). Wetland dynamics of a terminal lake basin from remotely sensed imagery over last four decades: implications to hydro-climatic evolutions. (*Under review in Remote Sensing of Environment*).
 - **Archambault A.,** Mahmood T.H. 2018. Wetland Dynamics in a Terminal Lake Basin Using Remotely Sensed Imagery: Implication to Recent Hydroclimatic Evolution. In AGU Fall Meeting Abstracts, Washington DC, DC. (**Selected for oral presentation**).
 - Storage change to recent wetting and its impact to fill-spill hydrology in a terminal lake basin.
- **Stevie Holmes** (PhD in Environmental Engineering, started spring, 2019)
 - Hydrological Changes Due to Recent Wetting in a Cold Region Riverine Headwaters Environment.
- **Jeffrey Whitten** (PhD in Environmental Engineering, started spring, 2019)
 - Fate and transport of environmental neonicotinoid in vadose zone.
- **Eric Roth** (MS in Geological Engineering, started Fall, 2019, on-leave due to medical condition).
- **Miranda Shanks** (MS in Geology, co-advised with Dr. Putkonen, started Fall, 2019).
 - Mapping of Debris Covered Ice Masses; Transantarctic Mountains.

6. Professional presentations

Presentations and abstracts since my hire at Aug 2015

1. **Mahmood, T. H.,** Pomeroy, J. W., Wheeler, H. S., Elliott, J. A., Baulch, H., and Lindenschmidt, K. 2015. Nutrient Models Developments Using Runoff-Nutrient Relationships in an Agricultural Prairie Basin, Manitoba, American Geophysical Union 2015 Fall Meeting, San Francisco, CA. (**Poster**)
2. **Mahmood, T.H.** and Van Hoy, D., 2016, Impacts of Recent Wetting on Snow Processes and Runoff Generation in a Terminal Lake Basin, Devils Lake, North Dakota. In AGU Fall

Meeting Abstracts, San Francisco, CA. (Poster)

3. Van Hoy, D., **Mahmood, T.H.**, Jeannotte T., Todhunter, P. 2017. Impacts of Recent Climatic Wetting on Distributed Snow and Streamflow Responses in a Terminal Lake Basin. In AGU Fall Meeting Abstracts, New Orleans, LA. (Poster)
4. Jeannotte, T., **Mahmood, T.H.**, Matheney, R., Hou, X. 2017. Phosphorus Export Model Development in a Terminal Lake Basin using Concentration-Streamflow Relationship. In AGU Fall Meeting Abstracts, New Orleans, LA. (Poster)
5. Van Hoy, D., **Mahmood, T.H.**, Jeannotte T. 2017. Hydrological Responses to Climate Change in the Mauvais Coulee Basin. ND EPSCoR 2017 Conference, Fargo, ND. (Poster).
6. Van Hoy, D., **Mahmood, T.H.**, Jeannotte T., Todhunter, P. 2018. Impacts of Recent Climatic Variability on Cold Region Hydrologic Responses in a Terminal Lake Basin. ND EPSCoR 2018 Conference, Grand Forks, ND.
7. Jeannotte, T., **Mahmood, T.H.**, Matheney, R., Hou, X., Van Hoy, D. 2018. Phosphorus Export Model Development in a Headwater Basin to Devils Lake. ND EPSCoR 2018 Conference, Grand Forks, ND.
8. Archambault A., **Mahmood T.H.** 2018. Wetland Dynamics in a Terminal Lake Basin Using Remotely Sensing Imagery. EPSCoR 2018 Conference, Grand Forks, ND.
9. Archambault A., **Mahmood T.H.** 2018. Wetland Dynamics in a Terminal Lake Basin Using Remotely Sensed Imagery: Implication to Recent Hydroclimatic Evolution. In AGU Fall Meeting Abstracts, Washington DC, DC. (**Selected for oral presentation**).
10. Jeannotte, T., **Mahmood, T.H.**, 2018. Impacts of Land Management Practices on Phosphorous Concentration-Stream flow Relationship. In AGU Fall Meeting Abstracts, Washington DC, DC. (Poster)
11. Archambault A., **Mahmood T.H.** 2019. Wetland Hysteresis Under Various Climatic Conditions in a Terminal Lake Basin. EPSCoR 2019 Conference, Fargo, ND. (Poster).
12. Archambault, A.L., **Mahmood, T.H.**, 2019, Remotely Sensed Surface Water Dynamics in a Terminal Lake Basin: Implications to Recent Hydroclimatic Evolution. In AGU Fall Meeting Abstracts, San Francisco, CA. (Poster).

7. Grants and contracts

Submitted/Unfunded

1. **Taufique Mahmood (CO-I):** Past and future changes in precipitation in High Mountain. Award amount: \$982,000. Submitted to **NASA**. **PI:** Dr. Jaakko Putkonen.
2. **Taufique Mahmood (CO-I):** Modeling the dynamics and evolution of snow fallen on vegetated shallow reservoirs and wetlands using field and satellite data, Award amount: \$525,000. Submitted to **NASA**. **PI:** Dr. Howe Lim.
3. **Taufique Mahmood (CO-I):** Engaging Undergraduates in Multidisciplinary Unmanned Aerial Systems Research at the University of North Dakota. Award amount: \$487,500. Submitted to **NSF**. **PI:** Dr. Naima Kaabouch. (Recommended for funding)
4. **Taufique Mahmood (CO-I):** Slow landsliding a potential threat to hydrocarbon extraction, Williston, ND. Submitted to Office of Research, University of North Dakota. Award amount: \$90,000. **PI:** Dr. Jaakko Putkonen.
5. **Taufique Mahmood (CO-I):** Advancing Prairie Pothole Region Hydrological Simulations by Assimilating NASA Satellite Data with a Focus on Snow Evolution
Award amount: \$416,000. Submitted to **NASA**. **PI:** Dr. Howe Lim.

6. **Taufique Mahmood (PI):** Impacts of climate and land cover changes on snow processes and streamflow generation in a terminal lake basin, Devils Lake, ND. Award amount: \$250,000. Submitted to USGS. PI: Dr. Taufique Mahmood.
7. **Taufique Mahmood (PI):** Remotely Sensed Snow Water Equivalent Estimates using UAS LIDAR and Field Observations. Award Amount: \$13000. Submitted to University of North Dakota Grand Challenge.
8. **Taufique Mahmood (CO-I):** Hydronic Pavement Heating Technique Using Direct Geothermal Hot Water. Award Amount: \$90000. Submitted to University of North Dakota. PI: Dr. I-Hsuan Ho.
9. **Taufique Mahmood (CO-I):** MRI: Acquisition of an Acoustic Doppler Current Profiler (ADCP) System for Profiling Open Channels. Award Amount: \$120000. Submitted to NSF MRI program. PI: Dr. Howe Lim.
10. **Taufique Mahmood (CO-I):** System Dynamics Enhanced Analysis of Cascaded, Deep Direct-Use Geothermal Energy. Award Amount: \$700000. PI: Dr. Will Gosnold.
11. **Taufique Mahmood (PI):** Impacts of Recent Wetting on Cold Region Hydrologic Processes and Phosphorus Exports in the Upstream Watersheds of the Red River Basin. Award amount: \$250,000. Submitted to USGS. PI: Dr. Taufique Mahmood.
12. **Taufique Mahmood (Senior Personal):** A System Dynamics Approach for Ensuring Sustainable Exports of Food and Energy in a Water-Constrained Environment. Award amount: \$2.5 M. Submitted to NSF. PI: Dr. Michael Mann.
13. **Taufique Mahmood (PI):** Impacts of Recent Wetting on Cold Region Hydrologic Processes and Nutrient Export in a Terminal Lake Basin. Award amount (\$720000). Submitted to NSF early career. (Rejected)
14. **Taufique Mahmood (PI):** Acquisition of a cavity ring-down spectrometer to enhance research and training in environmental sustainability using stable isotope ratio analysis. Award amount (\$102,000). Submitted to NSF.
15. **Taufique Mahmood (CO-I):** Uncovering Hydrodynamics of Interconnected Wetlands and Lakes Using SWOT Mission Data. Award amount (\$867,000). Submitted to NASA. PI: Dr. Howe Lim.

Funded

1. **Taufique Mahmood (PI):** Impacts of climate change on cold region hydrologic responses and nutrient export. Award amount: \$83,700. ND EPSCoR start-up award.
2. **Taufique Mahmood (PI):** Impacts of Recent Climatic Wetting on Distributed Snow and Streamflow Responses in a Terminal Lake Basin. Award amount: \$1800 (partial summer support for a graduate student). North Dakota Water Resources Research Institute.
3. **Taufique Mahmood (CO-I):** Acquisition of an Acoustic Doppler Current Profiler (ADCP) System for Profiling Open Channels. Award amount: \$106,000. National Science Foundation. (PI: Dr. Lim)
4. **Taufique Mahmood (PI):** Wetland Dynamics in a Terminal Lake Basin Using Remotely Sensed Imagery: Implications to Recent Hydroclimatic Evolution. Award amount: \$43,000. ND EPSCoR GSRA award.
5. **Taufique Mahmood (Facilitator):** Acquisition of an ICP-OES for the Environmental and Analytical Laboratory, University of North Dakota. (\$90000, UND's College of Engineering internal funding).

6. **Taufique Mahmood (PI):** Online course development of Groundwater Monitoring and Remediation (GEOE 419). (\$3000, UND's College of Engineering internal funding).
7. **Taufique Mahmood (PI):** Hydrological Changes Due to Recent Wetting in a Cold Region Riverine Headwaters Environment. Award amount: \$1000 (partial summer support for a graduate student). North Dakota Water Resources Research Institute.
8. **Taufique Mahmood (PI):** Traditional Ecologic Theory to decipher past Hydrologic Change. Award amount: \$10,000. ND EPSCoR GSRA award.

4. Courses taught

University of North Dakota 2015-present

Fall, 2015

- GEOE 484, Geological Engineering Senior Design, 3 credits, 8 students

Spring, 2016

- GEOE 485, Geological Engineering Senior Design, 3 credits, 8 students
1. Lider, CB, 2016. An Engineering Safety Analysis of Slope Failure along the Banks of the Red Lake River of Crookston, MN. An Honors Thesis submitted and Poster presented at *University of North Dakota Honors Program Undergraduate Research Conference*, Grand Forks, ND. **Advisor: Dr. Taufique Mahmood. (Best Poster Award).**
 2. Lider CB, Kniech D, Erickson E, and Joos, C, 2016. An Analysis of Long Term Slope Stabilization Methods along the Red Lake River. Poster presented at *College of Engineering, UND Design Exposition Conference*, Grand Forks, ND. **Advisor: Dr. Taufique Mahmood. (Best Poster Award in outstanding senior prototype design).**
 3. Bogers BL, Gelhar D, Hoffert B, Preston K. 2016. Flood Mitigation Plan using Small Upstream Reservoirs in Devils Lake Drainage Basin, North Dakota. *Poster presented at College of Engineering, UND Design Exposition Conference*, Grand Forks, ND. **Advisor: Dr. Taufique Mahmood.**
- GEOE 419, Groundwater Monitoring and Remediation, 3 credits, 4 students

Fall, 2016

- GEOE 484, Geological Engineering Senior Design, 3 credits, 10 students.
- GEOE 493, Special Topic in Geological Engineering (Cold Region Hydrologic Modeling), 3 credits, 4 students

Spring, 2017

- GEOE 485, Geological Engineering Senior Design, 3 credits, 9 students.
1. Scharold, K., Ali, M. 2017. Use of LIDER derived snow depth on evaluating a physically based distributed hydrologic model: Implications for watershed design and future climate change studies. *Poster presented at College of Engineering, UND Design Exposition Conference*, Grand Forks, ND. Advisor: Dr. Taufique Mahmood.
 2. Tesfu, M., Nelson, C, Nelson, K. 2017. Perfluorinated Compound Contamination and Remediation in the Groundwater of St. Paul Suburb. Poster presented at College of

Engineering, *UND Design Exposition Conference*, Grand Forks, ND. Advisor: Dr. Taufique Mahmood.

- GEOE 419, Groundwater Monitoring and Remediation, 3 credits, 11 students
- GEOE 540, Water Sampling and Analyses, 3 credits, 8 students (co-taught with Dr. Matheney).
- GEOL 591, Directed Studies, 1 student.

Summer, 2017

- GEOE 996, Continued Enrollment, 1 student.

Fall, 2017

- GEOE 484, Geological Engineering Senior Design, 3 credits, 8 students.
- GEOE 493, Special Topic in Geological Engineering (Cold Region Hydrologic Modeling), 3 credits, 9 students (7 face to face + 2 Online).
- GEOL 591, Directed Studies, 1 student.
- GEOE 998, Thesis, 2 students.

Spring, 2018

- GEOE 485, Geological Engineering Senior Design, 3 credits, 8 students.
1. Muvundamina K, Johnson C, Sprengelmeyer D, and Weatherford, M, 2018. Multi-Well Numerical Reservoir Simulation For Infill Drilling. Poster presented at *College of Engineering, UND Design Exposition Conference*, Grand Forks, ND. **Advisor: Dr. Taufique Mahmood.**
 2. Schmidt B, Sobbe A, Renner W, and Brandenburger, W, 2018. Mechanisms and Mitigation of the 2011 Souris River Flood near Minot, North Dakota. Poster presented at *College of Engineering, UND Design Exposition Conference*, Grand Forks, ND. **Advisor: Dr. Taufique Mahmood.**
- GEOE 419, Groundwater Monitoring and Remediation, 3 credits, 15 students (12 face to face + 3 Online).
 - GEOL 540, Water Sampling and Analyses, 3 credits, 6 students (co-taught with Dr. Matheney).
 - GEOE 998, Thesis, 2 students.

Summer, 2018

- GEOL 111, Views of Earth and Planets (Lecture) (Online), 3 credits, (8 Online students).
- GEOL 419, Groundwater Monitoring and Remediation (Online), 3 credits, (1 Online student).
- GEOL 591, Directed studies, 3 credits, (1 face to face student).

Fall, 2018

- GEOL 101, Introduction to Geology, 3 credits, 24 students.
- GEOE 419, Groundwater Monitoring and Remediation (Online), 3 credits, (1 Online).
- GEOE 493, Special Topic in Geological Engineering (Cold Region Hydrologic Modeling), 3 credits, 5 students (5 face to face).
- GEOE 998, Thesis, 2 students.

Spring, 2019

- GEOL 101, Introduction to Geology, 3 credits, 63 students (face to face).
- GEOL 540, Water Sampling and Analyses, 3 credits, 6 students (co-taught with Dr. Matheney).
- GEOE 998, Thesis, 1 student.
- GEOL 591, Directed studies, 1 credits, (1 face to face student).
- ENVE 591, Environmental Engineering Research, 3/6 credits, (2 online students).

Fall, 2019

- GEOL 101, Introduction to Geology, 3 credits, 41 students.
- GEOE 419, Groundwater Monitoring and Remediation, 3 credits, 13 students (10 face to face students+3 online students).
- GEOE 417, Hydrogeology, 3 credits, 14 students (8 face to face students+ 6 online students).

Spring, 2019

- GEOL 101, Introduction to Geology, 3 credits, 39 students (face to face).
- GEOL 540, Water Sampling and Analyses, 3 credits, 4 students (co-taught with Dr. Matheney).
- GEOL 591, Directed studies, 1 credits, (1 face to face student).
- ENVE 591, Environmental Engineering Research, 3/6 credits, (2 online students).

Undergraduate advisee:

- **2015-16:** Bryan Boger, Carleigh Lider, Daniel Gelhar, Kathleen Preston, Emily Erickson, Cody Joos, Daniel Kniech and Bridget Hoffert.
- **2016-17:** Karis Scharold, Collette Nelson, Colt Nelson, Merry Tesfu, Shelby Johnson, Phillip Horn, Rylan Limesand, Mohamed Ali and Jason Myrvold.
- **2017-18:** Aaron Sobbe, Will Brandenberger, Cassie Johnson, Kabedi Muvundamina, Bradley Schmidt, Daniel Sprengelmeyer, Renner William and Michael Weatherford.
- **2018-present:** Makayla Mather (McNair scholar, NSF funded undergraduate fellowship, **Tlingit and Haida's Indian Tribe** of Alaska): Numerical simulations of an alpine glaciers in the Rocky Mountain range.

Undergraduate Research Assistant worked on various projects

- **Bryan Boger**, Undergraduate Research Assistant in Geological Engineering, University of North Dakota (2015-2016). (current position: Graduate research assistant in Geological Engineering, University of Wisconsin, Madison)
- **Carleigh Lider**, Undergraduate Honors thesis advisee, Geological Engineering, University of North Dakota (2015-2016).
- **Karis Scharold**, Undergraduate Research Assistant in Geological Engineering, University of North Dakota (2016-2017). (Current position: Geotechnical Engineer, Northern GN).
- **Aaron Sobbe**, Undergraduate Research Assistant in Geological Engineering, University of North Dakota (2016-2017).
- **MD Ahsan Habib**, Graduate Research Assistant in Geological Engineering, University of North Dakota (2016). (Current position: Graduate research assistant in Mechanical Engineering, University of Alabama, Huntsville).

Nature Summer Camp, 2018 Native American students: Curtis Ferris, Taylor Peltier, Wilma Little Bear and Mhaddie Poitra.

Nature Summer Camp, 2019 Native American students: Curtis Ferris and Mhaddie Poitra.

Master's Thesis Committee

- Diane Van Hoy, Chair of Committee (Geological Engineering)
- Tyson Jeannotte, Chair of Committee (Geological Engineering)
- Alexis Archambault, Chair of Committee (Geological Engineering)
- Eric Roth, Chair of Committee (Geological Engineering)
- Kelsey Forward, member of Committee (Geology)
- Ogochukwu Ozotta, member of Committee
- Courtney Jackson, member of Committee (Department of Geography and GIS)
- Timothy Wuenscher, member of Committee (Geology)
- Justin Mark, member of Committee (Environmental Engineering)
- Daniel Fife, member of Committee (Department of Civil Engineering)
- Ryan Hason, member of Committee (Department of Civil Engineering)
- Alexa Docioame, member of Committee (Department of Civil Engineering)
- Brianna Speldrich, member of Committee (Geology)
- Eohjin Lee, member of Committee (Department of Geography)
- Zachary Ranisate, member of Committee (Department of Civil Engineering)

Doctoral Dissertation Committee

- Bahareh Shoghli, member of Committee (Department of Civil Engineering)
- Stevie Holmes, chair of Committee (Department of Environmental Engineering)
- Jeffrey Whitten, chair of Committee (Department of Environmental Engineering)
- Alexis Archambault, chair of Committee (Department of Geological Engineering)
- Scott Aaron, member of Committee (Department of Atmospheric Science)
- Jared Marquis, member of Committee (Department of Atmospheric Science)

5. Service

Department (Harold Hamm School of Geology and Geological Engineering)

- Member of the Geological Engineering curriculum committee (2016-present).
- Member of the scholarship committee (2016-17).
- Member of the graduate program Committee (2017-present).
- Manage and oversee Environmental and Analytical Research Laboratory (EARL) renovation (chemically resistant sink, countertop, storage and table), a new classroom development and in process of acquisition of ICP-OES.
- GGE ABET coordinator.
- Member of the GGE curriculum committee (2018-present).
- Faculty in-charge for Environmental and Analytical Laboratory (EARL).

College of Engineering and Mines (CEM)

- Member of the scholarship committee (2016-present).

Professional:

- Reviewed 30 manuscripts for leading scientific journals such as Journal of Hydrology, Geocarto International, Hydrologic Sciences Journal, Water Resources Research, Water and Hydrology and Earth System Sciences.

Invited talks

- 10/2/2015: Hillslope Scale Hydrologic Spatial Patterns in a Patchy Ponderosa Pine Landscape. LEEPS lecture, Harold Hamm School of Geology and Geological Engineering, University of North Dakota.
- 2/10/2016: Impacts of climatic variability on cold region hydrologic response and nutrient export. Weekly seminar, Department of Geography and Geographic Information Science, University of North Dakota.

Community/Outreach

- 6/8/2017: Hydrology and Water Quality of North Dakota. A talk presented to ND EPSCoR NATURE summer camp students (Native American students from North Dakota), University of North Dakota.
- 6/9/2018: Water sampling from the aquifer and stream. An on-field talk presented to ND EPSCoR NATURE summer camp students (Native American students from North Dakota), University of North Dakota.
- 6/6/2019: Water sampling from the aquifer and stream. An on-field talk presented to ND EPSCoR NATURE summer camp students (Native American students from North Dakota), University of North Dakota.

Faculty Advisor of following association

- Sigma Gamma Epsilon (SGE, 2016-2019), Bangladesh Student Association at UND (2015-2017) and Association of Environmental and Engineering Geologist (2015-2016).