

SYEED MD ISKANDER, Ph.D., PE

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EDUCATION

Ph.D.	Virginia Tech , Blacksburg, USA Civil Engineering, 2019
M.S.	Washington State University , Pullman, USA Environmental Engineering, 2014
B.S.	Bangladesh University of Engineering and Technology , Dhaka, Bangladesh Civil Engineering, 2012

PROFESSIONAL EXPERIENCE

08/2020 – Present	Assistant Professor , Department of Civil, Construction and Environmental Engineering, North Dakota State University Affiliated Assistant Professor: Department of Environmental and Conservation Sciences, NDSU; North Dakota Water Resources Research Institute.
05/2019 – 07/2020	Postdoctoral Research Associate , Department of Civil and Environmental Engineering, University of Southern California
08/ 2015 – 05/2019	Graduate Research Assistant , Department of Civil and Environmental Engineering, Virginia Tech
08/2018 – 12/2018	Instructor of Record , Department of Civil and Environmental Engineering, Virginia Tech
08/2013 – 07/2015	Graduate Teaching Assistant , Department of Civil and Environmental Engineering, Washington State University
05/2012 – 07/2013	Lecturer , Department of Civil Engineering, University of Information Technology and Sciences, Stamford University, Ahsanullah University of Science and Technology, Bangladesh

RESEARCH INTERESTS

- Municipal solid waste management
- Plastics pollution
- Composting
- Landfilling and landfill leachate management

RESEARCH GRANTS

Federal organizations	Total
Environmental Protection Agency EPA P3 GRANT. Three-way removal of per- and polyfluoroalkyl substances from high-strength landfill leachate utilizing simultaneous foaming and humic acid precipitation during pH adjustment. 08/01/2023 – 07/31/2024.	\$24,982
United States Geological Survey, USGS. Per and polyfluoroalkyl substances removal from landfill leachate by coagulation. 09/01/2022 – 08/31/2023.	\$16,800
United States Geological Survey, USGS. Landfill leachate plastics: occurrence, transformation, fate, and environmental implications. 09/01/2022 – 08/31/2023.	\$16,800
State funding	
Meadowlark. Phase 2: Reclamation Resource Development and Utilization. 10/2022 – 12/2027. Meadowlark Midstream and Summit Midstream.	Total: \$1,987,724 (co-PI Iskander's share: \$82,965)
ND and NDSU funding	
NDSU Foundation & Alumni Association – FAR0035899: Engineering landfill daily covers with agricultural waste-derived biochar for controlling the movement of Per and Polyfluoroalkyl Substances in leachate. 05/03/2022 – 10/31/2023.	\$7,661
NDSU RCA. Research Development and Conference Support Award, Research and Creative Activity Office, NDSU – 04/2022.	\$1,000
NDSU RCA. Research Support Services Award, Research and Creative Activity Office, NDSU – 03/2022.	\$1,000
ND EPSCoR Leveraged Funds: STEM Faculty Start-ups. 07/01/2020 – 06/30/2021.	\$50,000
NDSU RCA. Research Support Services Award, Research and Creative Activity Office, NDSU – 03/2021.	\$2,500
NDSU RCA. Research Development and Conference Support Award, Research and Creative Activity Office, NDSU – 03/2021.	\$1,000

NDSU EPSCoR Equipment – FAR0033934: Purchase of a Fourier-transform Infrared Spectroscopy (FTIR) Microscope. 10/21/2020 – 05/31/2021.	\$35,000
ND EPSCoR Equipment – FAR0033554: Purchase of a shaking incubator. 12/24/2020 – 05/31/2021.	\$5,000
NDSU EPSCoR Equipment – FAR0035364 and FAR0035401: Purchase of a Thermo Scientific Dionex Reagent-Free Ion Chromatography System. 10/21/2021 – 05/31/2022.	\$35,000
ND EPSCoR SEED Grant – FAR0033911: Improving the Non-Recyclable Municipal Solid Waste Management Practice for Enhanced Contaminants Removal and Bioenergy Production. 10/16/20 – 05/31/2021.	\$10,000

ACADEMIC HONORS AND AWARDS

2023	Innovation in Teaching Award, Office of Teaching and Learning, North Dakota State University
2023	40 under 40 Recognition Program, American Academy of Environmental Engineers and Scientists
2019	First Place, flash talk, 1 st annual Alpha Epsilon Honor Society Research Symposium, Virginia Tech
2019	Gold Award, oral presentation, 35 th Annual Graduate Student Assembly Research Symposium, Virginia Tech
2019	Graduate Teaching Assistant Excellence Award, Departmental Nominee, Civil and Environmental Engineering, Virginia Tech
2019	Diversity Scholar, Office of Recruitment, Diversity, and Inclusion – Graduate School, Virginia Tech
2018	Civil and Environmental Engineering Teaching Fellow, Virginia Tech
2017	First Place, oral presentation, 33 rd Annual Graduate Student Assembly Research Symposium, Virginia Tech
2016 – 2019	Environmental Research and Education Foundation Ph.D. Scholarship
2016 & 2017	Runner up, Environmental Challenge International Competition, Air & Waste Management Association
2016	Jaqueline Shields Memorial Scholarship, Air & Waste Management Association
2016	Solid Waste Institute for Sustainability – International Solid Waste Association Scholarship, University of Texas, Arlington
2015	Pratt Graduate Fellowship, Virginia Tech

2007 – 2012	University Merit Scholarship, Bangladesh University of Engineering and Technology
2007 – 2012	Dean's List Award, Bangladesh University of Engineering and Technology

PEER REVIEWED PUBLICATIONS

*	Corresponding/Co-corresponding author.
17	Yadav, H., Khan, M.R.H., Quadir, M., Rusch, K.A., Mondal, P.P., Orr, M., Xu, E., Iskander, S.M., Cutting boards: an overlooked source of microplastics in human food? <i>Environmental Science and Technology</i> . <u>Under Review</u> .
16	Saha, B., Eliason, K., Golui, D., Masud, J., Bezbaruah, A.N., Iskander, S.M.* 2023. Rare Earth Elements (REEs) in Sands Collected from Southern California Sea Beaches. <i>Chemosphere</i> . <u>Under Review</u> .
15	Saha, B., Khan, M.T., Graupman, M., Aslam, H.M.U., Gupta, A.K., Helmin, G., Larson, M., Chard, K., Hayes, B., Anderson, R., Bolyard, S.C., Rusch, K.A., Bezbaruah, A.N., Iskander, S.M.* 2023. Impacts of the COVID-19 pandemic on landfilling and recycling in the City of Fargo, North Dakota, USA. <i>Journal of Air and Waste Management Association</i> . <u>Under Review</u> .
14	Jannat, S.G.E., Golui, D., Islam, S. Saha, B., Rahman, S.M., Bezbaruah, A.N., Syeed Md Iskander, S.M.* 2023. Industrial Water Demand and Wastewater Generation: Challenges for Bangladesh's Water Industry. <i>ACS ES&T Water</i> .
13	Golwala, H., Saha, B., Zhang, X., Bolyard, S., He, Z., Novak, J.T., Deng, Y., Brazil, B., DeOrio, F.J., Iskander, S.M.* 2022. Advancement and challenges in municipal landfill leachate treatment – the path forward! <i>ACS ES&T Water</i> . <u>Cover</u> , 2, 8, 1289-1300.
12	Wang, P., Zarei Baygi, A., Saucedo, C., Iskander, S.M., Smith, A.L.* 2021. Long-Term Surveillance of Wastewater SARS-CoV-2 in Los Angeles County. <i>Environmental Science: Water Research & Technology</i> , 7, 2282-2294.
11	Iskander, S.M., Amha, Y.M., Wang, P., Dong, Q., Liu, J., Corbett, M., Smith, A.L.* 2021. Investigation of fats, oils, and grease co-digestion with food waste in anaerobic membrane bioreactors and the associated microbial community using MinION sequencing. <i>Frontiers in Bioengineering and Biotechnology</i> , 9, 206.
10	Golwala, H., Zhang, X., Iskander, S. M.* , Smith, A. L.* , 2021. Solid Waste: An Overlooked Source of Microplastics to the Environment. <i>Science of The Total Environment</i> , 769, 144581.
9	Xu, B., Iskander, S.M., He, Z.* , 2020. Dominant formation of unregulated disinfection by-products during electrocoagulation treatment of landfill leachate. <i>Environmental Research</i> , 182, 109006.
8	Iskander, S.M., Zeng, T., Smiley, E., Bolyard, S., Novak, J.T., He, Z.* , 2020. Formation of disinfection byproducts during Fenton's oxidation of chloride-rich landfill leachate. <i>Journal of Hazardous Materials</i> , 382, 121213.

7	Iskander, S.M., Novak, J.T., He, Z. *, 2019. Reduction of reagent requirements and sludge generation in Fenton's oxidation of landfill leachate by synergistically incorporating forward osmosis and humic acid recovery. Water Research , 151, 310-317.
6	Iskander, S.M., Zhao, R., Pathak, A., Gupta, A., Pruden, A., Novak, J.T., He, Z. *, 2018. A review of landfill leachate induced ultraviolet quenching substances: Sources, characteristics, and treatment. Water Research , 145, 297-311.
5	Iskander, S.M., Novak, J.T. and He, Z. *, 2018. Enhancing forward osmosis water recovery from landfill leachate by desalinating brine and recovering ammonia in a microbial desalination cell. Bioresource Technology , 255, 276-282.
4	Iskander, S.M., Novak, J.T., Brazil, B., He, Z. *, 2017. Simultaneous energy generation and UV quencher removal from landfill leachate using a microbial fuel cell. Environmental Science and Pollution Research , 24 (33), 26040–26048.
3	Iskander, S.M., Novak, J.T., Brazil, B., He, Z. *, 2017. Percarbonate oxidation of landfill leachates towards removal of ultraviolet quenchers. Environmental Science: Water Research & Technology , 3(6), 1162-1170.
2	Iskander, S.M., Zou, S., Brazil, B., Novak, J.T., He, Z. *, 2017. Energy consumption by forward osmosis treatment of landfill leachate for water recovery. Waste Management , 63, 284-291.
1	Iskander, S.M., Brazil, B., Novak, J.T., He, Z. *, 2016. Resource recovery from landfill leachate using bioelectrochemical systems: Opportunities, challenges, and perspectives. Bioresource Technology , 201, 347-354.

CONFERENCE PROCEEDINGS

1. Iskander, S.M., 2016. A Broader Perspective of the Municipal Solid Waste Management Systems in Dhaka, Bangladesh. International Solid Waste Association (ISWA) – Solid Waste Institute for Sustainability (SWIS) Winter School Proceedings, pp 107-118.

TALK/CONFERENCE PRESENTATIONS

- Iskander, S.M., Saha, B. Microplastics in organic waste compost: occurrence and degradation. American Chemical Society (ACS) Conference, Chicago, IL, August 2022.
- Iskander, S.M., Saha, B. Microplastics in organic waste compost: occurrence and degradation. Association of Environmental Engineering and Science Professors (AEESP) Conference, St. Louis, MO, June 2022.
- Iskander, S.M. Reduction in required reagents and sludge generation in Fenton's oxidation of landfill leachate through forward osmosis and humic acid recovery, ND Environmental Conference, Bismarck, North Dakota, September 2021.
- Iskander, S.M. Recovering waste resources and addressing emerging contaminants for sustainability, North Dakota State University – Vellore Institute of Technology seminar series, March 2021.
- Iskander, S.M. Recovering wastewater resources for sustainability. American Water Works Association/Water Environment Federation Student Chapter Meeting, North Dakota State University, Jan 2021.

- Iskander, S.M. Recovering wastewater resources for sustainability. Department of Civil and Environmental Engineering, North Dakota State University, October 2020.
- Iskander, S.M. Recovering waste resources and addressing emerging contaminants for sustainability. Department of Civil and Environmental Engineering, North Dakota State University, April 2020.
- Iskander, S.M. Recovering wastewater resources and addressing emerging contaminants for sustainability. Astani Department of Civil and Environmental Engineering, University of Southern California, April 2020.
- Iskander, S.M. Recovering wastewater resources and addressing emerging contaminants for sustainability. Department of Civil and Environmental Engineering, Southern Illinois University, March 2020.
- Iskander, S.M. Recovering wastewater resources and addressing emerging contaminants for sustainability. Department of Civil, Environmental, and Construction Engineering, University of Central Florida, February 2020.
- Iskander, S.M., Novak, J.T., He, Z. Reduction of reagent requirements and sludge generation in Fenton's oxidation of landfill leachate by synergistically incorporating forward osmosis and humic acid recovery. Association of Environmental Engineering and Science Professors (AEESP) Conference, Tempe, AZ, May 2019.
- Iskander, S.M., Novak, J.T., He, Z. An Integrated forward osmosis - microbial desalination cell technique for enhanced water recovery from landfill leachate. Annual Alpha Epsilon Honor Society Research Symposium, Agricultural, Food, and Biological Engineering Department, Virginia Tech, VA, March 2019.
- Iskander, S.M., Novak, J.T., He, Z. Reduction in required reagents and sludge generation in Fenton's oxidation of landfill leachate through forward osmosis and humic acid recovery. 35th Graduate Student Assembly (GSA) Symposium, Virginia Tech, VA, March 2019.
- Iskander, S.M. Advanced oxidation for wastewater treatment. Annual Virginia Tech Wastewater Operator Short School, Blacksburg, VA, August 2018.
- Iskander, S.M., Novak, J.T., Brazil, B., He, Z. Simultaneous energy generation and ultraviolet quenchers removal from landfill leachate using a microbial fuel cell. Global Waste Management Symposium, Palm Springs, CA, February 2018.
- Iskander, S.M., Novak, J.T., Brazil, B., He, Z. An Integrated forward osmosis – microbial desalination cell technique for enhanced water recovery from landfill leachate. EREF WasteExpo, New Orleans, LA, May 2017.
- Iskander, S.M., Novak, J.T., Brazil, B., He, Z. Integrating microbial desalination with forward osmosis to complement water recovery from landfill leachate. 33rd Graduate Student Assembly (GSA) Symposium, Virginia Tech, VA, March 2017.
- Iskander, S.M., Novak, J.T., Brazil, B., He, Z. Pretreatment of landfill leachate for enhanced electricity generation in a microbial fuel cell. 32nd Graduate Student Assembly (GSA) Symposium, Virginia Tech, VA, March 2016.

TEACHING EXPERIENCE

Course Title	Semester	Student Evaluation	University
Plastics Pollution to Solution	Spring 2023	TBD	North Dakota State University
Microbiological Principles for Environmental Engineers	Spring 2023	TBD	North Dakota State University
Solid and Hazardous Waste Management	Fall 2022	4.84/5.0	North Dakota State University
Microbiological Principles for Environmental Engineers	Spring 2022	4.44/5.0	North Dakota State University
Senior Design Environmental Engineering Consultant	Spring 2022	NA	North Dakota State University
Solid Waste Management	Fall 2021	4.14/5.0	North Dakota State University
Introduction to Environmental Engineering	Spring 2021	4.24/5.0	North Dakota State University
Introduction to Environmental Engineering	Fall 2018	4.80/6.0	Virginia Tech

PEDAGOGICAL TRAINING**Peer Teaching Evaluation program**, North Dakota State University, 2021

I was evaluated by Prof. Kelly Sassi, Professor of English and Education at NDSU, in two of my Solid Waste Management classes in fall 2021. Prof. Sassi made recommendations on the desired improvement in my class and I have worked on that.

Teaching Certificate: Future Professoriate Certificate, Virginia Tech, 2018

I completed the following courses at Virginia Tech to earn the Future Professoriate Certificate.

Teaching Coursework, Virginia Tech

- Preparing the Future Professoriate
- Contemporary Pedagogy
- Communicating Science
- Diversity for the Global Society

MENTORING EXPERIENCE

North Dakota State University

Ryan Anderson (01/21 – Present)	Micro/nanoplastics in municipal solid waste.
Kira Eliason (02/21 – Present)	Rare earth elements recovery from waste.
Biraj Saha (06/21 – Present)	Concentrated landfill leachate treatment for emerging contaminants removal.
Himani Yadav (08/21 – Present)	Human exposure to microplastics.
Md Tanbir Khan (08/22 – Present)	Degradation mechanisms of plastics in landfills.

University of Southern California

Bianca Costa (08/19 – 07/20)	Antibiotic resistance genes fate during food waste treatment.
Harmita Golwala (01/20 – 07/20)	Fate of food waste microplastics in anaerobic membrane bioreactors.
Xueyao Zhang (01/20 – 07/20)	Microplastics in Solid Waste.

Virginia Tech

Jessie Chung (08/18 – 05/19)	An incorporated advanced oxidation and membrane distillation treatment of landfill leachate.
Bing Xu (01/19 – 05/19)	Disinfection byproducts formation during electrochemical treatment of landfill leachate.
Nick Lang (01/17 – 05/17)	Microbial desalination treatment of landfill leachate.
Qinying Zha (08/16 – 05/17)	Nitrification of landfill leachate for ammonia removal and effects of inhibiting factors on biomass growth.

RESEARCH GROUP'S AWARDS AND HONORS

2022	Biraj Saha. Best team award, 2022 International Solid Waste Association-Solid Waste Institute for Sustainability (ISWA-SWIS) Winter School, The University of Texas at Arlington, USA.
2022	Ryan Anderson. First place in oral presentation, 2022 NDSU EXPLORE Showcase of Undergraduate Research and Creative Activity.
2022	Himani Yadav. Fifth place in oral presentation, 2022 Research Symposium of the Graduate Student Council, NDSU.
2022	Biraj Saha. Finalist, NDSU Three Minute Thesis Competition, Feb 2022.

2021	Biraj Saha. Full scholarship to participate in the International Solid Waste Association-Solid Waste Institute for Sustainability (ISWA-SWIS) Winter School in June 2022, at The University of Texas at Arlington, Texas, USA, Nov 2021.
2021	Danielle Peltier, Hannah Patenaude, Kjersten Winkelman, Rachel Kawleski. First place, The Environmental Challenge, Air & Waste Management Association – Upper Midwest Section (AWMA-UMS) and Central States Water Environment Association (CSWEA) – Minnesota Section, Nov 2021.
2021	Biraj Saha. First place, Young Professional Poster Competition, Annual ND Water and Pollution Control Conference, Oct 2021.
2021	Ryan Anderson. Second place, Young Professional Poster Competition, Annual ND Water and Pollution Control Conference, Oct 2021.
2021	Himani Yadav. Third place, Young Professional Poster Competition, Annual ND Water and Pollution Control Conference, Oct 2021.
2021	Kira Eliason. First place, AWWA's Fresh Ideas Poster Competition, ND American Water Works Association, Annual ND Water and Pollution Control Conference, Oct 2021.
2021	Ryan Anderson. Top presenter, at NDSU EXPLORE in the Biological, Health Sciences and Biomedical Engineering Category, April 2021.

EDUCATION AND OUTREACH

July 13, 2022	United Tribes Technical College , Bismarck, ND. Twelve tribal high school students learned about the density separation of microplastics from sand.
June 02, 2022	Turtle Mountain Community College , Belcourt, ND. Hosted eight Turtle Mountain Community College (Belcourt, ND) pre-engineering students to talk about the group's research.
July 19, 2022	NDSU STEM Kids Camp , Fargo, ND. Five high school students learned FTIR spectroscopy for microplastics characterization.
June 01, 2022	NSF RET Program , Shane Alderman from Bishop Verot High School and Kim McVicar from West Fargo Sheyenne High School spent four summer weeks at Iskander Lab to work on landfill refuse microplastics.
June 10, 2021	NSF RET Program , Mike Dobberstein from Fargo North High School and Kim McVicar from West Fargo Sheyenne High School spent eight summer weeks at Iskander Lab to work on landfill leachate.

PROFESSIONAL MEMBERSHIP

- Air & Waste Management Association (AWMA)
- American Water Works Association (AWWA)
- Association of Environmental Engineering and Science Professors (AEESP)
- American Academy of Environmental Engineers & Scientists (AAEES)
- American Chemical Society (ACS)

CONFERENCE SESSION CHAIR/CO-CHAIR/ORGANIZER

- Session co-organizer and co-chair at the 2022 Intercontinental Landfill Research Symposium (ICLRS), Environmental Research and Education Foundation, Session title: Emerging contaminants.
- Session co-chair at the Association of Environmental Engineering and Science Professors (AEESP) 2022 conference, Session title: Resource Recovery from Wastes.

REVIEW ACTIVITY

- Grant and/or panel reviewer
 - United States Department of Agriculture (USDA)
 - National Science Foundation (NSF)
 - Environmental Research and Education Foundation (EREF)
 - University of Wisconsin Aquatic Sciences Center
- Reviewer: AEESP Student Services Committee Academic Job Application Review 2022.
- Reviewer of Journals: Environmental Science & Technology, Environmental Science & Technology Letters, Water Research, ACS ES&T Engineering, Journal of Hazardous Materials, Bioresource Technology, Desalination, Waste Management, Science of the Total Environment, Separation and Purification Technology, Journal of Environmental Engineering, Sustainable Energy & Fuels, Arabian Journal of Chemistry, Journal of Environmental Health Science and Engineering, Water Science and Technology, Environmental Science and Pollution Research, Process Safety and Environmental Protection, Water Environment Research, Bioresources and Bioprocessing, RSC Advances, Journal of Water Process Engineering, Water, Journal of the Air & Waste Management Association, Frontiers of Environmental Science and Engineering, PLOS ONE.