

SYEED MD ISKANDER, Ph.D., PE

Assistant Professor
 Department of Civil, Construction and Environmental Engineering
 North Dakota State University
 Address: 1410 North 14th Avenue, CIE 201N, Fargo, ND 58102
 E-mail: syeed.iskander@ndsu.edu; Phone: (701) 231-1716
 Personal Website: <https://syeedmdiskander.com/>

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:**
- 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, Ahsanullah University of Science and Technology, Bangladesh

RESEARCH INTERESTS

Municipal solid waste management, Plastics pollution, Landfilling, and Landfill leachate management.

ACADEMIC HONORS AND AWARDS

- 2019 First Place, flash talk, 1st annual Alpha Epsilon Honor Society Research Symposium, Virginia Tech
- 2019 Gold Award, oral presentation, 35th 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, 33rd 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
- 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.**

- 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! *ACS ES&T Water. Supplementary Cover*. <https://doi.org/10.1021/acsestwater.2c00216>
- 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. *Environmental Science: Water Research & Technology*, 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. *Frontiers in Bioengineering and Biotechnology*, 9, 206.
- 10** Golwala, H., Zhang, X., Iskander, S. M.*, Smith, A. L.*, 2021. Solid Waste: An Overlooked Source of Microplastics to the Environment. *Science of The Total Environment*, 769, 144581.
- 9** Xu, B., Iskander, S.M., He, Z.*, 2020. Dominant formation of unregulated disinfection by-products during electrocoagulation treatment of landfill leachate. *Environmental Research*, 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. *Journal of Hazardous Materials*, 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

Oral Presentations

- 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.

Poster Presentations

- Iskander, S.M. Early Career Showcase. Association of Environmental Engineering and Science Professors (AEESP) Conference, St. Louis, MO, June 2022.
- 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. Eighth annual CEE Research Day, Virginia Tech, VA, April 2018.

- Iskander, S.M., Novak, J.T., He, Z. Enhancing the recovery of humic acids from landfill leachate using forward osmosis and its application in the Fenton's oxidation of Benzene. 34th Graduate Student Assembly (GSA) Symposium, Virginia Tech, VA, March 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. Association of Environmental Engineering and Science Professors (AEESP) Conference, Ann Arbor, MI, June 2017.
- Iskander, S.M., Novak, J.T., Brazil, B., He, Z. Peroxygen oxidation towards understanding the ultraviolet quenchers transformation in landfill leachate. Borchardt Conference, Ann Arbor, MI, February 2017.
- Iskander, S.M., Novak, J.T., Brazil, B., He, Z. Recovery of organics and water from landfill leachate. WaterJam Conference, Virginia Beach, VA, September 2016.
- Iskander, S.M., Novak, J.T., Brazil, B., He, Z. Oxidation pretreatment of landfill leachate for enhanced electricity generation in a microbial fuel cell. Air and Waste Management Association (A&WMA) Conference, New Orleans, LA, June 2016.
- Iskander, S.M., Novak, J.T., Brazil, B., He, Z. Resource recovery from landfill leachate using bioelectrochemical systems. Sixth annual CEE Research Day, Virginia Tech, VA, April 2016.
- Zha, Q., Iskander, S.M., He, Z. Nitrification of landfill leachate for ammonia removal and effects of inhibiting factors on biomass growth. Sixth annual CEE Research Day, Virginia Tech, VA, April 2016.

TEACHING EXPERIENCE

North Dakota State University

Instructor of Record, Fall 2022

Course: Solid and Hazardous Waste Management

Responsibilities: 100% teaching responsibility

Student evaluation: TBD

Instructor of Record, Spring 2022

Course: Microbiological Principles for Environmental Engineers

Responsibilities: 100% teaching responsibility

Student evaluation: 4.44/5.0

Instructor of Record, Spring 2022

Course: Senior Design

Responsibilities: Environmental Engineering Consultant

Student evaluation: NA

Instructor of Record, Fall 2021

Course: Solid Waste Management

Responsibilities: 100% teaching responsibility

Student evaluation: 4.14/5.0

Instructor of Record, Spring 2021

Course: Introduction to Environmental Engineering

Responsibilities: 100% teaching responsibility

Student evaluation: 4.24/5.0

Virginia Tech

Instructor of Record, Fall 2018
 Course: Introduction to Environmental Engineering
 Responsibilities: 100% teaching responsibility
 Student evaluation: 4.80/6.00

Washington State University

Graduate Teaching Assistant, Fall 2013 – Spring 2015
 Courses: Water Resources Engineering, Hazardous Waste Engineering
 Responsibilities: Grading, homework preparation and assignment

Pedagogical Training

Peer Teaching Evaluation program, North Dakota State University, 2021

Teaching Certificate: Future Professoriate Certificate, Virginia Tech, 2018

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)	Non-recyclable municipal solid waste management.
Biraj Saha (06/21 – Present)	Concentrated landfill leachate treatment for the removal of emerging contaminants.
Himani Yadav (08/21 – 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 the United States Landfills.

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 MEMBER'S AWARDS AND HONORS

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

- **United Tribes Technical College:** The Iskander Research Group conducted an education and outreach activity at the United Tribes Technical College (UTTC), Bismarck, ND, on July 13, 2022. Twelve visiting tribal high school students learned about the density separation of microplastics from sand. This activity was a part of the ASPIRE Summer Camp program funded by the Department of Energy at UTTC.
- **Turtle Mountain Community College:** The group hosted eight Turtle Mountain Community College (Belcourt, ND) pre-engineering students to talk about the group's research on June 02, 2022. North Dakota EPSCoR supports the program under the title Nurturing American Tribal Undergraduate Research and Education (NATURE).
- **NDSU STEM Kids Camp:** The group hosted five high school students during the NDSU STEM Kids Camp on July 19, 2022. The high school students learned about the density separation of microplastics and FTIR spectroscopy for microplastics characterization.
- **NSF RET Program, 2022:** 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. Their work was supported by the National Science Foundation Research Experience for Teachers program.

- **NSF RET Program, 2021:** 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 the environmental impact of leachate leakage from a landfill. Their work was supported by the National Science Foundation Research Experience for Teachers program.

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

- Panel reviewer for United States Department of Agriculture (USDA).
- Grant reviewer for the Environmental Research and Education Foundation, University of Wisconsin Aquatic Sciences Center.
- 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.