

## 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](mailto: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	<b>Assistant Professor</b> , Department of Civil, Construction and Environmental Engineering, North Dakota State University
05/2019 – 07/2020	<b>Postdoctoral Research Associate</b> , Department of Civil and Environmental Engineering, University of Southern California
08/ 2015 – 05/2019	<b>Graduate Research Assistant</b> , Department of Civil and Environmental Engineering, Virginia Tech
08/2018 – 12/2018	<b>Instructor of Record</b> , Department of Civil and Environmental Engineering, Virginia Tech
08/2013 – 07/2015	<b>Graduate Teaching Assistant</b> , Department of Civil and Environmental Engineering, Washington State University
05/2012 – 07/2013	<b>Lecturer</b> , 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, 1 <sup>st</sup> annual Alpha Epsilon Honor Society Research Symposium, Virginia Tech
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- 2019 Gold Award, oral presentation, 35<sup>th</sup> 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<sup>rd</sup> 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

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- 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

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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

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### Oral Presentations

- 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. 35<sup>th</sup> 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. 33<sup>rd</sup> 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. 32<sup>nd</sup> Graduate Student Assembly (GSA) Symposium, Virginia Tech, VA, March 2016.

### Poster Presentations

- 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. 34<sup>th</sup> 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

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#### North Dakota State University

Instructor of Record, Spring 2022

Course: Microbiological Principles for Environmental Engineers

Responsibilities: 100% teaching responsibility

Student evaluation: TBD

Instructor of Record, Fall 2021

Course: Solid Waste Management

Responsibilities: 100% teaching responsibility

Student evaluation: 4.14/5.00

Instructor of Record, Spring 2021

Course: Introduction to Environmental Engineering

Responsibilities: 100% teaching responsibility

Student evaluation: 4.24/5.00

### **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**

**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**

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#### **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.

**REVIEW ACTIVITY**

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- Panel reviewer for United States Department of Agriculture
- 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.