Aurora del Carmen Munguia Lopez

Assistant Professor, Department of Chemical and Biological Engineering
University at Buffalo, The State University of New York
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EDUCATION

Ph.D. in Chemical Engineering (Process Systems Engineering), 2021
University of Michoacan, Michoacan, Mexico

M.Sc. in Chemical Engineering, 2017
Technical Institute of Celaya, Guanajuato, Mexico

B.Sc. in Chemical Engineering, 2014
Technical Institute of Celaya, Guanajuato, Mexico

APPOINTMENTS

University at Buffalo (UB), The State University of New York (SUNY), Department of Chemical and Biological Engineering (CBE)
Assistant Professor. September 2024 - Present
UB RENEW (Research and Education in eNergy, Environment and Water)
Faculty Affiliate. February 2025 - Present
UB Institute for Artificial Intelligence and Data Science
Faculty Affiliate. August 2025 - Present

University of Wisconsin-Madison, Department of Chemical and Biological Engineering
Research Associate at Scalable Systems Laboratory. January 2022 - August 2024

University of Wisconsin-Madison, Department of Chemical and Biological Engineering
Visiting Research Scholar at Scalable Systems Laboratory. August 2018 - July 2019

FMC Corporation, Agrochemical Complex, Mexico
Engineering Intern. September 2014 - July 2015

Technical Institute of Celaya, Language Center
English as a Second Language Teacher (Part-Time). August 2013 - July 2015

University of San Luis Potosi, Department of Chemical Engineering
Summer Research Intern. June 2013 - July 2013

PUBLICATIONS (* denotes corresponding author)

Citation counts and impact factors via Google Scholar: 416 citations, h-index = 12, i10-index = 14 (as of 09/09/2025)

[1] **A.C. Munguia-Lopez***, X.G. Sanchez-Zarco, and A. Owusu-Boateng (2025). **Process Systems Engineering Approaches for Sustainable Plastics Management.** *Industrial & Engineering Chemistry Research.* 64, 13519-13535. *Selected as Front Cover.* [link]

[2] U.M. Ikegwu, P. Zhou, R.C. Van Lehn, V.M. Zavala, and **A.C. Munguia-Lopez*** (2025). **A Fast Computational Framework for the Design of Solvent-Based Plastic Recycling Processes.** *Computers & Chemical Engineering*, 199, 109148. [link]

[3] U.M. Ikegwu, **A.C. Munguia-Lopez**, V.M. Zavala, and R.C. Van Lehn* (2025). **Screening Green Solvents for Multilayer Plastic Film Recycling Processes.** *Computers & Chemical Engineering*, 199, 109129. [link]

[4] Z. Xu, K.L. Sanchez-Rivera, C. Granger, P. Zhou, **A.C. Munguia-Lopez**, U.M. Ikegwu, S. Avraamidou, V.M. Zavala, R.C. Van Lehn, E. Bar-Ziv, S. De Meester, and G.W. Huber* (2025). **A Review of Solvent-based Plastic Recycling Technologies.** *Nature Chemical Engineering.* 2 (7), 407-423. [link]

[5] P.A. Munoz Briones, **A.C. Munguia-Lopez**, K.L. Sanchez-Rivera, and S. Avraamidou* (2025). **Integrated Decision-Making Approach for the Simultaneous Design of Food Packaging and Waste Management Technologies to Achieve a Circular Economy.** *Computers & Chemical Engineering*, 202, 109269. [link]

[6] H.A. Aguirre-Villegas*, S.L., Bradshaw, C. Benson, **A.C. Munguia-Lopez**, V.M. Zavala, M. Mba Wright, S. Avraamidou, O. Olafasakin, and G.W. Huber (2024). **Assessing the Depletion of Fossil Fuels and Greenhouse Gas Emissions**

from Energy Consumption of Material Recovery Facilities (MRFs) in the United States. Under Review. *Preprint available at SSRN 4807229, 2024* [link]

[7] J. Yu, **A.C. Munguia-Lopez**, V.S. Cecon, K.L. Sanchez-Rivera, K. Nelson, S. Kolapkar, V.M. Zavala, K.L. Vorst, E. Bar-Ziv, and G.W. Huber* (2023). **High-Purity Polypropylene from Disposable Face Masks via Solvent-Targeted Recovery and Precipitation.** *Green Chemistry*, 25(12): 4723-4734. [link]

[8] K.L. Sanchez-Rivera, **A.C. Munguia-Lopez**, P. Zhou, V.S. Cecon, J. Yu, K. Nelson, D. Miller, S. Grey, Z. Xu, E. Bar-Ziv, K.L. Vorst, G. Curtzwiler, R.C. Van Lehn, V.M. Zavala, and G.W. Huber* (2023). **Recycling of a Post-Industrial Printed Multilayer Plastic Packaging Film containing Polyurethane Inks by Solvent-Targeted Recovery and Precipitation.** *Resources, Conservation and Recycling*, 197, 107086. [link]

[9] **A.C. Munguia-Lopez**, D. Go¨reke, K.L. Sanchez-Rivera, H.A. Aguirre-Villegas, S. Avraamidou, G.W. Huber, and V.M. Zavala* (2023). **Quantifying the Environmental Benefits of a Solvent-Based Separation Process for Multilayer Plastic Films.** *Green Chemistry*, 25(4):1611-25. [link]

[10] R. Ochoa-Barragan, **A.C. Munguia-Lopez***, and J.M. Ponce-Ortega (2023). **A Hybrid Machine Learning-Mathematical Programming Optimization Approach for Municipal Solid Waste Management During the Pandemic.** *Environment, Development and Sustainability*, 1-20. [link]

[11] R. Ochoa-Barragan, **A.C. Munguia-Lopez***, and J.M. Ponce-Ortega (2023). **Strategic Planning for the Optimal Distribution of COVID-19 Vaccines.** *Socio-Economic Planning Sciences*, 87, 101559. [link]

[12] **A.C. Munguia-Lopez***, R. Ochoa-Barragan, and J.M. Ponce-Ortega (2022). **Optimal Waste Management during the COVID-19 Pandemic.** *Chemical Engineering and Processing - Process Intensification* , 176, 108942. *Selected as cover of the issue.* [link]

[13] B. Cansino-Loeza, **A.C. Munguia-Lopez**, and J.M. Ponce-Ortega* (2022). **A Water-Energy-Food Security Nexus Framework Based on Optimal Resource Allocation.** *Environmental Science & Policy*, 133, 1-16. [link]

[14] C. Ramirez-Marquez, **A.C. Munguia-Lopez**, M. Martin, J.G. Segovia-Hernandez, and J.M. Ponce-Ortega* (2022). **Optimal Design of a Solar-Grade Silicon Refinery Incorporating a Fairness Approach.** *Chemical Engineering Research and Design*, 186, 25-36. [link]

[15] R. Ochoa-Barragan, **A.C. Munguia-Lopez**, and J.M. Ponce-Ortega* (2021). **Use of Mathematical Approaches for Addressing COVID 19 Pandemic – A Critical Review.** *Process Integration and Optimization for Sustainability* , 5, 755–775. [link]

[16] D.J. Cruz-Aviles, **A.C. Munguia-Lopez**, and J.M. Ponce-Ortega* (2021). **Optimal Design of Water Networks in Eco-Industrial Parks Incorporating a Fairness Approach.** *Industrial & Engineering Chemistry Research* , 60(24), 8844–8860. [link]

[17] **A.C. Munguia-Lopez**, A.F. Sanchez-Bautista, M.M. El-Halwagi, and J.M. Ponce-Ortega* (2021). **Strategic Planning of an Integrated Fuel Production System with a Fair-Sustainable Approach.** *ACS Sustainable Chemistry & Engineering*, 9 (14), 5116-5127. [link]

[18] **A.C. Munguia-Lopez** and J.M. Ponce-Ortega* (2021). **Fair Allocation of Potential COVID-19 Vaccines Using an Optimization-Based Strategy.** *Process Integration and Optimization for Sustainability*, 5, 3–12. [link]

[19] **A.C. Munguia-Lopez**, J.M. Nuñez-Lopez, and J.M. Ponce-Ortega* (2020). **Identifying Fair Solutions in the Optimal Design of Integrated Residential Complexes.** *Chemical Engineering and Processing-Process Intensification*, 157, 108116. [link]

[20] **A.C. Munguia-Lopez**, V.M. Zavala, J.E. Santibañez-Aguilar, and J.M. Ponce-Ortega* (2020). **Optimization of Municipal Solid Waste Management Using a Coordinated Framework.** *Waste Management*, 115, 15-24. [link]

[21] M. Juarez-Garcia, **A.C. Munguia-Lopez**, and J.M. Ponce-Ortega* (2020). **Optimization Approach to Identify Fair Solutions in the Synthesis of Carbon, Hydrogen, and Oxygen Symbiosis Networks.** *Industrial & Engineering Chemistry Research*, 59, 13, 5985-5995. [link]

[22] **A.C. Munguia-Lopez**, A.M. Sampat, E. Rubio-Castro, J.M. Ponce-Ortega, and V.M. Zavala* (2019). **Fairness-Guided Design of Water Distribution Networks for Agricultural Lands.** *Computers & Chemical Engineering* , 130, 106547. [link]

[23] **A.C. Munguia-Lopez**, R. Gonzalez-Bravo, and J.M. Ponce-Ortega* (2019). **Evaluation of Carbon and Water Policies in the Optimization of Water Distribution Networks Involving Power-Desalination Plants.** *Applied Energy*, 236, 927-936. [link]

[24] **A.C. Munguia-Lopez**, V. Rico-Ramirez, and J.M. Ponce-Ortega* (2018). **Analysis of Carbon Policies in the Optimal Integration of Power Plants Involving Chemical Looping Combustion with Algal Cultivation Systems.** *ACS Sustainable Chemistry & Engineering*, 6, 4, 5248-5264. [link]

BOOKS

[1] J.M. Ponce-Ortega, R. Ochoa-Barragan, C. Ram´ırez-Ma´rquez, J. Ezequiel Santibanez-Aguilar, and **A.C. Munguia-Lopez** (2025). **Solid Waste Management: Navigating from Fundamentals to Innovation.** (1st ed.). CRC Press. [link]

CONFERENCE PUBLICATIONS AND BOOK CHAPTERS (PEER-REVIEWED)

[1] **A.C. Munguia-Lopez**, P. Zhou, U.M. Ikegwu, R.C. Van Lehn, and V.M. Zavala (2024). **A Fast Computational Framework for the Design of Solvent-Based Plastic Recycling Processes.** In *Proceedings of Foundations of Computer Aided Process Design (FOCAPD).* Systems & Controls Transactions, 3, 814-819. [link]

[2] P.A. Munoz Briones, **A.C. Munguia-Lopez**, K.L. Sa´nchez-Rivera, V.M. Zavala, G.W. Huber and S. Avraamidou (2024). **Optimal Design of Food Packaging Considering Waste Management Technologies to Achieve Circular Economy.** In *Proceedings of FOCAPD*. Systems & Controls Transactions, 3, 820-828. [link]

[3] L. Gonzalez, C. Mills, **A.C. Munguia-Lopez**, and V.M. Zavala (2024). **Sustainable Production of Fertilizers Via the Photosynthetic Recovery of Nutrients in Livestock Waste.** In *Proceedings of FOCAPD* . Systems & Controls Transactions, 3, 744-749. [link]

[4] E. Chialdikas, **A.C. Munguia-Lopez**, H. Aguirre-Villegas, and S.A. Avraamidou (2023). **A Framework for the Evaluation of the Circularity of Plastic Waste Management Systems: A Case Study on Mechanical Recycling of HDPE.** In *Proceedings of Foundations of Computer-Aided Process Operations and Chemical Process Control (FOCAPO/CPC).* [link]

[5] **A.C. Munguia-Lopez**, V.M. Zavala, and J.M. Ponce-Ortega (2023). **Municipal Solid Waste Management Using a Coordinated Market Framework.** In *Proceedings of FOCAPO/CPC*. [link]

[6] **A.C. Munguia-Lopez**, A.F. Sanchez-Bautista, M.M. El-Halwagi, and J.M. Ponce-Ortega (2022). **A Fair-Sustainable Approach for the Optimization of an Integrated Fuel Production System.** In *Computer Aided Chemical Engineering*. Vol. 51, pp. 1591-1596. Elsevier. [link]

[7] B. Cansino-Loeza, **A.C. Munguia-Lopez**, and J.M. Ponce-Ortega (2022). **Optimizing the Allocation of Resources for the Security of the Water-Energy-Food Nexus.** In *Computer Aided Chemical Engineering* . Vol. 51, pp. 1579-1584. Elsevier. [link]

[8] **A.C. Munguia-Lopez**, V.M. Zavala, J.E. Santibañez-Aguilar, and J.M. Ponce-Ortega (2021). **A Coordinated Framework for the Optimization of Municipal Solid Waste Management.** In *Computer Aided Chemical Engineering* , Vol. 50, pp. 1409-1414. Elsevier. [link]

[9] **A.C. Munguia-Lopez** and J.M. Ponce-Ortega (2020). **Carbon Policies for Reducing Emissions in Power Plants through an Optimization Framework.** In *Advances in Carbon Management Technologies*, pp. 119-131. CRC Press.

TECHNICAL PRESENTATIONS (Presentations by undergraduate advisees are underlined)

[1] **UB Undergraduate Research Conference**, Buffalo, NY USA, July 2025. *"Understanding Recycling Patterns for Infrastructure Planning"* [link]

[2] **UB Undergraduate Research Conference**, Buffalo, NY USA, July 2025. *"Planetary Scale Evaluation of Plastic Recycling Facilities Using the Earth System Impact Metric"* [link]

[3] **Plastics In Composites and Lightweighting 2025, SPE Flexible Packaging Division**, Online, June 2025. *"Systems Engineering Approaches for Sustainable Plastic Management"* [link]

[4] **FlexPackCon 2025, SPE Flexible Packaging Division**, Fairport, NY USA, May 2025. *"Systems Engineering Approaches for Sustainable Plastic Management"* [link]

[5] **UB Celebration of Academic Excellence**, Buffalo, NY USA, April 2025. *"Assessing the Economic and Environmental Benefits of Technology and Policy Pathways for Plastic Recycling in the U.S."* [link]

[6] **2024 AIChE Annual Meeting**, San Diego, CA, USA, October 2024. *"A Fast Computational Framework for the Design of Sustainable Solvent-Based Plastic Recycling Processes"*

[7] **FOCAPD 2024**, Breckenridge, CO, USA, July 2024. *"A Fast Computational Framework for the Design of Solvent-Based Plastic Recycling Processes"*

[8] **2024 Chemical Upcycling of Waste Plastics (CUWP) Annual Meeting**, Madison, WI, USA, May 2024. *"A Fast Computational Framework for the Design of Solvent-Based Plastic Recycling Processes"*

[9] **2023 AIChE Annual Meeting**, Orlando, FL, USA, November 2023. *"Evaluating the Environmental Impacts of Fertilizer Production Using Photosynthetic Recovery of Nutrients in Livestock Waste"*

[10] **2023 AIChE Annual Meeting**, Orlando, FL, USA, November 2023. *"Achieving Social and Economic Justice Via Deployment of Plastic Waste Upcycling Technologies"*

[11] **2023 AIChE Annual Meeting**, Orlando, FL, USA, November 2023. *"On the Interplay of Food Packaging Design and Food Supply Chain Sustainability"*

[12] **2023 Chemical Upcycling of Waste Plastics (CUWP) Annual Meeting**, Madison, WI, USA, May 2023. *"Achieving Social and Economic Justice Via Deployment of Plastic Waste Upcycling Technologies"*

[13] **FOCAPO/CPC 2023**, San Antonio, TX, USA, January 2023. *"Municipal Solid Waste Management Using a Coordinated Market Framework"*

[14] **2022 AIChE Annual Meeting**, Phoenix, AZ, USA, November 2022. *"Environmental Benefits of the Solvent-Targeted Recovery and Precipitation (STRAP) Process for Multilayer Plastic Films Recycling"*

[15] **2022 AIChE Annual Meeting**, Phoenix, AZ, USA, November 2022. *"Optimization of the Solvent-Targeted Recovery and Precipitation (STRAP) Process for Multilayer Plastic Recycling"*

[16] **2022 AIChE Annual Meeting**, Phoenix, AZ, USA, November 2022. *"Recycling of Plastic Wastes By Solvent-Targeted Recovery and Precipitation"*

[17] **UW–Madison Sustainability Symposium**, Madison, WI, USA, October 2022. *"Environmental Benefits of the STRAP Process for Multilayer Plastic Films"*

[18] **2022 Chemical Upcycling of Waste Plastics (CUWP) Annual Meeting**, Madison, WI, USA, June 2022. *"Environmental Benefits of the STRAP Process for Multilayer Plastic Films"*

[19] **32nd European Symposium on Computer Aided Process Engineering (ESCAPE-32)**, Toulouse, France, June 2022. *"A Fair-Sustainable Approach for the Optimization of an Integrated Fuel Production System"*

[20] **32nd European Symposium on Computer Aided Process Engineering (ESCAPE-32)**, Toulouse, France, June 2022. *"Optimizing the Allocation of Resources for the Security of the Water-Energy-Food Nexus"*

[21] **2021 AIChE Annual Meeting**, USA, November 2021 (Virtually). *"A Fair-Sustainable Approach for the Optimal Planning of an Integrated Fuel Production System"*

[22] **31st European Symposium on Computer Aided Process Engineering (ESCAPE-31)**, Istanbul, Turkey, June 2021 (Virtually). *"A Coordinated Framework for the Optimization of Municipal Solid Waste Management"*

[23] **2020 AIChE Annual Meeting**, USA, November 2020 (Virtually). *"Fair Solutions for the Optimal Design of Integrated Residential Complexes"*

[24] **2020 AIChE Annual Meeting**, USA, November 2020 (Virtually). *"Municipal Solid Waste Management Optimization through a Coordinated Market Framework"*

[25] **2019 AIChE Annual Meeting**, Orlando, FL, USA, November 2019. *"Analysis of Carbon and Water Policies in the Optimal Design of Water Distribution Networks Involving Power-Desalination Plants"*

[26] **2019 AIChE Annual Meeting**, Orlando, FL, USA, November 2019. *"Fairness-Guided Design of Water Distribution Systems for Agricultural Lands"*

[27] **Wisconsin Workshop on Organic Waste (WWOW)**, Madison, WI, USA, May 2019. *"Fair Allocations of Wealth in Agricultural Systems"*

[28] **2018 AIChE Annual Meeting**, Pittsburgh, PA, USA, November 2018. *"A Mathematical Programming Model for the Integration of Power Plants Involving Chemical Looping Combustion with Algal Systems under Carbon Policies Analysis"*

INVITED TALKS

[1] **Exploring the Economic and Environmental Benefits of Novel Technologies for Different Types of Hard-to-Recycle Plastics**. At the "Seminar Series" of the Department of Chemical Engineering at the University of Guanajuato (Virtually). Mexico, February 2025.

[2] **Systems Engineering Approaches for Sustainable Plastic Management**. At the "Fourth Symposium on Process Intensification Challenges and Opportunities: Towards Sustainable Chemical Processes in the XXI Century", jointly hosted by the University of Guanajuato (Mexico) and the "Chemical Engineering and Processing: Process Intensification" Journal (Elsevier). Virtually, January 2025.

[3] **Systems Engineering Approaches for Sustainable Plastic Management**. At the "Environmental Engineering Seminar Series" of the Department of Civil, Structural and Environmental Engineering at the University at Buffalo, The State University of New York. Buffalo, NY, USA, November 2024.

[4] **Sustainable Production of Fertilizers Via the Photosynthetic Recovery of Nutrients in Livestock Waste**. At the "FOCAPD 2024 Conference", Best Paper Winner, Breckenridge, CO, USA, July 2024.

[5] **Tutorial on Life Cycle Assessment**. At the NSF-funded "Workshop on Formulation Science and Engineering for the Common Good" Arlington, VA, USA, May 2024.

[6] **Process Design/Simulation and Techno-Economic Analysis**. At the "2024 Chemical Upcycling of Waste Plastics (CUWP) Short Course", Madison, WI, USA, May 2024.

[7] **Environmental Impact Assessment I**. At the "2024 Chemical Upcycling of Waste Plastics (CUWP) Short Course", Madison, WI, USA, May 2024.

[8] **Exploring the Economic and Environmental Benefits of Novel Technologies for Hard-to-Recycle Plastics**. At the "Seminar Series" of the Department of Chemical Engineering at the University of Michoacan (Virtually). Mexico, April 2024.

[9] **Systems Engineering Approaches for Sustainable Plastic Management**. At the "Great Lakes Process Systems Engineering Student Workshop" Hosted at the University at Buffalo, The State University of New York. Buffalo, NY, USA, April 2024.

[10] **Exploring the Economic and Environmental Benefits of Solvent-Based Recycling Processes of Multi-Layer Plastic Films**. At the "ChEGS student seminar" of the Department of Chemical and Biological Engineering at the University at Wisconsin-Madison, Madison, WI, USA, December 2023.

[11] **Exploring the Economic and Environmental Benefits of Solvent-Based Recycling Processes of Multi-Layer Plastic Films**. At the "LatinX Voices in ChE session", Best Presentation Winner, 2023 AIChE Annual Meeting, Orlando, FL, USA, November 2023.

[12] **Exploring the Economic and Environmental Benefits of Solvent-Based Recycling Processes of Multi-Layer Plastic Films**. At the "Spring 2023 Seminar Series" of the Department of Chemical and Biological Engineering at the University at Buffalo, The State University of New York. Buffalo, NY, USA, April 2023.

[13] **Systems Engineering Tools for the Separation and Recycling of Multi-Layer Plastic Films**. At the "National ChemE Future Faculty Seminar Series", jointly hosted by the University of Pennsylvania, Texas Tech and the University of Michigan (Virtually). USA, October 2022.

[14] **Environmental Analysis of the Solvent-Targeted Recovery and Precipitation (STRAP) Process for the Recycling of Multilayer Plastic Films**. At the "Wisconsin Computing in Engineering Forum 2022". Organized by the College of Engineering at University of Wisconsin-Madison (Virtually). USA, September 2022.

[15] **Process Optimization: Applications Including Carbon Policies, Fairness Approaches, and Coordinated Schemes**. At the "Symposium of Applied Optimization to the Chemical Engineering" (Virtually). Mexico, June 2021.

[16] **Fair and Optimum Allocation of COVID-19 Vaccines**. At the "Seminar Series" of the Department of Chemical Engineering at the University of Michoacan (Virtually). Mexico, April 2021.

TEACHING EXPERIENCE

Lecturer

- CE 400/500 - Special Topics (Sustainable Engineering). At the Department of Chemical and Biological Engineering at the University at Buffalo. Fall 2025.
- CE 434 - Chemical Systems and Control (co-teaching). At the Department of Chemical and Biological Engineering at the University at Buffalo. Spring 2025.

Guest Lecturer

- CE 404 - Chemical Engineering Product Design. At the Department of Chemical and Biological Engineering at the University at Buffalo. Fall 2025.
- CE 498 - Undergraduate Research and Creative Activity. At the Department of Chemical and Biological Engineering at the University at Buffalo. Fall 2024.
- CE 452 - Petroleum Engineering. At the Department of Chemical and Biological Engineering at the University at Buffalo. Fall 2023 & 2024.

- CBE 562 - Technology for Plastic Recycling. At the Department of Chemical and Biological Engineering at the University of Wisconsin-Madison. Fall 2022 & 2023.
- CBE 750 - Advanced Chemical Process Synthesis and Optimization. At the Department of Chemical and Biological Engineering at the University of Wisconsin-Madison. Spring 2023.

RESEARCH SUPPORT

- "Assessing the Economic and Environmental Benefits of Technology and Policy Pathways for Plastic Recycling in the U.S.". *SUNY-funded Research and Creative Activities for Undergraduates Program.* **$20,920** to support two students ($10,460 per student). Spring and Summer 2025. [link]

RESEARCH MENTORING

- **Postdoctoral (Department and Institution)**
  1. Xate Geraldine Sanchez-Zarco (CBE, University at Buffalo, The State University of New York), 2024 - Present
- **Doctoral (Department and Institution)**
  1. Abdulganiyu Ajalogun (CBE, University at Buffalo, The State University of New York), 2025 - Present
- **Masters (Department and Institution)**
  1. Rogelio Ochoa-Barragan (Chemical Engineering, University of Michoacan). *Co-advised, received an award for outstanding thesis).* 2020 - 2022
- **Undergraduate (Department/Program and Institution)**
  1. Michael Georger (Mechanical and Aerospace Engineering and Computer Science Minor, University at Buffalo, The State University of New York). *Funded by the NSF data science summer internship program.* Summer 2025
  2. Jean Koki (Computer Science, University at Buffalo, The State University of New York). *Funded by the Summer Undergraduate Research Program (SURP) at the University at Buffalo.* Summer 2025
  3. G´enesis M. Moreno Aguila (Research Experience for Undergraduates (REU) Program at University at Buffalo, The State University of New York). Summer 2025
  4. Matthew Bablin (CBE, University at Buffalo, The State University of New York). *Funded by the SUNY Research and Creative Activities for Undergraduates Program.* 2025 - Present.
  5. Will Reid (CBE, University at Buffalo, The State University of New York). *Funded by the SUNY Research and Creative Activities for Undergraduates Program.* 2025 - Present.
  6. Cassidy Shafer (CBE, University at Buffalo, The State University of New York), 2025 - Present
  7. Grace Lebron (REU Program at University at Buffalo, The State University of New York). Summer 2024
  8. Celeste Mills (REU Program at University of Wisconsin-Madison), Summer 2023
  9. Virginia Lilly (Undergraduate Research Scholars (URS) Program at University of Wisconsin-Madison), September 2022 - September 2023
  10. Shreyanshu Dekate (URS Program at University of Wisconsin-Madison), September 2022 - September 2023

GRADUATE STUDENT COMMITTEES

1. Victor Osvaldo Vega Muratalla (Ph.D. Program, University of Michoacan), 2024 - Present
2. Rogelio Ochoa-Barragan (Ph.D. Program, University of Michoacan), 2022 - Present

PROFESSIONAL SERVICE

- **Academic Service**
  - AIChE Environmental Division Student Paper Awards Committee member, May 2025 - Present
  - AIChE Environmental Division Webinar Committee member, February 2025 - Present

- Session Co-chair 1st SUSTENS Meeting (online), 2025
- Session Co-Chair AIChE Annual Meeting, 2025 (Computing & Systems Technology Division)
- Session Co-Chair AIChE Annual Meeting, 2025 (Environmental Division)
- Session Co-Chair AIChE Annual Meeting, 2024 (Computing & Systems Technology Division)
- Session Co-Chair AIChE Annual Meeting, 2024 (Environmental Division)
- Poster session judge for AIChE Annual Meeting, 2023 (undergraduate)
- Session Co-Chair AIChE Annual Meeting, 2023 (Environmental Division)
- Poster session judge for AIChE Annual Meeting, 2022 (undergraduate)

- **University Service**
  - Instructor for UB Chemical Engineering Summer Camp (week-long camp for high-school juniors and seniors) session on quantifying environmental impacts in chemical engineering (90 min of activities), 2025
  - EAS 202 Faculty Mentor Lecture Event and Follow-Up Mentoring, 2025
  - Member, ABET SO7 Taskforce, 2024
  - UB CBE AIChE Recruitment Fair volunteer, 2024
  - Co-organizer for the annual CBE Graduate Research Symposium, 2024
  - Judge for graduate poster presentations at the annual CBE Graduate Symposium, 2024

- **Peer Review**
  - ACS Sustainable Chemistry & Engineering (American Chemical Society)
  - Environmental Science and Policy (Elsevier)
  - Environmental Management (Springer)
  - Sustainable Production and Consumption (Elsevier)
  - Risk Analysis (Wiley)
  - Latin American Applied Research
  - Frontiers in Digital Health (Frontiers)
  - Environment, Development and Sustainability (Springer)
  - Chemical Engineering and Processing - Process Intensification
  - Process Integration and Optimization for Sustainability
  - Cleaner Waste Systems (Elsevier)
  - ACS ES&T Water (American Chemical Society)
  - Resources, Conservation and Recycling (Elsevier)
  - Computers & Chemical Engineering (Elsevier)
  - Journal of Cleaner Production (Elsevier)
  - Industrial & Engineering Chemistry Research (American Chemical Society)
  - Chemical Engineering Research and Design (Elsevier)

- **Review Panels**
  - 1 proposal review for the Environmental Research and Education Foundation (EREF), 2025
  - 1 proposal review for the Dutch Research Council, 2025
  - 1 NSF Graduate Research Fellowship Program (GRFP) review panel, 2025
  - 2 NSF proposal review panels, 2024 - 2025
  - LatinXinChE Virtual Symposium judge, 2023 - 2025
  - LatinXChem Twiter Conference judge, 2023 - 2024
  - Mexican Academy of Applied Optimization in Chemical Engineering (AMOAIQ) review committee, 2022

- **Book Chapters Reviews**
  - "Current and Projected Trends in Plastic Production and Use Globally" for the book "Plastic Wastes: Ecosystem Impacts, Health Aspects and Issues, and Remediation Strategies" to be published by John Wiley Publishers.

OUTREACH

- **Process Systems Engineering (PSE) in Mexico Workshop Instructor**, University of Puebla, August 2024. [link]
- **Chemical Upcycling of Waste Plastics (CUWP) center: Online Presentation**, Wisconsin Council on Recycling, February 2024. [link]
- **Rethinking Recycling: Hard-to-Recycle Plastics and the Path Forward Panel Participant**, Wisconsin Energy Institute, January 2024. [link]

- **Cafe with LatinX in ChE Panel Participant**, AIChE, November 2023.
- **Co-authored Fact Sheet about Solvent-Based Recycling of Plastic Films**, April 2023. [link]
- **Women in Power Career Panel and Podcast Participant**, Wisconsin Energy Institute, April 2023.[link A][link B]
- **Engineering EXPO Volunteer and Exhibit Organizer**, University of Wisconsin–Madison, April 2023
- **Badger Buddies Senior Mentoring Program**, University of Wisconsin-Madison, March 2023 - Present
- **Engineering EXPO Volunteer**, University of Wisconsin–Madison, April 2022
- **Diversity Officer of Scalable Systems Laboratory**, University of Wisconsin–Madison, January 2022 - Present
- **Head of Student Association**, Technical Institute of Celaya, August 2011 - August 2013

SELECTED AWARDS

- **FOCAPD 2024 Best Paper Winner**, FOCAPD and AIChE. USA, Jul 2024.
- **2023 Minority Affairs Community's Janice Lumpkin Travel Award**, AIChE. USA, Nov 2023.
- **Young Researcher Travel Grant Award**, FOCAPO/CPC 2023. USA, Jan 2023.
- **Best Poster Presentation Award**, CUWP Annual Meeting. USA, May 2022.
- **Medalla Dr. Ignacio Chavez Sanchez: Award for outstanding doctoral thesis**, Universidad Michoacana de San Nicolas de Hidalgo. Mexico, December 2021.
- **Best Presentation Award**, Symposium of Applied Optimization to the Chemical Engineering. Mexico, June 2021.
- **Best GPA Award: M.Sc. in Chemical Engineering**, Instituto Tecnologico de Celaya. Mexico, June 2017.
- **Best GPA Award: B.Sc. in Chemical Engineering**, Instituto Tecnologico de Celaya. Mexico, December 2014.
- **English as a Second Language (ESL) Certificate**, Texas International Education Consortium. USA, December 2014.

PROFESSIONAL DEVELOPMENT

- **Faculty Launch & Mentoring Program (FLMP) Fellow**, School of Engineering and Applied Sciences, UB SUNY, 2025.
- **Emerging Researchers National (ERN) Conference in STEM**, Mentoring Sessions, Washington, D.C., March 2024.
- **Entering Mentoring & Culturally Aware Mentoring**, University of Wisconsin-Madison, January 2024.
- **Preparing Future Faculty Workshop**, Auburn University (Virtually), September 2022.
- **New England Future Faculty Workshop**, Northeastern University (Virtually), June 2022.
- **AIChE PEAK Program - Improving Gender Diversity and Inclusion**, AIChE Insitute for Learning & Innovation (Virtually), January 2022.
- **Introduction to Statistics: From Data to Knowledge to Decisions**, University of Guanajuato (Virtually), January 2021.
- **Master Workshop: How to Successfully Publish in High Impact Factor Journals**, University of Guanajuato (Virtually), October 2021.
- **Stochastic Programming Workshop: Formulations, Algorithms, and Applications**, University of Wisconsin-Madison, August 2018.