Anjali Mulchandani, Ph.D.

1 University of New Mexico, MSC01 1070 Civil Engineering,
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EDUCATION

Postdoc, Environmental Engineering, Stanford University (**2020**)
Ph.D., Environmental Engineering, Arizona State University (**2020**)
Dissertation: Thermally driven technologies for atmospheric water capture to provide decentralized drinking water
M.S., Environmental Engineering, Arizona State University (**2016**)
Thesis: Recovery opportunities for metals and energy from sewage sludges
B.S., Civil Engineering (Environmental Engineering & Hydrology Concentrations), University of California, Los Angeles (UCLA) (**2014**)

APPOINTMENTS

Assistant Professor, University of New Mexico, Civil Construction, Environmental Engr, **2021 –**
Postdoctoral Research Fellow, Stanford University, Civil and Environmental Engineering, **2020**
Graduate Research Assistant, ASU School of Sustainable Engr and Built Env, **2014 – 2020**
Assistant Engineer, Hazen and Sawyer, Tempe AZ, **2017**
Undergraduate Research Assistant, UCLA Civil and Environmental Engineering, **2012-2014**
Undergraduate Research Assistant, UCLA David Geffen School of Medicine, **2009-2010**
Undergraduate Research Assistant, Univ of California Riverside, Chemical Engr, **2008-2010**

AWARDS and HONORS

UNM School of Engineering Junior Faculty Teaching Excellence Award, **2022**
UNM ADVANCE Women in STEM Award, **2021**
ASU Engineering Dean's Dissertation Award, **2019**
National Science Foundation Graduate Research Fellowship (GRFP), **2016-2019**
National Science Foundation ACADEME Fellow, **2019**
Sustainable Nanotechnology Organization (SNO) Student Award, **2019** ($500)
American Chemical Society Environmental Chemistry Division Graduate Service Fellow, **2017**
AZ Water Association Scholarship, **2017** ($1000)
ASU Fulton Schools of Engineering Dean's Fellowship, **2014-2016**
Travel Award from ASU Graduate and Professional Student Association, **2015**, **2017, 2018** ($950)
1st place, AZ Water Young Professionals Fresh Ideas Competition, May **2016**
1st place, Poster Competition, ASU SSEBE Graduate Research Symposium, **2016**
1st place, Poster Competition, AZ Water Research Workshop **2016**
1st Place, Nano Pitch Competition (100 second elevator pitch), SNO Conference **2015**
1st Place, Young Professionals Poster Competition, AWWA CA/NV **2014** Conference
2nd place, Association for Environmental Engineering and Science Professors **2018** Student Video Competition (The Value of Water)
2nd place, AZ Water Research Symposium **2018**
3rd place, Poster Competition, SNO Conference **2019**

PUBLICATIONS

Peer-Reviewed Refereed Journal Articles, *Corresponding author, Student/postdoc I mentored

1. **Mulchandani, A.***, Edberg, J., Herckes, P., and Westerhoff, P. Seasonal atmospheric water harvesting yield and water quality using electric-powered desiccant and compressor dehumidifiers. *Science of the Total Environment,* **2022,** *825,* 153966.
2. **Mulchandani, A.**, Edberg, J., Malinda, S., and Westerhoff, P. Sunlight driven atmospheric water capture is enhanced by photothermal nanomaterial enabled desiccants. *Environmental Science: Nano*, **2020,** *7(9)*, 2584-2594**. Selected as ES:Nano HOT article.**
3. **Mulchandani, A.*** and Westerhoff, P. Geospatial climatic factors influence production yields of solar desiccant driven atmospheric water capture. *Environmental Science & Technology*, **2020**, *54 (13),* 8310-8322**.**
4. **Mulchandani, A.***, Atkinson, A., Garcia-Segura, S., and Westerhoff, P. Nano-blocks: A playful method to learn about nanotechnology-enabled water and air treatment. *Journal of Chemical Education*, **2019**, *4*, 708-713.
5. Hanigan, D., Truong, L., Schoepf, J., Nosaka, T., **Mulchandani, A**., Tanguay, R., Westerhoff, P. Trade-offs in Ecosystem Impacts from Nanomaterial versus Organic Chemical Ultraviolet Filters in Sunscreens. *Water Research*, **2018,** *139,* 281-290.
6. **Mulchandani, A.*** and Westerhoff, P. Recovery opportunities for metals and energy from sewage sludges. *Bioresource Technology*, **2016,** *215,* 215-226**.**
7. Pornwongthong, P., **Mulchandani, A**., Gedalanga, P. B., & Mahendra, S. Transition metals and organic ligands influence biodegradation of 1, 4-dioxane. *Applied biochemistry and biotechnology*, **2014**, *173*, 291-306.

Peer-Reviewed Conference Papers

1. Donohue, S. and **Mulchandani, A.** Motivations and Barriers to Participation in Community Outreach and Engagement Among Environmental and Water Resources Engineering Students. *Paper presented at 2023 ASEE Annual Conference and Exposition*, **2023**, *June.* Paper ID #39784.
2. Donohue, S., Zachek, K.G., Webster, A., Schroeder, T., **Mulchandani, A.*** Engaging early-stage undergraduate students in research through a science communication fellowship. *Paper presented at 2023 ASEE Annual Conference and Exposition*, **2023**, *June.* Paper ID #40329.
3. Quay, A.N., Monette, C.E., Huang, S.A., Wnorowski, A., **Mulchandani, A.**, & Miller, R. Online Engagement and Outreach Activities in an ASEE Student Chapter During Turbulent Times, *Paper presented at 2021 ASEE Virtual Annual Conference*, **2021**, *July.* https://peer.asee.org/37538

Papers submitted and under review

1. Meza, I., Hua, H., Gagnon, K., **Mulchandani, A.**, Gonzalez-Estrella, J., Burns, P., Ali, A., Spilde, M., Peterson, E., Cerrato, J. Removal of aqueous uranyl and arsenate mixtures after reaction with limestone, PO_4^{3-}, and Ca^{2+}. *Environmental Science and Technology*. Submitted May 2023.

Papers in preparation as lead PI

1. Gayoso, N., Moylan, E., Juarez, E., **Mulchandani, A.** Techno-economic assessment of condensation-based atmospheric water harvesting across climates. *In prep for submission to ACS ES&T Engineering*
2. Abadam, C., Espino Buiza, A., **Mulchandani, A.**, Hydrothermal liquefaction of wastewater sludge across the process train. *In prep for submission to Bioresource Technology*

3. Busch, T., Gleicher, C., Rudgers, J., Cerrato, J., **Mulchandani, A.** Arsenic uptake by mycorrhizal fungi in solution. *In prep for submission to Environmental Science & Technology*
4. Donohue, S., Stone, A.B., **Mulchandani, A.** What motivates water graduate students to pursue broader impact activities? *In prep for submission to Journal of Higher Education Outreach and Engagement*
5. Kremer, C., Barney, A.J., Herckes, P., Howe, K., Jahne, M., Martin, R., Mohammed, A., Noha, W., Willman, E., Yu, J., Westerhoff, P., **Mulchandani, A.** Risk evaluation of atmospheric contaminants to water produced through atmospheric water harvesting technologies. *In prep for submission to Environmental Science & Technology*

PRESENTATIONS

Invited Talks

1. **Mulchandani, A.** and Crockett, W. Grand Challenges for Sustainable Water Resources: Undergraduate Research Communication Scholarship. University of New Mexico Regents Student Success, Teaching and Research Committee (SSTAR). May 5, **2022**.
2. **Mulchandani, A.**, Webster, A., Donohue, S. Grand Challenges for Sustainable Water Resources: Undergraduate Research Communication Scholarship. University of New Mexico Team Research Symposium. April 19, **2022**.
3. **Mulchandani, A.** Atmospheric Water Harvesting: A Decentralized Technology for Water Resilience. *Utah State University*, February 24, **2022**.
4. **Mulchandani, A**. Advancing the technology readiness level of atmospheric water harvesting technologies. *Auburn University Environmental Engineering Seminar*, November 1, **2021**.
5. **Mulchandani, A.** Atmospheric Water Harvesting: A Decentralized Technology for Water Resilience in the Southwest. *UNM Resilience Institute 5th Annual Resilience Colloquium*, Oct 12, **2021**.
6. **Mulchandani, A.** Atmospheric Water Capture: A decentralized, off-grid emergency water supply. *Colorado School of Mines Graduate Seminar*, March 19, **2021**.
7. **Mulchandani, A.** Advancing the technology readiness level of atmospheric water capture technologies. *New Mexico Water Committee Technical Webinar*, March 17, **2021**.
8. **Mulchandani, A.** No Pipes, No Problem! Drinking Water from the Air, Anywhere, Anytime. *University of Texas San Antonio Environmental Science and Engineering Seminar*, September 28, **2020**.
9. **Mulchandani, A.,** Edberg, J., Westerhoff, P. Atmospheric Water Capture: A decentralized drinking water technology. *ASU Environmental Engineering Seminar*, Tempe, AZ, February 12, **2019**
10. **Mulchandani, A.**, Westerhoff, P. Atmospheric Water Capture. *ASU Environmental Engineering Seminar*, Tempe, AZ, September 27, **2016**.

Conference Oral Presentations, Speaker Underlined

1. Abadam, C., **Mulchandani, A.** Energy production by hydrothermal liquefaction from wastewater sludge: Impacts of sludge variability on biocrude products. *19th Annual RMSAWWA /RMS WEA Student Conference*, Golden, CO, May 19, **2023**. **Student awarded 2nd place in oral competition.**
2. Busch, T., Gleicher, C., Granath, A., Portman, T., El Hayek, E., Rudgers, J., **Mulchandani, A.**, Cerrato, J. Uptake of arsenic by fungi isolates from plants for bioremediation. *American Chemical Society Spring 2023 National Conference*, Indianapolis, IN, March 27, **2023**.
3. **Mulchandani, A.**, Zeng, C., Westerhoff, P. Atmospheric Water Capture: An emerging way to reuse water from the air. *Water Reuse Symposium*, Atlanta, GA, March 7, **2023**.

4. **Mulchandani, A.** Advancing the technology readiness levels of atmospheric water harvesting technologies. *Association for Environmental Engineering and Science Professors 2022 Conference*, St. Louis, MO, June 29, **2022**.
5. Gayoso, N., Moylan, E., **Mulchandani, A.** Techno-economic analysis of atmospheric water harvesting. *New Mexico Water Workshop*, Albuquerque, NM, April 8, **2022**.
6. Gayoso, N., Moylan, E., **Mulchandani, A.** Techno-economic analysis to determine cost of atmospheric water capture technologies. *Center for Water and the Environment Mini Conference*, Albuquerque, NM, May 19, **2021**.
7. **Mulchandani, A**. Atmospheric Water Capture: A decentralized, off-grid emergency water supply. *AEESP Converging Covid-19: Environmental, Health and Equity. Session 4: Sustainably Supplying Food, Water, and Energy*. November 6, **2020**.
8. **Mulchandani, A**., Edberg, J., Malinda, S., Yazzie, K., Westerhoff, P. Thermally driven technologies for atmospheric water capture to provide decentralized drinking water. *American Chemical Society Fall 2020 Virtual Conference*, August 18, **2020**.
9. **Mulchandani, A.,** Atkinson, A., Garcia-Segura, S., Westerhoff, P. Nanoblocks: A Playful Education Tool to Teach Nanotechnology and Sorption Concepts. *Sustainable Nanotechnology Organization Conference*, San Diego, CA, November 8, **2019**.
10. **Mulchandani, A.**, Malinda, S., Edberg, J., Westerhoff, P. Capacity of sunlight driven atmospheric water capture is enhanced by photothermal nano-enabled desiccants. *US Africa Forum on Nanotechnology Convergence for Sustainable Energy, Water and Environment*, Johannesburg, South Africa, August 13, **2019**.
11. **Mulchandani, A.**, Edberg, J., Malinda, S., Westerhoff, P. Atmospheric Water Capture: A decentralized on-demand drinking water technology. *US Africa Forum on Nanotechnology Convergence for Sustainable Energy, Water and Environment*, Johannesburg, South Africa, August 14, **2019**.
12. **Mulchandani, A.**, Westerhoff, P. Geographic Climatic Factors Influence Production Yields of Solar Desiccant Based Atmospheric Water Capture. *Association for Environmental Engineering and Science Professors 2019 Conference*, Tempe, AZ, May 15, **2019**.
13. **Mulchandani, A.,** Westerhoff, P. Improving capabilities of atmospheric water capture systems: Photothermal nanomaterials enhance kinetics of water vapor desorption from desiccants. *American Chemical Society National Meeting and Exposition*, Boston, MA, August 22, **2018**.
14. **Mulchandani, A.,** Atkinson, A., Garcia-Segura, S., Westerhoff, P. Playing with "nano-blocks" enables learning about environmental applications of nanotechnology. *American Chemical Society National Meeting and Exposition*, Boston, MA, August 20, **2018**.
15. **Mulchandani, A.,** Barrios, A. Let's talk about water: How to engage with the general public about fundamentals and recent advancements in water treatment. *American Chemical Society National Meeting and Exposition*, Boston, MA, August 19, **2018**.
16. **Mulchandani, A.**, Westerhoff, P. Photothermal nanomaterials improve energy efficiency of desiccants for atmospheric water capture. *2018 Materials Research Society Spring Meeting and Exhibit*, Phoenix, AZ, April 5, **2018**.
17. **Mulchandani, A.,** Westerhoff, P. Design of novel nano-enabled photothermal desiccants to improve energy efficiency of atmospheric water capture. *American Chemical Society National Meeting and Exposition*, Washington, D.C., August 22, **2017**.
18. **Mulchandani, A.**, Hristovski, K., Herckes, P., Westerhoff, P. Recovery Opportunities for Metals and Energy from Sewage Sludges. *2016 AZ Water Association Annual Conference,* Glendale, AZ, May 13, **2016**. **Won Young Professionals Fresh Ideas Competition**
19. **Mulchandani, A.**, Hristovski, K., Herckes, P., Westerhoff, P. Extraction of Valuable Metals and Energy from Sewage Sludges. *2016 AZ Water Association Research Workshop,* Tempe, AZ, January 14, **2016**.

20. **Mulchandani, A.**, Hristovski, K., Herckes, P., Westerhoff, P. Characterization, Valuation and Recovery Opportunities of Metals in Municipal Sludges from U.S. Wastewater Treatment Plants. *Sustainable Nanotechnology Organization Conference*, Portland, OR, November 8, **2015**.
21. Pornwongthong, P., **Mulchandani, A.**, Folker, T., Phan, T., Gedalanga, P., Mahendra, S. Mechanistic toxicology of copper in a 1, 4-dioxane degrading bacterium. *American Chemical Society National Meeting and Exposition,* San Francisco, CA, August 10-14, **2014**.

Conference Poster Presentations, *Speaker Underlined*

1. Gleicher, C., Busch, T., Portman, T., Granath, A., Rudgers, J., El Hayek, E., Cerrato, J., **Mulchandani, A.** Arsenic uptake by mycorrhizal fungi in solution. *Geological Society of America Connects 2022*, Denver, CO, October 9, **2022**.
2. Gayoso, N., Moylan, E., Juarez, E., **Mulchandani, A.** Techno-economic analysis to determine cost of condensation-based atmospheric water harvesting. *American Water Works Association Annual Conference and Exposition*, San Antonio, TX, June 14, **2022**. **Student awarded 2nd place in poster competition**
3. Gayoso, N., Moylan, E., Juarez, E., **Mulchandani, A.** Techno-economic analysis to determine cost of condensation-based atmospheric water harvesting. *RMSAWWA/RMSWEA Student Conference*, Albuquerque, NM, May 16, **2022**. **Student awarded 1st place in poster competition**
4. Abadam, C., **Mulchandani, A.** Fueling the world with poop: Hydrothermal liquefaction of wastewater sludges for energy resource recovery. *RMSAWWA/RMSWEA Student Conference*, Albuquerque, NM, May 16, **2022**. **Student awarded 3rd place in poster competition**
5. Seaburn, B., **Mulchandani, A**. Enhancing the fight against climate change by optimizing global solar energy data. *RMSAWWA/RMSWEA Student Conference*, Albuquerque, NM, May 16, **2022**.
6. Hua, H., **Mulchandani, A.**, Cerrato, J. Effect of ferrihydrite transformation on sorption reactions of uranium and arsenic as a function of pH and temperature. *RMSAWWA/RMSWEA Student Conference*, Albuquerque, NM, May 16, **2022**.
7. Gayoso, N., Juarez, E., Moylan, E., **Mulchandani, A.** Techno-economic analysis to determine cost of atmospheric water capture technologies. *New Mexico Water Resources Research Institute 2021 Virtual Conference*, October 27, **2021**.
8. Mata, Y., Juarez, E., **Mulchandani, A.** Atmospheric water capture using dehumidifiers. *New Mexico Alliance for Minority Participation Summer Community College Opportunity for Research Experience Poster Symposium,* Albuquerque, NM, June 30, **2021**.
9. **Mulchandani, A**., Malinda, S., Edberg, J., Yazzie, K., Westerhoff, P., Sunlight driven atmospheric water capture technology capacity is enhanced by nano-enabled photothermal desiccants. *Sustainable Nanotechnology Organization 2020 Virtual Conference*, November 9, **2020**.
10. **Mulchandani, A.**, Malinda, S., Edberg, J., Westerhoff, P. Atmospheric water capture capacity is enhanced using photothermal nanomaterial enabled desiccants. *Sustainable Nanotechnology Organization Conference*, San Diego, CA, November 7, **2019**. **Awarded 3rd place in poster competition**
11. **Mulchandani, A.**, Edberg, J., Malinda, S., Westerhoff, P. Atmospheric Water Capture: A decentralized on-demand drinking water technology. *US Africa Forum on Nanotechnology Convergence for Sustainable Energy, Water and Environment*, Johannesburg, South Africa, August 14, **2019**.
12. **Mulchandani, A.,** Westerhoff, P. Making water from thin air: Using the atmosphere as an alternative freshwater reservoir to supplement rising water demands. *2018 AZ Water Association Research Symposium,* Phoenix, AZ, January 9, **2018**. **Awarded 2nd place in poster competition**

13. **Mulchandani, A.**, Westerhoff, P. Enhancing energy efficiency of atmospheric water capture using nano-enabled photothermal desiccants. *Water Quality Technology Conference*, Portland, OR, November 12, **2017**.
14. **Mulchandani, A.**, Westerhoff, P. A model-based approach to design of novel photothermal desiccants for atmospheric water capture. *Water Reuse Symposium*, Phoenix, AZ, Sept 10, **2017**.
15. **Mulchandani, A.**, Westerhoff, P. A model-based approach to design of novel desiccants for atmospheric water capture. *Association for Environmental Engineering and Science Professors 2017 Conference,* Ann Arbor, MI, June 22, **2017**.
16. **Mulchandani, A.**, Hristovski, K., Herckes, P., Westerhoff, P. Recovery Opportunities for Metals and Energy from Sewage Sludges. *American Water Works Association Annual Conference and Exposition,* Chicago, IL, June 21, **2016**.
17. **Mulchandani, A.**, Hristovski, K., Herckes, P., Westerhoff, P. Recovery Opportunities for Metals and Energy from Sewage Sludges. *ASU School of Sustainable Engineering and the Built Environment Graduate Research Symposium,* Tempe, AZ, March 18, **2016**. **Awarded 1st place in poster competition**
18. **Mulchandani, A.**, Hristovski, K., Herckes, P., Westerhoff, P. Recovery Opportunities for Metals and Energy from Sewage Sludges. *AZ Water Association Research Workshop,* Tempe, AZ, January 14, **2016**. **Awarded 1st place in poster competition**
19. **Mulchandani, A.**, Pornwongthong, P., Gadalanga, P., Mahendra, S. Getting Back in the Game with Bioremediating 1,4-Dioxane. *American Water Works Association CA/NV Conference*, Anaheim, CA. March 26, **2014**. **Awarded 1st place in Young Professionals Poster Competition**
20. **Mulchandani, A.**, Pornwongthong, P., Gadalanga, P., Mahendra, S. Effects of Heavy Metals on Biodegradation of 1,4-Dioxane. *UCLA Undergrad Science Poster Day*, Los Angeles, CA. May 14, **2013**
21. **Mulchandani, A.**, Pornwongthong, P., Gadalanga, P., Mahendra, S. Heavy Metals Hamper Pollution Eating Bacteria. *UCLA Engineering Tech Forum*, Los Angeles, CA. May 8, **2013**.

PROPOSALS

Funded, as PI or co-PI

Project Title: Science communication program to connect environmental health science research with Indigenous Communities
Source: UNM College of Pharmacy Pilot Program
Total Award Amount: $26,000
PI: Anjali Mulchandani, Co-PI: Mallery Quetawki
Awarded: January 2023

Project Title: STEM Education Grand Challenge
Source: UNM Grand Challenges Level 1
Total Award Amount: $5000
Conveners: A. Abeyta; C. Hushman; T. Schroder; Team Members: L. Godwin; D. Gould; Y. Lin, **A. Mulchandani**; A. Nanemann; A. Noureddine
Awarded: Spring 2022

Project Title: Evaluation of air versus water treatment requirements to improve water quality for Atmospheric Water Harvesting Technology as a renewable water supply
Source: PepsiCo
Total Award Amount: $189,000 (Mulchandani portion: $109,297)
PI: Paul Westerhoff, co-PI: Anjali Mulchandani
Duration: May 2022 – May 2023

Project Title: UNM METALS Superfund Center Renewal
Source: National Institute of Environmental Health Sciences
Total Requested: $12M, Total Awarded: $8.4M, Mulchandani/Cerrato/Rudgers: $775,000
PI: Johnnye Lewis, Project leads and Co-leads: D. Begay, S. Blossom, A. Bolt, A. Brearley, S. Burchiel, M. Campen, E. Castillo, J. Cerrato, M. Couig, R. Dan, R. Du, E. El Hayek, E. Erdei, S. Fendorf, J. Galewksy, M. Gonzales, S. Henio-Adeky, L. Hudson, Y. Lin, K. Liu, L. Luo, D. MacKenzie, N. Maryboy, C. Miller, **A. Mulchandani**, J. Pacheco, C. Roman, J. Rudgers, C. Shuey, A. Sood, K. Swimmer, A. Uhlemann, X. Yang, X. Yu, K. Zychowki
Awarded: April 2022

Project Title: Waste as a Resource: A thermo-chemical system to recover metals and produce oil from sewage sludges
Source: UNM Advance Women in STEM Award
Total Award Amount: $10,000
PI: Anjali Mulchandani
Duration: August 2021 – July 2022

Project Title: Acquisition of a Thermo Fisher Gallery Discrete Wet Chemistry Analyzer for the Center for Water and the Environment
Source: UNM Program for Enhancing Research Capacity
Total Award Amount: $47,300
PI: Katelin Fisher, co-PIs: Anjali Mulchandani, Kerry Howe, Andrew Schuler
Awarded: September 2021

Project Title: Discovery and Implementation of Atmospheric Water Extraction Technology for a Renewable Water Supply
Source: PepsiCo
Total Award Amount: $125,000 (Mulchandani portion: $40,000)
PI: Paul Westerhoff, co-PIs: Anjali Mulchandani and Lenore Dai
Duration: June 2020 – October 2021

Project Title: Water Access Through Education and Renewable Energy (WaterE)
Source: NSF Integrative Graduate Education and Research Traineeship Program Solar Utilization Network Competitive Innovation Fund
Total Award Amount: $20,000
PIs: Anjali Mulchandani, Mariana Lopes, Tara Nietzold
Duration: 2017 – 2019

Project Title: National Science Foundation Graduate Research Fellowship
Source: National Science Foundation
Total Award Amount: $134,000
PI: Anjali Mulchandani
Duration: 2016 – 2019

Funded, student research grants

Project Title: Techno-Economic Analysis to Determine Cost of Atmospheric Water Capture Technologies
Source: New Mexico Water Resources Research Institute FY21-22 Student Research Grant
Total Award Amount: $7500
Student PI: Natalie Gayoso
Duration: May 2021 – May 2022

Project Title: Hydrothermal Liquefaction of Wastewater Sludges for Energy Resource Recovery

Source: New Mexico Water Resources Research Institute FY22-23 Student Research Grant
Total Award Amount: $7500
Student PI: Carl Abadam
Duration: June 2022 – May 2023

Project Title: Determining Water Quality of Atmospheric Water Harvest
Source: New Mexico Water Resources Research Institute Fall 2022 Student Research Grant
Total Award Amount: $7500
Student PI: Alan Barney
Duration: December 2022 – December 2023

Project Title: National Science Foundation Graduate Research Fellowship
Source: NSF
Student: Carl Abadam
Duration: 2023 – 2028

Project Title: National Science Foundation Graduate Research Fellowship
Source: NSF
Student: Christine Gleicher (UG)
Duration: 2023 – 2028

Applied, unfunded

Project Title: C-CLEAN IT–Center for CLimate and Environmental Abatement kNowledge for Infrastructure and Transportation
Source: University Transportation Centers Program Regional Centers
Total Award Requested: $3M, UNM portion: $180,000
PI: Huang, J., Co-PIs: Johnson, D., Brown, K., Eise, J., Leite, F., Dixit, M., Vipulanandan, C., Wang, F., Kan, E., Upton, G., Shin, A.H., **Mulchandani, A.**
Submitted: August 2022

Project Title: Decolonizing pathways from dual-credit to post-graduate in New Mexico by formalizing the community resilience and wellbeing network
Source: Alfred P. Sloan Foundation
Total Award Requested: $250,000
PI: Anjali Mulchandani, Co-PIs: Asa B. Stone, Mark Stone, Jose Cerrato, Michael Schaefer, Daniel Cadol, Abhishek Roychowdhury, Phillip Lister, Chuck Charleston
Submitted: April 2022

Project Title: Waste to Energy: Hydrothermal Liquefaction for Biocrude Oil Production from Sewage Sludges
Source: New Mexico Water Resources Research Institute
Total Award Requested: $33,000
PI: Anjali Mulchandani
Submitted: March 2022

Project Title: Partnership Between University of New Mexico CREST Center for Water and the Environment and ERC for Nanotechnology Enabled Water Treatment: Techno-Economic Analysis to Identify Niche Opportunities for Advanced Atmospheric Water Harvesting Research
Source: NSF CREST Partnership Supplement
Total Award Requested: $100,000
PI: Anjali Mulchandani
Submitted: February 2022

Project Title: Energy Recovery from Municipal Sewage Sludges

Source: Oakridge Associated Universities Ralph Powe Junior Faculty Enhancement Award
Total Award Requested: $5000
PI: Anjali Mulchandani
Submitted: January 2022

Project Title: Electrospun Photothermal Desiccant Mats for Atmospheric Water Capture in Arid Climates
Source: Johnson & Johnson WiSTEM^{2}D
Total Award Requested: $150,000
PI: Anjali Mulchandani
Submitted: September 2021

Project Title: Hydrothermal liquefaction of wastewater solids to manage metals, nutrients and organics enables environmentally benign, scalable, and economically viable resources recovery
Source: Environmental Protection Agency
Total Award Requested: $1.5M
PI: Anjali Mulchandani, Co-PIs: Paul Westerhoff, James Ranville, Shuguang Deng, Linda Figueroa
Submitted: January 2021

Project Title: Electrospun Photothermal Desiccant Mats for Atmospheric Water Capture in Arid Climates
Source: Oakridge Associated Universities Ralph Powe Junior Faculty Enhancement Award
Total Award Requested: $5000
PI: Anjali Mulchandani
Submitted: January 2021

Project Title: Off-grid nanotechnology-based systems to supply water for populations living in underdeveloped arid regions of Brazil
Source: USAID NSF Partnerships for Enhanced Engagement in Research
PIs: Marcio Da Silva, Paul Westerhoff; Mulchandani role: Idea conception, proposal writing
Submitted: 2018

Project Title: Maximizing Algae Fuel Total Productivity
Source: DOE Biomass Research and Development Initiative
PI: Bruce Rittman; Mulchandani role: Idea conception, proposal writing
Submitted: 2017

TEACHING

University of New Mexico

CE 335: Environmental and Water Resources Engineering, 3 units
Spring 2023. Enrollment 37 students.
Spring 2022. Enrollment: 19 students. Evaluation: Instructor Effectiveness 4.95/5, Instructor Availability 5/5, Course Effectiveness: 5/5.
Spring 2021. Enrollment: 33 students. Evaluation: Instructor Effectiveness 4.94/5, Instructor Availability 4.97/5, Course Effectiveness: 4.97/5.

CE 438/538: Sustainable Engineering, 3 units
Fall 2022 438. Enrollment 19 students. Evaluation: Instructor Effectiveness 4.67/5, Instructor Availability 4.78/5, Course Effectiveness 4.72/5.
Fall 2022 538. Enrollment 9 students. Evaluation: Instructor Effectiveness 4.67/5, Instructor Availability 5/5, Course Effectiveness 4.89/5.

Fall 2021 438. Enrollment: 19 students. Evaluation: Instructor Effectiveness 5/5, Instructor Availability 4.94/5, Course Effectiveness: 5/5.
Fall 2021 538. Enrollment: 13 students. Evaluation: Instructor Effectiveness 5/5, Instructor Availability 5/5, Course Effectiveness: 5/5.

CE 551 Independent Study: Communicating a Vision for ABQ as a National Park City, 2 units
Spring 2022. Enrollment: 3 students. Evaluation: Instructor Effectiveness 5/5, Instructor Availability 5/5, Course Effectiveness: 5/5.

Arizona State University

Instructor
CEE 361: Introduction to Environmental Engineering, 3 units
Summer 2017 Session A. Instructor evaluation: 4.98/5.
CEVE 565: NanoEnvironmental Engineering for Teachers, course offered by Rice University Office of STEM Engagement, 3 units; **Spring 2019**.

Teaching Assistant
EVE 302: Environmental Engineering Fundamentals: Physical Chemical Process, 3 units; **Fall 2019.**

Guest Lecturer
ENVS 4000: Human Dimensions of Natural Resource Management (Utah State University). Topic: Atmospheric Water Harvesting Feb 24, **2022**.
EVE 302: Environmental Engineering Fundamentals: Physical Chemical Processes (ASU). Topics: Adsorption, Jan 23, **2018** & Oct 24, **2019**; Units, Aug 27, **2019**; Biochemical Oxygen Demand (BOD), Oct 8, **2019**
EVE 304: Environmental Engineering Processes Lab (ASU). Topic: BOD, Oct 2, **2019**
CHM 302: Environmental Chemistry (ASU). Topic: Water Treatment and Reuse, Oct 10, **2018**
CEE 561: Physical-Chemical Treatment of Water and Wastewater (ASU). Topics: Reactor Theory, Jan 25, **2017**; Disinfection, Feb 8. **2017**

INVENTION DISCLOSURES

Nano-blocks: A Playful Method to Learn about Nanotechnology Enabled Water and Air Treatment
Copyright disclosure to Arizona Board of Regents October 12, **2018**

MULTIMEDIA

Articles

UNM Newsroom article about students Carl Abadam and Christine Gleicher, **2023**
https://news.unm.edu/news/two-engineering-students-selected-for-nsf-graduate-research-fellowship-awards

UNM Newsroom article about Grand Challenge Water Science Communication Fellowship
2022: https://news.unm.edu/news/ten-undergraduates-selected-as-grand-challenges-water-communication-research-scholars
2023: https://news.unm.edu/news/from-zines-to-the-sound-of-fungi

UNM Newsroom article about Nanoblocks activity presented at UNM Day at the State Capitol, **2023**
https://news.unm.edu/news/unm-takes-over-the-rotunda-as-part-of-unm-day-at-the-state-capitol-6887767

UNM Newsroom article about graduate student Natalie Gayoso, **2022**
https://engineering.unm.edu/news/2022/07/graduate-student-wins-award-at-national-water-conference.html

UNM Newsroom article about Shared Futures SciArt event at Explora Science Museum, **2022**
https://news.unm.edu/news/unm-team-joins-art-and-science-at-explora-event

New Mexico Water Resources Research Institute, Meet the Researcher, **2021**
https://nmwrri.nmsu.edu/meet-the-researcher-anjali-mulchandani-assistant-professor-the-university-of-new-mexico/

ASU article about Engineering Dean's Dissertation Award, **2019**
https://fullcircle.asu.edu/graduate/anjali-mulchandani/

ASU News article about NSF Graduate Research Fellowship, **2016**
https://news.asu.edu/20161108-intent-making-big-impacts

Media

Photo and Short Film Exhibit: Food, Energy and Water Resources in New Mexico: Past Present and Future. Displayed at Explora Children's Science Museum for Shared Futures and Meet and Scientist and Artists events. In collaboration with local photographer, Lisa Hurst, In Search of Solid Ground Photography, **2022**
https://www.insearchofsolidground.org/exhibits/
https://www.sharedfutures.gallery/gallery/fewr-in-nm

Podcast Interview: Atmospheric Water Harvesting, Ripple Effect Podcast, March 4, **2022**.
https://www.clydesnow.com/media/podcasts/ripple-effect-82-atmospheric-water-harvesting/

Video presentation: #AEESPConvergingCOVID19: Atmospheric Water Capture by Dr. Anjali Mulchandani, **2020**
https://www.youtube.com/watch?v=58e_alyychg

Video entry for Association for Environmental Engineering and Science Professors (AEESP) **2018** Student Video Competition "The Value of Water", **Awarded 2nd place**
https://www.youtube.com/watch?v=gV_SnYUkuDM

Video supplement for manuscript "Nano-blocks": A playful method to learn about nanotechnology enabled water and air treatment
https://bit.ly/nanoblocks-activity

Student Media Projects

Grand Challenge Undergraduate Water Science Communication Scholars Program (**2021 – present**)

Project description: https://urad.unm.edu/faculty-staff/plug-and-play-modules/undergraduate-water-science.html
Student projects: https://uradexpo.unm.edu/category/grand-challenges/
Student projects **2022**: https://efla.unm.edu/home/learning-academy/
Student projects **2023**: https://bitl.y/WaterGC2023

STUDENTS and POSTDOCS MENTORED

University of New Mexico

Doctoral Advisees as Committee Chair or Co-Chair:

Aubrey Harris (co-advised with Dr. Mark Stone), completed Spring 2023
Program: Water Resources Engineering
Dissertation: Hydraulic modeling to inform environmental flows

Masters Advisees as Committee Chair or Co-Chair:

Completed

Trier Ward, MS completed Spring 2022
Program: Nanoscience and Microsystems Engineering
Project: Design of desiccant materials and systems for atmospheric water harvesting

Natalie Gayoso, MS completed Fall 2022
Programs: Environmental Engineering and Water Resources Engineering
Thesis: Technoeconomic analysis of atmospheric water harvesting systems
Honors/Awards: New Mexico Water Resources Research Institute Research Grant, 1st place poster award at 2022 RMSAWWA/RMSWEA Student Conference, 2nd place poster award at 2022 AWWA Annual Conference and Exposition Fresh Ideas Session

Current

Carl Abadam, 2021 – present (expected Summer 2023)
Program: Environmental Engineering
Thesis: Hydrothermal liquefaction to recover energy from sewage sludges
Honors/Awards: NSF Graduate Research Fellowship, New Mexico Water Resources Research Institute Research Grant, 3rd place poster award at 2022 RMSAWWA/RMSWEA Student Conference, 2nd place oral presentation award at 2023 RMSAWWA/RMSWEA Student Conference

Taylor Busch (co-advised with Dr. Jose Cerrato), 2021 – present (expected Summer 2023)
Program: Environmental Engineering
Thesis: Remediation of metal mixtures at abandoned mine sites by fungi
Honors/Awards: NIEHS METALS Superfund Center Diversity Scholarship, Navajo Nation Scholarship

Sydney Donohue, 2022 – present (expected Summer 2023)
Program: Water Resources
Thesis: Assessment of water resources engineering outreach

Alan (AJ) Barney, 2022 – present (expected Spring 2024)
Program: Environmental Engineering
Thesis: Atmospheric water harvesting water quality and treatment
Honors/Awards: New Mexico Water Resources Research Institute Research Grant

Matt Russell, 2023 – present (expected Fall 2023)
Program: Water Resources
Thesis: Atmospheric water harvesting water quality and treatment

MS Committee Member

Derek Belka, MS completed December 2021
Maria Cruz, MS completed December 2022
Tammy Huynh, expected Summer 2023
Haley Ormsbee, expected Summer 2023
Cristian Kremer, expected Summer 2023

Postdoctoral Researchers:

Han Hua, 2021 – present
Project: Bioremediation by plant-fungi symbiosis for uptake of metal mixtures
Co-advised with. Dr. Jose Cerrato

Undergraduate Students:

Completed

Yaniksa Mata, 2021
Program: Computer Engineering, New Mexico Alliance for Minority Participation Program Summer Community College Opportunity for Research Experience (NM AMP SCCORE)
Project: Operating dehumidifiers for atmospheric water harvesting
Brittney Seaburn, 2021 – 2022
Program: Chemical Engineering, UNM Engineering Student Research Experience Program
Project: Critical analysis of global solar irradiance databases
Kritan Subedi, 2022
Program: Civil Engineering
Project: Developing outreach activities on what not to flush down the toilet
Alejandro Espino Buiza, 2022
Program: Chemical Engineering
Project: Hydrothermal liquefaction of sewage sludges
Emily (Gracie) Moylan, 2021 – 2023
Program: Civil Engineering, UNM Engineering Student Research Experience Program
Project: Technoeconomic analysis of atmospheric water harvesting systems
Christine Gleicher, 2022 – 2023
Program: Chemical Engineering
Project: Remediation of metal mixtures at abandoned mine sites by fungi
Honors/Awards: NSF Graduate Research Fellow, McNair Scholarship, Goldwater Scholarship, New Mexico Alliance for Minority Participation Undergraduate Research Scholarship (NM AMP URS)
Katherine Leon, 2023
Program: Civil Engineering
Honors/Awards: UNM Sustainable Water Resources Undergraduate Water Science Communication Fellowship

Current

Constanza (Coti) Kremer, 2022 – present

Program: Civil Engineering
Project: Water quality of atmospheric water harvesting technologies
Honors/Awards: UNM Sustainable Water Resources Undergraduate Water Science Communication Fellowship, UNM School of Engineering Outstanding Junior Award

High School Students:

Eliana (Kai) Juarez, 2021 – 2022
Program: Center for Water and the Environment Research Internship
Project: Programming sensors for atmospheric water harvesting
Aidan Nicolas (Nico) Rodriguez, 2022 – present
Project: Programming sensors for atmospheric water harvesting
Now at New Mexico Tech University

Stanford University

Alison Fritz (MS, Environmental Engineering), 2020

Arizona State University

Shannon Malinda (BS, Environmental Engineering), 2018 – 2020
Justin Edberg (BS, Materials Science and Engineering), 2018 – 2020
Kaley Yazzie (BS, Environmental Engineering), 2019 – 2020
Nathaniel Fink (BS, Materials Science and Engineering), 2018 – 2019
Perivaldo Fernandez (BS, Materials Science and Engineering), 2018 – 2019
Bader Al-Muha (BS, Materials Science and Engineering), 2018 – 2019
Adam Tran (BS, Civil Engineering), 2016 – 2017
Emma Westerhoff (BS, Electrical Engineering), 2018 – Awarded NSF Graduate Fellowship 2023

SERVICE

Professional

Environmental Protection Agency (EPA) Board of Scientific Counselors Executive Committee, **2022 – present**
Reviewer for Scientific Journals, **2017 – present**
ACS ES&T Water, Environmental Science & Technology, Environmental Science: Nanotechnology, Water Research, Desalination, Journal of Environmental Management, Journal of Hazardous Materials, Science of the Total Environment, Water Science and Technology
Reviewer for student and postdoctoral research fellowships: NSF Graduate Research Fellowship **2022, 2023**, ASEE eFellows Engineering Postdoctoral Fellowship **2021**
Workshop leader for New Mexico Research Symposium, Workshop title: Using Techno-Economic Analysis to inform your R&D. November 9, **2021**.
Session Chair, Sustainable Nanotechnology Organization Conference, Session theme: NanoEducation, November **2019, 2022**
Student Organizing Committee, 2019 Association for Environmental Engineering and Science Professors Research and Education Conference, **2018 – 2019**
Session Chair in ENVR Category, American Chemical Society Fall 2017 Conference, Session theme: Nanotechnology Enabled Water Treatment Technologies, **August 2017**
American Chemical Society Environmental Chemistry Division Graduate Service Fellow, **2017**

University

UNM Leadership Committees

UNM Grand Challenge on STEM Education Leadership Team, **2022 – present**
Faculty Advisor, UNM American Water Works Association Student Chapter, **2022 – present**
UNM Grand Challenge on Sustainable Water Resources Leadership Team, **2021 – present**
Fellowship Organizer, Undergraduate Water Science Communication Fellowship sponsored by UNM Grand Challenge on Sustainable Water Resources, **2021 – present**

UNM CCEE Departmental Committees

UNM CCEE Graduate Committee, **2022 – present**
UNM CCEE Environmental Engineering Faculty Search Committee, **2022-2023**
UNM CCEE Transportation Faculty Search Committee, **2021-2022**
UNM CCEE Undergraduate Committee, **2021-2022**

Postdoc and Graduate Leadership

Officer, Stanford Chapter American Society for Engineering Education, **2020**
Committee Member, Stanford CEE Anti-Racism Working Group, **2020**
Student Leadership Council for National Science Foundation Engineering Research Center (ERC) on Nanotechnology Enabled Water Treatment (NEWT): Founding President, **2015-16**; ASU Outreach Chair, **2016-17;** ERC Liaison, **2017-18,** Education Liaison, **2018-19**
ASU Graduate Fellowships Mentor, **2018-2019**
Travel Grant Reviewer, ASU Graduate Professional Student Association, **2015 – 2019**
President, Graduate Students for the Environment, **2016;** Officer, **2015**.
ASU Night of the Open Door Exhibit Coordinator, **2015 – 2019.**

Community

STEM Outreach and Engagement at Events in New Mexico: STEM Santa Fe STEM Pathways for Girls, Explora Children's Science Museum events – Science Fiesta, Meet a Scientist and Artist, Adult Night, **2022 – present**
Art installation *Elemental*, made in collaboration with artist Viola Arduini, displayed at Explora Children's Museum Event May 19, **2023**.
Photography and Short Film Exhibit *Food, Energy, and Water Resources in New Mexico*, made in collaboration with artist Lisa Hurst, displayed at Explora Children's Science Museum Events June 18, **2022**, August 6, **2022**.
STEM Equity and Inclusion Panelist, 2021 New Mexico Out of School Time Network (NMOST) Fall into Place Conference, October 21, **2021**.
Invited Guest Speaker, NMOST Advancing Young Women in STEM Scholarship Awards Ceremony, August 10, **2021**.
Skype a Scientist, Virtual presentations in K-12 classrooms across the U.S., **2020**
Covid-19 Classes for Kids, Virtual presentations in K-12 classrooms across the U.S., **2020**
Presentation to legislators at Arizona Capitol, Title: Water Resources in Arizona, Feb 5, **2019**.
Mentor, FIRST LEGO League Hydrodynamics Battlebots 2.0 Team, **2017-2018**
Instructor, K-12 After School Science Programs, Greater Phoenix Metro Region (Tempe, Kyrene, Chandler Unified School Districts), **2014 – 2017**
Instructor, K-12 After School Science Programs, Los Angeles Unified School District, **2012 – 2014**

STEM Competition Judge: Central New Mexico STEM Research Challenge Judge for Senior Division Earth and Environmental Science, **2021, 2022**; Central New Mexico Science Olympiad Judge for Bridges, **2022**; AZ Science and Engineering Fair Judge for Senior Division Environmental Engineering, **2017, 2018, 2019**; FIRST LEGO Robotics League Judge, **2018, 2019**; Future City Competition Judge, **2017, 2018**; Intel Science and Engineering Fair Judge for Senior Division Environmental Engineering, **2016**.

PROFESSIONAL DEVELOPMENT

Advancing Careers in Academics with Diversity Education and Mentorship in Engineering (ACADEME) NSF Funded Workshop, June 3-13, 2019
ASU Diversity and Inclusion Science Initiative Graduate Research Conference, Feb 1, 2018.
Translating Graduate Nano-Experience to an Academic Career: Integrating Social Aspects in Engineering Education through Active Learning, October 8, 2016.
Preparing Future Faculty, ASU, 2015-2016

PROFESSIONAL MEMBERSHIPS

American Academy of Environmental Engineers and Scientists (AAEES)
American Chemical Society (ACS)
American Society for Engineering Education (ASEE)
American Water Works Association (AWWA)
Association for Environmental Engineering and Science Professors (AEESP)
Sustainable Nanotechnology Organization (SNO)
Toastmasters International