

Emily Grubert

Civil and Environmental Engineering
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ACADEMIC APPOINTMENTS

2017-pres. **University of California, Berkeley**, Postdoctoral Scholar, Civil and Environmental Engineering

EDUCATION

- PhD **Stanford University**, Environment and Resources, 2017
Dissertation: *Improving Life Cycle Assessment as a Decision Support Tool Using Empirical Data for Multicriteria Prioritization*
Co-advisors: Adam Brandt, Mark Algee-Hewitt
Qualifying fields: Energy and Environmental Systems, Societal Preferences in Decision Processes
- MS **The University of Texas at Austin**, Environmental and Water Resources Engineering, 2011
Thesis: *Freshwater on the Island of Maui: System Interactions, Supply, and Demand*
- MA **The University of Texas at Austin**, Energy and Earth Resources, 2010
Thesis: *Maui's Freshwater: Status, Allocation, and Management for Sustainability*
- BS **Stanford University**, Mathematics (Honors), Atmosphere/Energy Engineering (Honors), Biological Sciences (Minor), 2009

PROFESSIONAL EXPERIENCE

- 2013 **Project Analyst**, Pacific Gas and Electric
- 2011-13 **Business Analyst and Junior Engagement Manager**, McKinsey & Company

RESEARCH INTERESTS

environment and natural resources; energy and extractive industries; energy-water nexus; socioenvironmental impact assessment; energy justice; communities; spatial analysis; computational social sciences; survey methodology

PUBLICATIONS

Refereed Journal Articles

*Indicates a paper authored with an advised student

- [16] **Grubert, E.** and M. Cook. 2017. Communication Science for Science Communication: Water Management for Oil and Natural Gas Extraction. *Journal of Water Resources Planning and Management*. DOI: 10.1061/(ASCE)WR.1943-5452.0000842
- [15] **Grubert, E.** and W. Skinner. 2017. A Town Divided: Community Values and Attitudes Towards Coal Seam Gas development in Gloucester, New South Wales. *Energy Research and Social Science*. DOI: 10.1016/j.erss.2017.05.041
- [14] *Drummond, V. and **E. Grubert**. 2017. Fault Lines: Seismicity and the Fracturing of Energy Narratives in Oklahoma. *Energy Research and Social Science*. DOI: 10.1016/j.erss.2017.05.039
- [13] **Grubert, E.** and M. Algee-Hewitt. 2017. Villainous or Valiant? Depictions of Oil and Coal in American Fiction and Nonfiction Narratives. *Energy Research and Social Science*. DOI: 10.1016/j.erss.2017.05.030
- [12] **Grubert, E.** 2017. The Need for a Preference-based Multicriteria Prioritization Framework in Life Cycle Sustainability Assessment. *Journal of Industrial Ecology*. DOI: 10.1111/jiec.12631
- [11] **Grubert, E.** 2017. How to Do Mail Surveys in the Digital Age: A Practical Guide. *Survey Practice*.
- [10] **Grubert, E.** 2017. Implicit prioritization in Life Cycle Assessment: Text mining and detecting metapatterns in the literature. *International Journal of Life Cycle Assessment*. DOI: 10.1007/s11367-016-1153-2
- [9] **Grubert, E.** 2016. Water Consumption from Hydroelectricity in the United States. *Advances in Water Resources*. DOI: 10.1016/j.advwatres.2016.07.004
- [8] **Grubert, E.** and A. Siders. 2016. Benefits and applications of interdisciplinary digital tools for environmental meta-reviews and analyses. *Environmental Research Letters*. DOI: 10.1088/1748-9326/11/9/093001 (selected for September 2016 monthly highlights)
- [7] Lukacs, H., N. M. Ardoin, and **E. Grubert**. 2016. Beyond formal groups: neighboring acts and watershed protection in Appalachia. *International Journal of the Commons*. DOI: 10.18352/ijc.578
- [6] **Grubert, E.** and M. E. Webber. 2016. Synthetic flows for engineered systems with nonstationary parameters: A study of Maui's Wailoa Ditch. *Journal of Hydrologic Engineering*. DOI: 10.1061/(ASCE)HE.1943-5584.0001468
- [5] **Grubert, E.** 2016. Rigor in Social Life Cycle Assessment: Improving the scientific grounding of SLCA. *International Journal of Life Cycle Assessment*. DOI: 10.1007/s11367-016-1117-6
- [4] **Grubert, E.** and M. E. Webber. 2015. Energy for water and water for energy on Maui Island, Hawaii. *Environmental Research Letters*. DOI: 10.1088/1748-9326/10/6/064009

- [3] **Grubert, E.**, A. Stillwell, and M. E. Webber. 2014. Where does solar-aided desalination make sense? A method for identifying sustainable sites. *Desalination*. DOI: 10.1016/j.desal.2014.02.004
- [2] **Grubert, E.**, F. Beach, and M. E. Webber. 2012. Can switching fuels save water? A life cycle quantification of freshwater consumption for Texas coal- and natural gas-fired electricity. *Environmental Research Letters*. DOI: 10.1088/1748-9326/7/4/045801
- [1] **Grubert, E.** 2012. Reserve reporting in the United States coal industry. *Energy Policy*. DOI: 10.1016/j.enpol.2012.01.035

Book Chapters

- [1] Haya, B., A. Strong, **E. Grubert**, and D. Cullenward. 2015. “Carbon Offsets in California: Science in the Policy Development Process.” In: *Communicating Climate Change and Natural Hazard Risk and Cultivating Resilience: Case Studies for a Multi-disciplinary Approach*. Eds: Yekaterina Kontar et al. Springer.

Editor-refereed Journal Publications

- [2] **Grubert, E.** 2016. Response to “Discourse over a contested technology on Twitter: A case study of hydraulic fracturing” – Word choice as political speech. *Public Understanding of Science*. DOI: 10.1177/0963662515626310
- [1] Emerging Leaders in Science and Society (ELISS) Fellows*. December 2015. *Reimagining Epidemic Communications*. *Domestic Preparedness Journal*. (*equal contributions by R. Erion, **E. Grubert**, S. Mosbah, M. Munyikwa, B. Paul, and C. Tran)

Conference Proceedings

- [12] Cook, M., and **E. Grubert**. April 2017. Water Use in the Oil and Gas Industries: An Evaluation of Best Practices for Communicating with Scientists, Policymakers, and the Public. *Proceedings of the Society of Petroleum Engineers Health, Safety, Security, Environment, & Social Responsibility Conference-North America*. DOI:10.2118/184431-MS.
- [11] **Grubert, E.**, D. Kelly, B. Rumbelow, and J. Wilson. May 2015. Improving Produced Water Management: A Case Study of Designing an Inland Desalination Pilot Project. *Proceedings of the World Environmental and Water Resources Congress 2015*. DOI: 10.1061/9780784479162.052
- [10] **Grubert, E.**, B. Parks, E. Schneider, and S. Sekar. December 2011. Pebble Bed Modular Reactors Versus Other Generation Technologies: Costs and Challenges for South Africa. *Proceedings of GLOBAL 2011*. Paper 391144
- [9] **Grubert, E.**, C. King, and M. E. Webber. November 2011. Water for Biomass-based Energy on Maui, Hawaii. *Proceedings of the ASME 2011 International Mechanical Engineering Congress and Exposition*. DOI: 10.1115/IMECE2011-63199
- [8] **Grubert, E.** and M. E. Webber. August 2011. Water, Energy, and Land Use Planning on Maui Island, Hawaii: Estimating Surface Water Supply. *Proceedings of the ASME*

2011 5th International Conference on Energy Sustainability. DOI: 10.1115/ES2011-54332

- [7] **Grubert, E.** May 2011. [Lifecycle Water Impacts of Coal Use in the United States](#). *Proceedings of the World Environmental and Water Resources Congress 2011: Bearing Knowledge for Sustainability*. DOI: 10.1061/41173(414)344
- [6] **Grubert, E.** May 2011. [Modeling Maui's Freshwater System to Inform Water Resource Management](#). *Proceedings of the World Environmental and Water Resources Congress 2011: Bearing Knowledge for Sustainability*. DOI: 10.1061/41173(414)105
- [5] Phillips, R. and **E. Grubert**. May 2011. [Water and Deforestation in Brazil: Future Challenges for Policy Implementation](#). *Proceedings of the World Environmental and Water Resources Congress 2011: Bearing Knowledge for Sustainability*. DOI: 10.1061/41173(414)129
- [4] **Grubert, E.** February 2011. [Energy Resource Extraction, Water Resources, and a Human Right to Water in the West](#). "Implementing the Human Right to Water in the West: Conference Report." *Willamette Law Review*. Volume 48:1.
- [3] **Grubert, E.** September 2010. [Mining-related Environmental Impacts of Carbon Mitigation: Coal-based Carbon Capture and Sequestration](#). *Proceedings of the World Energy Congress*.
- [2] **Grubert, E.** May 2010. [Centralized Transportation Fuel Planning: Leveraging Californian Refineries as Transportation Utilities](#). *Proceedings of the ASME 2010 4th International Conference on Energy Sustainability*. DOI: 10.1115/ES2010-90027
- [1] **Grubert, E.** and M. E. Webber. May 2010. [Water Impacts of the American Clean Energy and Security Act Renewable Portfolio Standard on Texas](#). *Proceedings of the ASME 2010 4th International Conference on Energy Sustainability*. DOI: 10.1115/ES2010-90029

Other Publications

- [6] **Grubert, E.**, C. King, and M. E. Webber. August 2013. ["Maui's Complicated Relationship With Water."](#) *Earth Magazine*.
- [5] Lovins, A. and Rocky Mountain Institute. September 2011. *Reinventing Fire: Bold Business Solutions for the New Energy Era*. Chelsea Green Publishing Company, Vermont. (**E. Grubert** as research contributor, natural gas and coal systems)
- [4] **Grubert, E.** August 2011. ["Why Business-as-Usual Coal Consumption Could Mean Dramatic Changes."](#) *Scientific American* Guest Blog: Commentary invited by editors of *Scientific American*.
- [3] **Grubert, E.** and S. Kitasei. December 2010. *How Energy Choices Affect Fresh Water Supplies: A Comparison of U.S. Coal and Natural Gas*. Worldwatch Institute Briefing Paper. Worldwatch Institute: Washington, D.C.
- [2] **Grubert, E.** January 2010. ["Beat a Dead Horse or Breed Immortal Ones."](#) *Solutions*. National Council for Science and the Environment.

- [1] **Grubert, E.** Over 60 published print columns, *The Stanford Daily* (January – June 2009), *The Daily Texan* (August 2009 – December 2010). Additional web columns for Americans for Energy Leadership and Elmrox (2010 – 2011).

Working Papers / Publications Under Review (manuscripts available on request)

- [4] **Grubert, E.** and K. Sanders. Water use in the US energy system.
- [3] Haya, B., A. Strong, D. Cullenward, **E. Grubert**, R. Heilmayr, D. Sivas, and M. Wara. The Challenges of Uncertainty in Offset Programs: Insights from California’s Standardized Approach.
- [2] **Grubert, E.** Social Science and Energy Policymaking: The Need for Social Scientists in Developing Social Life Cycle Assessment. (*Abstract accepted as chapter for forthcoming edited volume, Coordinating Research on the Social Impacts of Energy Development: Synthesis across the social sciences*)
- [1] **Grubert, E.** Every Door Direct Mail in US Survey Research: An Anonymous Census Approach to Mail Survey Sampling.

GRANTS AND FELLOWSHIPS

- 2017 Enhancing Diversity in Graduate Education travel grant, Stanford University (\$800)
- 2016 E-IPER Summer Graduate Research Grant, Stanford University (\$4,000)
- 2016 Stanford Earth Summer Undergraduate Research (SESUR), Stanford University (*as mentor, Grayson Melby and Virginia Drummond*) (\$13,681)
- 2015 Diversity Dissertation Research Opportunity, Stanford University (\$5,000)
- 2015 E-IPER Collaboration Grant, Stanford University (*with Whitney Skinner*) (\$26,000)
- 2015 A.I. Levorsen Grant, Stanford School of Earth, Energy and Environmental Sciences (\$3,020)
- 2015 E-IPER Summer Graduate Research Grant, Stanford University (\$2,980)
- 2014 National Science Foundation Graduate Research Fellowship (\$96,000 + tuition)
- 2014 A.I. Levorsen Grant, Stanford School of Earth Sciences (\$2,980)
- 2014 E-IPER Summer Graduate Research Grant, Stanford University (\$900)
- 2011 Chevron Scholarship, The University of Texas at Austin (\$2,500)
- 2010 Gloyna Endowed Presidential Scholarship in Environmental and Water Resources Engineering, The University of Texas at Austin (\$2,500)
- 2009 [Harrington Graduate Fellowship](#), The University of Texas at Austin (\$38,000 + tuition)
- 2007 DAAD Research Internships in Science and Engineering Fellowship, Government of Germany (living stipend)

AWARDS AND HONORS

- 2017 [Rising Environmental Leaders Program Fellow](#), Stanford University
- 2016 Commended Referee, *Environmental Research Letters*
- 2015 Outstanding Student Presentation Award, American Water Resources Association Spring Specialty Conference (Los Angeles, CA)
- 2015 Invited participant, 150 Stanford Women Leaders in Sustainability, in Honor of Gro Brundtland, Stanford University
- 2014-15 Emerging Leaders in Science and Society Fellow, American Association for the Advancement of Science
- Pre-PhD Stanford Undergraduate Research Award, Stanford University; Sustainability Generation Delegate, United Nations Environment Programme; Highbridge/Mary Sunseri Award in Mathematical Problem Solving and Highbridge Book Award, Stanford University; Aloysia Hardey Foundress Award, Convent of the Sacred Heart; Sustainable Energy Fellowship, Duke University

STUDENT SUPERVISION

- 2016 V. Drummond, Undergraduate Research Assistant, Stanford University
- 2016 G. Melby, Undergraduate Research Assistant, Stanford University
- 2016 J. Sukanuma, Undergraduate Research Assistant, Drake University

PRESENTATIONS

Invited Talks

- [14] Convent of the Sacred Heart. June 2017. Commencement Address. Greenwich, Connecticut. (*Individual*)
- [13] Energy Impacts Research Coordination Network. February 2017. "New Voices in Energy Impacts Research: Graduate Research Highlights." (*Panel*)
- [12] MAP. March 2016. "Water Intensity of Energy Systems: A Major Emerging Policy Issue." Palo Alto, California. (*Individual*)
- [11] United World College USA. February 2016. "Triple Bottom Line Policy Making: How Do We Balance Priorities?" Montezuma, New Mexico. (*Individual*)
- [10] United World College USA. February 2016. "Implementation and Activism: Being Effective While Advocating." Montezuma, New Mexico. (*Individual*)
- [9] MAP. March 2015. "The Future of the Energy Industry." Palo Alto, California. (*Panel*)
- [8] Texas Natural Gas Regulatory Modernization Initiative. June 2013. "Natural gas, coal, and water in Texas." Austin, Texas. (*Individual*)
- [7] Yale Climate and Energy Institute, Yale University. February 2013. "[Fuel Switching Can Save Water: Freshwater Use for Coal Versus Natural Gas Extraction and Power Generation in Texas.](#)" New Haven, Connecticut. (*Individual*)

- [6] South by Southwest Eco. October 2013. “New Global Models: Real-Time and Local.” Austin, Texas. *(Panel)*
- [5] Society of Women Engineers 12th Annual Conference for Women Engineers. November 2012. “Understanding the Water Implications of our Energy Choices.” Houston, Texas. *(Panel)*
- [4] International Student Energy Summit. June 2011. “Global Energy Dynamics: The Nexus between Energy and Water.” Vancouver, Canada. *(Panel)*
- [3] Rocky Mountain Institute. January 2011. “The Role of Coal in the United States: Reserves and Externalities.” Boulder, Colorado. *(Individual)*
- [2] Texas Leadership Society Luncheon. April 2010. Keynote Address. Austin, Texas. *(Individual)*
- [1] Amarillo Area Foundation and Texas Energy Forum. April 2010. “Energy and Water.” Amarillo, Texas. *(Individual)*

Refereed Conference Presentations Without Papers

*Indicates a presentation authored with an advised student

- [20] **Grubert, E.** December 2017. “Water Use for Unconventional Energy Development: How Much, What Kind, and to What Reaction?” American Geophysical Union Fall Meeting. New Orleans, Louisiana. *(Poster)*
- [19] **Grubert, E.** November 2017. “Integrating Water Quantity to Life Cycle Assessment: A US-based Energy Water Nexus Case Study.” American Water Resources Association Annual Conference. Portland, Oregon. *(Oral)*
- [18] *Suganuma, J. and **E. Grubert.** July 2017. “Community Response to Unconventional Oil and Gas Development in North America.” Energy Impacts Symposium 2017. Columbus, Ohio. *(Oral)*
- [17] **Grubert, E.** and K. Sanders. June 2017. “A National Assessment of the Water Withdrawn and Consumed for the US Energy Economy.” 2017 Joint Conference of the International Society for Industrial Ecology and International Symposium on Sustainable Systems and Technology. Chicago, Illinois. *(Oral)*
- [16] **Grubert, E.** and M. Cook. May 2017. “Communicating Controversial Scientific Issues: Water Use for Oil and Natural Gas.” World Environmental and Water Resources Congress. Sacramento, California. *(Poster)*
- [15] **Grubert, E.** and K. Sanders. December 2016. “Water for Energy: Quantifying Water Use in the United States Energy Economy as of 2014.” American Geophysical Union Fall Meeting. San Francisco, California. *(Oral)*
- [14] Jagdeo, J., A. Ravikumar, **E. Grubert,** and A. Brandt. December 2016. “A Holistic Assessment of Energy Production: Environmental, Economic, and Social Impacts of Hydraulic Fracturing in Williams County, North Dakota.” American Geophysical Union Fall Meeting. San Francisco, California. *(Poster)*

- [13] *Melby, G., **E. Grubert**, and A. Brandt. "Perceptions of Shale Gas Development: Differences in Urban and Rural Communities." American Geophysical Union Fall Meeting. San Francisco, California. *(Poster)*
- [12] *Drummond, V., **E. Grubert**, and A. Brandt. "Fault Lines: Seismicity and the Fracturing of Energy Narratives in Oklahoma." American Geophysical Union Fall Meeting. San Francisco, California. *(Poster)*
- [11] **Grubert, E.** May 2016. "The Dynamic Water Intensity of Hydroelectricity." World Environmental and Water Resources Congress. West Palm Beach, Florida. *(Oral)*
- [10] Cook, M. and **E. Grubert**. May 2016. "Water Use in the Oil and Gas Industries: Communicating with Scientists, Policymakers, and the Public." World Environmental and Water Resources Congress. West Palm Beach, Florida. *(Poster)*
- [9] **Grubert, E.** April 2016. "The Water Intensity of Coal Mining in the United States: A Basin Level Evaluation." American Water Resources Association Spring Specialty Conference. Anchorage, Alaska. *(Oral)*
- [8] **Grubert, E.** December 2015. "Social Priorities as Data." American Geophysical Union Fall Meeting. San Francisco, California. *(Poster)*
- [7] **Grubert, E.** December 2015. "Empowering Graduate Students to Lead on Interdisciplinary Societal Issues." American Geophysical Union Fall Meeting. San Francisco, California. *(Oral)*
- [6] **Grubert, E.** and A. Brandt. October 2015. "Methane Leakage in LCA: Quantifying the Effect of Fugitive Methane Emissions on Greenhouse Gas Inventories." American Center for Life Cycle Assessment LCA XV. Vancouver, Canada. *(Oral)*
- [5] **Grubert, E.** February 2015. "Hearing the Unspoken: Using Text Mining to Investigate Social and Environmental Priorities." American Association for the Advancement of Science Annual Meeting. San Jose, California. *(Poster)*
- [4] **Grubert, E.** March 2015. "Evaluating Produced Water as a New Source in the United States." American Water Resources Association Spring Specialty Conference. Los Angeles, California. *(Oral)*
- [3] **Grubert, E.**, A. Fraser, and E. Holland. September 2012. "Thermal Coal Vision 2030: United States Coal." McKinsey Basic Materials Knowledge Day. Las Vegas, Nevada. *(Oral)*
- [2] **Grubert, E.** August 2011. "Modeling Water Supply and Demand on Maui: Forests as a Land Use Category." Hawaii Conservation Conference. Honolulu, Hawaii. *(Oral)*
- [1] **Grubert, E.** October 2010. "Air Impacting Water: How Carbon Emissions Standards Could Impact West Virginia Water." West Virginia Water Conference: West Virginia's Water Resources: Threats and Opportunities. Morgantown, West Virginia. *(Oral)*

Selected Public Comments

- [2] Cullenward, D., M. Mastrandrea, **E. Grubert**, and A. Strong. March 2016. [Use of 20-year GWPs in the Draft Aliso Canyon Methane Leak Climate Impacts Mitigation Program](#). Comment to the California Air Resources Board. *(Written)*
- [1] **Grubert, E.** April 2014. [Testimony Regarding the Mine Methane Capture Carbon Offset Protocol](#). Meeting of the State of California Air Resources Board. *(Oral)*

Selected Press Coverage

Platts, Houston Chronicle, Scientific American, Environmental Research Web, Montgomery Herald, Tonopah Times-Bonanza, The Alcalde, Texas Clean Energy Coalition

Exhibitions

- [1] [Terraforming: Art and Engineering in the Sacramento Watershed](#). 2017. Green Library, Stanford University, Stanford, CA. *(Co-curator)*

TEACHING EXPERIENCE

- 2017 **Instructor**, E-IPER PhD Writing Seminar, Stanford University
- 2015-17 **Co-instructor**, Understanding Energy (formerly “Energy Resources”), Stanford University (Taught 2x/year; Teaching Assistant in 2008, 2013, 2014)
- 2014-17 **Instructor**, Energy Resources: Fuels & Tools, Stanford University *(initiated course)*
- 2016 **Co-instructor**, Water Resources: Culture and Context, Stanford University *(initiated course)*
- 2015 **Instructor**, The Practice of Mining and Its Social & Environmental Context, Stanford University *(initiated course)*

RESEARCH AND CONSULTING EXPERIENCE

- 2017 **Teaching Consultant**, MAP Royalty, Palo Alto, California
- 2016 **Project Consultant**, Lineage Logistics, Irvine, California
- 2014-15 **Project Consultant**, SandRidge Energy, Oklahoma City, Oklahoma
- 2014 **Research Assistant**, Stanford Law School
- 2014 **Research Associate**, Energy@Stanford&SLAC, Stanford University
- 2013-14 **Project Consultant**, Energy Innovation, San Francisco, California
- 2011 **Project Consultant**, Rocky Mountain Institute
- 2010-11 **Project Consultant**, Canadian Consulate
- 2009 **Research Assistant**, Stanford University, Morgantown, West Virginia
- 2008 **Research Intern**, EcofysAzure, Beijing, China

2007 **Research Associate**, Helmholtz Center for Environmental Research, Leipzig, Germany

PROFESSIONAL SERVICE

2016-pres. **Member**, Hydraulic Fracturing Technical Committee, Interdisciplinary Council, Environmental and Water Resources Institute of the American Society of Civil Engineers

2011-pres. **Journal Referee**: Applied Geography, Environment and Planning A, Environmental Research Letters, Environmental Science & Technology, Environmental Science: Processes and Impacts, Global Challenges, International Journal of Electrical Power and Energy Systems, International Journal of Life Cycle Assessment, Public Understanding of Science, Resources Policy, Sustainability, Water Policy, Water Resources Research

DEPARTMENTAL AND UNIVERSITY SERVICE

2016-17 **Enhancing Diversity in Graduate Education (EDGE) Mentor**, Stanford University

2015-17 **Vice Provost for Teaching and Learning Student Liaison**, E-IPER, Stanford University

2015-16 **Committee on Land and Building Development**, Stanford University

2014-16 **Peer Advisor, Joint MS Program**, E-IPER, Stanford University

2014-15 **Admissions Committee**, E-IPER, Stanford University

2013-14 **Student Committee**, E-IPER, Stanford University

LEADERSHIP EXPERIENCE

2015-17 **Environmental Humanities Project Leadership Team**, Stanford University

2009-12 **Volunteer Educator**, Webber Energy Group Outreach and Junior Achievement

2011 **Women in Engineering Program Mentor**, UT Austin

2010-11 **Avalon House Officer**, Intercooperative Council, Austin, TX

2008-09 **Founder and Leader**, Water Subgroup: Students for a Sustainable Stanford, Stanford University

MEMBERSHIPS

American Society of Civil Engineers
American Water Resources Association
American Geophysical Union
American Sociological Association
International Association for Society and Natural Resources

PROFESSIONAL CREDENTIALS

Leadership in Energy and Environmental Design (LEED) Accredited Professional,
Building Design and Construction
Engineer-in-Training, Environmental Engineering (License 45743)
ORCID: 0000-0003-2196-7571