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Field: Industrial Ecology

Lowell, MA 01854

Research: [BUREK Lab](#)**Comprehensive Curriculum Vitae Table of Contents**

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I. EDUCATION AND ACADEMIC QUALIFICATIONS

A. Education

Doctor of Philosophy in Mechanical Engineering, The University of Arkansas, Fayetteville, AR, United States. Dissertation: Burek, J. 2018. “Towards Environmentally Sustainable and Cost-Effective Food Distribution in the U.S.” <https://scholarworks.uark.edu/etd/2978> (December 19, 2018). Advisor: Dr. Darin W. Nutter | 2011 – 2018

Master of Science of Mechanical Engineering, The University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture, Zagreb, Croatia Master thesis: Burek, J. 2004. “Estimation of Emissivity Values of Building Façades by Thermography.” Advisor: Dr. Srecko Svaic | 1996 – 2004

Bachelor of Science of Mechanical Engineering, The University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture, Zagreb, Croatia 1996 – 2004

B. Academic Experience

Assistant Professor, University of Massachusetts Lowell, Mechanical Engineering Department, Lowell, MA | 2021 – present

BUILDing REsilience through Knowledge (BUREK) Lab advancing life cycle assessment (LCA) as a decision science for sustainability transitions: extending assessment from retrospective footprint accounting toward prospective, decision-oriented handprint assessment across circular economy, buildings and urban energy systems, food and agricultural systems, and urban green infrastructure. Methods include techno-economic analysis (TEA), systems and dynamic modeling, optimization, thermodynamics, uncertainty analysis, GIS, machine learning, and handprint assessment, with community-engaged research as a core method for problem definition, field validation, and interpretation.

- Developing a framework for assessing the socio-environmental benefits of urban food forests (ongoing) establish a food forest on UML Campus develop ecosystem services (ES) and LCA method of urban green spaces Community-engaged sustainability and outreach (UMass Lowell Food Forest). Organized and led Food Forest tours and stakeholder engagement activities. Coordinated Arbor Day community event programming. Developed interpretive signage and kiosk content for public-facing education. Built partnerships with campus and community collaborators to support the Food Forest as a living classroom and applied sustainability demonstration site. develop Healthy Soils + Food Forest Builder (open-source educational web application) (in development, 2026)
- Building sustainability and resilience (ongoing) Climate smart housing and transportation for sustainable and resilient cities (ongoing) increasing affordability and implementation of passive, zero energy, and resilient buildings strategic integration of resilience and sustainability aspects in house design in areas prone to climate-related hazards the role of passive-solar house design in tackling climate emergency
 - Reinventing Social Infrastructure: From Abandoned Schools to Community Centers (completed) we are analyzing decommissioned schools in Puerto Rico as potential fallout shelters and community centers that could act as energy stations, both generating and storing renewable solar energy. We will apply life cycle assessments and system modeling and optimization for energy resilient buildings.
- Handprint Assessment Framework of Hands-on Climate-Related University Projects (ongoing) calculate university’s carbon footprint calculate handprint of the internal and external climate-related university project
- Decarbonizing Heat: An Environmental Life Cycle Assessment of the Carbon Footprint and GHG Emissions of the Framingham, Massachusetts Geothermal Pilot System (ongoing) determine the overall carbon intensity of the geothermal heating and cooling system and other life cycle environmental impacts

- The Commonwealth of Massachusetts' Textile Disposal Ban: At the intersection of Fast Fashion and Sustainability (ongoing) Data collection around the current status of fiber disposal and recycling policy and procedure at UMass Lowell. Specification and creation of baseline and alternative life-cycle assessment scenarios based on a suite of potential actions that will help in the selection of future recommendations and policy measures. Identifying potential actions that could be implemented and evaluating their positive impact on climate, i.e., carbon handprint. The actions will be linked to actors making a change including organizations (e.g., university), communities (e.g., students, staff, and faculty) and policies necessary to achieve these changes. Development of educational materials and public awareness campaign at UMass Lowell (and/or surrounding government agencies and civil society) with an eye toward replication and dissemination across relevant institutions. Develop and disseminate policy recommendations for decision-makers at individual-, university-, city-, and state levels.
- Life Cycle Assessment of biomethane production in a biodigester using hemp cultivator's waste for enabling circular economy transition of CBD production systems (ended) the goal of this research is to investigate the utilization of hemp crop-residue as a biogas and explore the potential for creating a circular CBD industry in North Carolina. Life cycle assessment is performed to quantify the environmental footprints and cost of producing biogas with a small scale biodigester. This is a collaborative project with the School of Engineering and Technology at Western Carolina University.
- Sustainable clothing for refugee women (ended) project with the Southeast Asian Coalition (SEACMA), a nonprofit organization to create a sustainable fashion for refugee women
- Increasing sustainability of swine diets and production systems in the Global South (ongoing) working with researchers from Brazil including UNESP, UFRGS, EMBRAPA, and Elanco, Nigeria (FutuX Agri-consult LTD), and Kenya (Ministry of Livestock Development) to adapt the diet formulation model for Global South.

Postdoctoral Associate, Massachusetts Institute of Technology, Materials Research Laboratory (MRL), Cambridge, MA | 2019 – 2021

- Multi-Criteria Diet Formulation for Sustainable Swine Production, Principal Investigator <https://jwafs.mit.edu/projects/2020/multi-criteria-diet-formulation-sustainable-swine-production> developed an algorithm for the swine industry to formulate nutritionally balanced, cost-effective, and environmentally friendly swine rations without a loss of productivity in the United States integrated a multi-criteria optimization of rations with the Pig Production Environmental Calculator, which includes a swine growth model, infrastructure, manure management, dead animal disposal, and farm operation costs evaluated the sustainability of alternative swine diet formulations applied to the top U.S. swine production states working with researchers from Brazil including UNESP, UFRGS, EMBRAPA, and Elanco, Nigeria (FutuX Agri-consult LTD), and Kenya (Ministry of Livestock Development) to adapt the diet formulation model for Global South.
- Sustainability and Health Initiative for NetPositive Enterprise (SHINE) Handprint Assessment Method Development <http://shine.mit.edu/meet-team/postdocs> developed a quantitative approach (the SHINE handprint assessment) to measure the environmental, social, and economic impacts of voluntary actions of organizations/individuals resulting in positive changes called handprints organized, facilitated, and presented at the SHINE bi-annual meetings and monthly webinars
- Assessment of Positive Impact on Sustainability of Project-based Courses, MIT's Sloan Sustainability Initiative, <https://mitsloan.mit.edu/sustainability/> proposed a method and calculated the Business Sustainability Laboratory's (S-lab) positive environmental impact defined procedures to measure and track the positive environmental, economic, and social impact of project-based courses.
- Handprint Assessment of Product Innovation examined pathways for a packaging manufacturer (SIG) to create positive environmental change and performed handprint assessment for the novel aseptic carton milk packaging (SIG), which will help shift manufacturer's organizational global impact to net positive impact.
- Other Handprint Assessments performed a historical handprint assessment of an organization called Interface, which created positive changes by initiating, expediting, and facilitating methane capture at the local landfill, which was used in their operations instead of natural gas The Role of Nuclear in Decarbonizing the U.S. Energy System: A Handprint-Based Assessment (ORNL)

- Decision Support Tool for Office Buildings Early Design Modeling Project, CShub mentored a master's student project to develop a commercial building LCA (life cycle assessment)-based tool, which will inform an early building design performed cluster analysis of the U.S. building stock for the Future of Concrete project
- Micro mobility: Shared dockless electric scooters led project team and developed a multi-city framework for environmental assessment of electric scooters using micro-data, which will help make decisions about operational enhancements. developed a flexible analytical LCA-based tool to help e-scooter distributor SPIN make decisions by testing their ecodesign enhancement completed an LCA study of shared electric scooter MAX SNSC2.0 in compliance with the ISO guidelines for LCA as required by Administrative Rule TRN-15.01 – New Mobility – Shared Electric Scooters, which was submitted to the Portland Bureau of Transportation (PBOT) as a condition for SPIN's permit application
- Decision Support Tool for Passive Houses and Zero Energy Buildings Early Design Modeling Project, Civil, and Environmental Engineering (CEE) Department: Concrete Sustainability Hub (CShub) <https://cshub.mit.edu/jasmina-burek> analyzed tradeoffs such as cost/environmental impact and embodied/operation energy use of the passive and zero-energy residential houses using the streamlined underspecified building LCA-based tool called the Building Attribute to Impact Algorithm (BAIA) developed a GUI platform that enables visualize the results and exports to Excel for the BAIA tool.
- Waste-to-Energy Life Cycle and Techno-Economic Assessment Project, MIT Mechanical Engineering Department (MechE) developed an LCA model of novel torrefaction process for biochar production from rice husk and co-authored manuscript
- Machine Learning for Building Temperature Setpoints Project, CEE: CShub/MITOS/Quest/IBM/MechE collaborated on a campus-wide machine learning project for building temperature setpoints, which will evaluate the potential to reduce building energy consumption and GHG emissions on the MIT campus using machine learning-based algorithms to dynamically adjust building temperature setpoints and equipment operating schedules. The project is a multidisciplinary collaboration between several entities on campus including the Department Facilities, the Office of Sustainability, the Building Technology Program, the Quest for Intelligence, the MIT-IBM Watson AI Lab, and the Concrete Sustainability Hub. developed a framework for building room model simulations using the EnergyPlus template calculated building room based on 60 cooling and heating setpoints developed Python Jupyter notebook calculation setup and visualization
- A meta-analysis of five swine diets, a collaboration with Kansas State University peer-reviewed a report "A meta-analysis of life cycle assessments on environmental footprints of five representative finishing swine diets". contributing author to LCA of environmental footprints of a byproduct diet including wheat middling for swine production in the United States

Research Associate, The University of Arkansas, Mechanical Engineering Department, Fayetteville, AR | 2015 – 2019

- Environmental Assessment of Wal-Mart Perishable, Grocery, and General Merchandise Distribution Centers built LCA models of Wal-Mart Stores Inc. distribution center and supermarket network using input data from EnergyPlus DOE ambient and refrigerated warehouse models in different climate zones.
- Multi-criteria Optimization and Assessment of Zero Energy Distribution Centers developed cost and environmental impact optimization model to improve building sustainability provided optimal solutions for zero energy distribution center network.
- Food Distribution in the U.S. designed a framework for environmental assessment of the U.S. cold food supply chain network and calculated the environmental impact of food storing and retailing
- mentored a returning female Mechanical Engineering master's student

Research Associate, The University of Arkansas, Chemical Engineering Department, Fayetteville, AR | 2009 – 2018

- Life Cycle Assessment of Fluid Milk Delivery Systems authored a report and a manuscript about the environmental sustainability of 18 fluid milk delivery systems for Dairy Management Inc.
- Agricultural Systems Modeling contributing author to “Life Cycle Assessment of Corn Production Practices in the United States,” a report prepared for the National Corn Growers’ Association developed Matlab codes for cluster and classification analysis to find dissimilarities between 6,000 agricultural types of machinery based on multiple environmental impacts. co-authored a manuscript for precision guidance of agricultural machinery led sweet corn LCA study for Green Giant.
- Environmental Impact of Livestock Production Systems developed a swine feed database simulated swine diets for Europe and the United States performed linear optimization of U.S. swine diets co-authored a comparative study on European and United States swine production co-authored a manuscript on a retrospective environmental assessment of poultry production in the United States
- Environmental Impact of Dairy Products co-authored a study on regional milk production in the United States co-authored a manuscript on Italian cheese (mozzarella and asiago)
- Providing Alternative Solutions Waste-to-Energy, Waste-to-Food for Acid Whey from Greek Yogurt built five membrane technology scenarios in the SuperPro Designer to treat acid whey built a process model in SuperPro Designer of biogas production from anaerobic digestion of acid whey, and use of biomethane in combined heat and power system

Research Intern, Research Centre for Life Cycle Assessment, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan | 2006 – 2007

- awarded a scholarship by the Japanese International Cooperation Agency (JICA) completed Group Training Course on Research on Biomass Technology authored a report and won the Best Performance Award for the paper and presentation on LCA of biomass-derived fuels in Japan.

C. Non-Academic Experience

2007 – 2009 | Mechanical Engineer, Thermoenergy systems department, Energy Research and Environmental Protection Institute (EKONERG), Zagreb, Croatia

- conducted LCA of woody biomass cogeneration plants to provide techno-economic assessments for Belisce Paper Mill and power plant in Udbina, Croatia selected as a Project Assistant for the National Energy Strategy of the Republic of Croatia co-authored the District Heating Development Strategy in the Republic of Croatia (phase 2/3) study to support local governments in planning and making business decisions related to the district heating
- 2004 – 2007 | Mechanical Engineer, Environmental Protection and Sustainable Development Department, Energy Research and Environmental Protection Institute (EKONERG), Zagreb, Croatia
- conducted LCA of rapeseed biofuel for a feasibility study for rapeseed cultivation in Sisak-Moslovina County with the purpose of biodiesel production as one of the measures of greenhouse gas emission (GHG) mitigation compiled inventory for the National Greenhouse Gas Emission Inventory (CRF Reporter) for the United Nations Framework Convention on Climate Change (UNFCCC) prepared inventory for energy, agriculture, key categories, and uncertainty for the National Greenhouse Gas Emissions Inventory Report submitted to the UNFCCC
- compiled air emission inventory for the Air Emission Data Exchange Module (AE-DEM) submitted to the Convention on Long-range Transboundary Air Pollution (LRATAP) compiled the national road transport emissions report using the European Environment Agency’s (EEA) model for calculation of air pollutant emissions from road transport (COPERT). built LCA model for biodiesel use in public buses in Zagreb using the Global Emission Model for Integrated Systems (GEMIS) software
- 2003 – 2004 | Student Intern, Atmospheric Protection Department, Energy Research and Environmental Protection Institute (EKONERG), Zagreb, Croatia
- compiled inventory for the National Greenhouse Gas Emission Inventory (CRF Reporter) for the United Nations Framework Convention on Climate Change (UNFCCC) compiled the national road transport emissions report using the European Environment Agency’s (EEA) model for calculation of air pollutant emissions from road transport (COPERT).

II. PROFESSIONAL ACTIVITIES

A. Professional Association Participation

- 2024–present | **Committee and Project Member**, Engineering for One Planet Network. Contributed to the development of Canvas modules supporting faculty integration of sustainability into engineering curricula.
- 2024–present | **Working Group Member**, United Nations Environment Programme Life Cycle Initiative Biogenic Carbon LCA Project. Contributed to methodological discussions and consensus building concerning biogenic carbon assessment in life cycle assessment.
- 2023–2024 | **Member**, System Dynamics Society.
- 2023–2024 | **Member**, Society of Building Science Educators.
- 2022–2024 | **Member**, Institute of Industrial and Systems Engineers.
- 2022–present | American Society for Engineering Education (ASEE)
- 2020 – present | The Association for the Advancement of Sustainability in Higher Education (AASHE)
- 2020 – 2021 | Association for Women in Science Mentoring Program (AWIS)
- 2019 – 2021 | National Postdoctoral Association (NPA)
- 2019 – 2020 | MIT Postdoctoral Association (MIT PDA)
- 2017 – present | Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)
- 2016 – present | The American Society of Mechanical Engineers (ASME)
- 2016 – 2018 | Net Impact
- 2015 – 2020 | Forum for Sustainability through Life Cycle Innovation (FSLCI)
- 2015 – 2021 | American Center for Life Cycle Assessment (ACLCA)
- 2015 – present | International Society for Industrial Ecology (ISIE)
- 2015 – present | National Society of Women Engineers (SWE)
- 2012 – present | Society of Environmental Toxicology and Chemistry (SETAC)

B. Professional Honors and Awards

- 2025 | **American Chemical Society Peer Reviewer Recognition**, acknowledging contributions to scholarly peer review.
- 2023 | Society of Building Science Educators (SBSE) scholarship committee funding participation in the Solar Decathlon Faculty Workshop. The fellowship offsets \$1000 in travel.

Below are honors and awards prior to being appointed Assistant Professor

- 2019 | SETAC Early Career Travel Award
- 2019 | MIT Institute Community and Equity Travel Award for SACNAS conference
- 2018 | Selected to participate in the Academic Leadership for Women Engineers (ALWE) program at the WE18 Annual Conference. Oct. 18-20, 2018, Minneapolis, MN, US.
- 2018 | ASSIST travel grant to participate in the LEVERAGE program 2018 SACNAS – The National Diversity in STEM Conference. Oct. 11-13, 2018, San Antonio, TX, US.
- 2017 | ASSIST travel grant to participate in the LEVERAGE program 2017 SACNAS – The National Diversity in STEM Conference. Oct. 18-22, 2017, Salt Lake City, UT, US.
- 2016 | Third place in the poster competition for Burek, J., Kim, D., Tomasula, P., Yee, W., Thoma, G., (2016). “A Second Life: Environmental Impact of Greek Yogurt Whey Treatment,” American Center for Life Cycle Assessment (ACLCA), 2016, Charleston, NC

- 2016 | Second place in a poster competition for Burek, J., & Nutter, D. (2016). “Environmental Sustainability of Distribution-Retail Networks in the United States,” Society of Women Engineers Region C SWE16, 2016, Bentonville AR
- 2016 | Third place in an oral presentation for Burek, J., & Nutter, D. (2016). “Environmental Sustainability of Distribution-Retail Networks in the United States,” Arkansas Academy of Science, Fayetteville, AR
- 2015 | Third place in a poster competition for Burek, J., Thoma, G., Popp, J., Maxwell, C., Ulrich, R., Kim, D., (2015). “Feeding Strategies to Reduce Cost and Environmental Impact of Pig Production in the United States,” Society of Women Engineers WE15 conference, Nashville, TN Best performance award for the paper and presentation on LCA of biomass-derived fuels in Japan, 2007
- 2007 | Scholarship from the Japanese International Cooperation Agency (JICA). Research was performed at the Research Centre for Life Cycle Assessment, National Institute of Advanced Industrial Science and Technology (AIST) 16-1 Onogawa, Tsukuba, Ibaraki, 305-0044 Japan.

C. Professional Development

- Spring 2024 - present | **Faculty Writing Spaces**, UMass Lowell Office of Research and Innovation. Participated in six day-long structured faculty writing sessions for each Academic Year.
- July 2024 - present | **Biogenic Carbon LCA Hybrid Workshop**, United Nations Environment Programme Life Cycle Initiative.
- July 2024 | **Grant Proposal Development Workshops**, UMass Lowell Office of Research Development. Completed workshops on proposal narratives and supplementary documents.
- April 2024 | **NSF CAREER Awardee Panel and Workshop**, UMass Lowell.
- Summer and Fall 2023 | **ASEE Archival Publication Authors Workshop for Engineering Educators**. Participated in structured development of scholarship-of-teaching-and-learning publications.
- Jan 2022 | Writing/Designing Winning Department of Defense (DoD) Proposals live online workshop

Below are professional development activities prior to being appointed Assistant Professor

- Jan – May 2020 | completed the MIT IMPACT 2020 program, which is focused on articulating and communicating research for heightened real-world value. <https://impact-program.org/fellows/>
- Sep 2019 – May 2020 | completed the Annual Massachusetts Association for Women in Science Mentoring Circle Program through which I set development goals for the year. The main learning outcomes from the program were expanding my network, applying for a grant, revising my CV, and support through quarantine caused by COVID-19.
- 2019 | developed skills to become a better negotiator in an active-learning workshop Creative Problem Solving <https://mcaana.wordpress.com/2019/08/17/problem-solving-workshop/?fbclid=IwAR0QiXPc8HvU3dwB-2zeuHD-XtgKzTpzLRPXgJJ-wQ-vg0bnaNrgkgkHhZPA>
- 2019 | completed MIT’s “Path of Professorship”
- 2019 | Led developing countries group during SIMPlanet interactive game workshop that teaches what it will take to prevent the worst effects of climate change. SimPlanet is backed by the Climate Interactive EnROADS Simulator, which runs thousands of calculations in real-time to determine how the policies the world sets now will affect global temperatures decades into the future.
- 2018 | completed the Academic Leadership for Women in Engineering program organized by the Society of Women Engineers WE18 in Minneapolis

III. RESEARCH ACTIVITIES

A. Grants & Contracts (Summary)

Awarded grants and contracts: 14

During my tenure-track appointment at UMass Lowell (2021-2026), I secured or contributed to **14 awarded grants**, including **10 external awards and 4 internal awards**. These awards represent a combined project value of **\$5,123,669**, of which **\$1,872,756 is attributed to me** through the reporting allocations listed for each award.

The external portfolio comprises **\$5,069,169 in total project funding**, with **\$1,826,256 attributed to me**. The Office of Sponsored Programs issued the original Appendix 7 on August 7, 2026. Three external awards were received after August 7, 2026: two Strategic Environmental Research and Development Program (SERDP) awards and the NSF INTERN-ERI MANGO award; therefore, they were amended under official Office of Sponsored Programs Appendix 7. The internal portfolio comprises **\$54,500 in total project funding**, with **\$46,500. attributed to me**.

Finally, the U.S. Department of Energy initially selected Integrated Automation for High-Volume PEM Fuel Cell Stacking and Acceptance Testing in Heavy-Duty Vehicle Applications, for which I served as Senior Researcher. The sponsor subsequently withdrew the award because of changes in federal funding priorities. Accordingly, it is not included in the awarded funding total.

Pending proposals: 5

The pending portfolio represents \$6,367,533 in total requested project funding and \$527,467 in currently documented or calculated proposed credit attributable to me. Final institutional allocations remain to be established for three pending proposals.

B. Grants & Contracts (Awarded)

14. CAREER: Sustainable Textile Industry Through Circular Handling (STITCH)

National Science Foundation | PI | September 2026-August 2031

Total award: \$595,015 | **Associated reporting credit:** \$595,015 (100%)

Status: Awarded

13. INTERN-ERI MANGO: Innovative Methodology for Assessing Networked Geothermal Systems

National Science Foundation | PI | August 2026-February 2027

Total award: \$55,001 | **Associated reporting credit:** \$55,001 (100%)

Status: Awarded | Industry internship supplement with Haley & Aldrich, Inc.

12. Elastomeric Electrospun Membranes for Class 3 Chem/Bio Protection

Strategic Environmental Research and Development Program (SERDP) | Co-Investigator | September 2026-January 2029

Total award: \$1,998,137 | **Associated reporting credit:** \$399,627 (20%)

Status: Awarded | Project lead: James E. Whitten | LCA and sustainability assessment responsibility

11. Multilayer Elastomer Barrier Membranes for Chem/Bio Applications

Strategic Environmental Research and Development Program (SERDP) | Co-Investigator | September 2026-January 2029

Total award: \$1,468,037 | **Associated reporting credit:** \$176,164 (12%)

Status: Awarded | Project lead: Joey Mead | LCA and sustainability assessment responsibility

10. ERI MANGO: Innovative Method for Assessing Networked Geothermal Systems Sustainability

National Science Foundation Environmental Research Initiation | PI | June 2025-August 2027 | NSF Award No. 2502121

Total award: \$199,917 | **Associated reporting credit:** \$199,917 (100%)

Status: Awarded

9. Urban Food Forests for Healthy Soils II

Massachusetts Executive Office of Energy and Environmental Affairs | PI, with Co-PI Joy Winbourne | June 2025-June 2026

Total award: \$76,541 | **Associated reporting credit:** \$38,271 (50%)

Status: Awarded

8. Unutil Heating and Cooling Cost and Greenhouse Gas Emissions Calculator Development

Unutil Corporation | PI, with Co-PI Chris Niezrecki | September 2025-August 2026

Total award: \$100,000 | **Associated reporting credit:** \$75,000 (75%)

Status: Awarded

7. Printed Resistors for Low-Cost Sustainable, Semi-Additive PCBs

NextFlex | Co-Investigator | March 2025-August 2026

Total award: \$489,121 | **Associated reporting credit:** \$244,561 (50%)

Status: Awarded

6. Urban Food Forests for Healthy Soils I

Massachusetts Executive Office of Energy and Environmental Affairs | Co-Investigator | September 2024-August 2026

Total award: \$79,400 | **Associated reporting credit:** \$39,700 (50%)

Status: Awarded

5. Incorporation of Sustainability into Introductory and Project-Based Learning Engineering Courses

ASEE Engineering for One Planet Outreach and Engagement Program | PI | 2023-2024

Total award: \$8,000 | **Associated reporting credit:** \$3,000 (37.5%)

Status: Awarded

University of Massachusetts Lowell Internal Grants and Fellowships

4. Drone-Based Monitoring and Mitigation Analysis of Urban Heat Island Effects in Urban Food Forests and Cool Pavements

University of Massachusetts Lowell Center for Energy Innovation Graduate Student Fellowship | PI, with Co-Investigators Alessandro Sabato and Joy Winbourne | 2025–2026

Total award: \$17,500 | **Associated reporting credit:** \$17,500 (100%)

Status: Awarded

3. Handprint Assessment Framework for Hands-on Climate-Related University Projects

University of Massachusetts Lowell Sustainability Engagement and Enrichment Development Fund | PI | 2023-2024

Total award: \$7,000 | **Associated reporting credit:** \$7,000 (100%)

Status: Awarded

2. The Coolest Schools Have Solar Photovoltaics

University of Massachusetts Lowell Sustainability Engagement and Enrichment Development Fund | Co-PI | 2023-2024

Total award: \$15,000 | **Associated reporting credit:** \$15,000 (100%)

Status: Awarded

1. Developing a Framework for Assessing the Net Benefits and Costs of Urban Food Forests on Environmental Systems

University of Massachusetts Lowell Sustainability Engagement and Enrichment Development Fund | Co-PI | 2023-2024

Total award: \$15,000 | **Associated reporting credit:** \$7,000 (50%)

Status: Awarded

C. Grants & Contracts (Pending)

Pending awards are shown separately and are excluded from the awarded funding totals above.

Building a National Consortium to Accelerate the Deployment of Cost-Effective Cooling Technologies for Water- and Energy-Efficient AI Data Centers and High-Density Industrial Systems

National Science Foundation | PI | Proposed January 2027-December 2027

Proposed total: \$5,080,000 | **Proposed reporting credit:** To be assigned

Status: Pending

Recovery of Critical Minerals from Waste Lithium-Ion Batteries Using Pyrolysis

U.S.-India Science and Technology Endowment Fund | Co-Investigator | Proposed January 2027-December 2028

Proposed total: \$165,000 | **Proposed reporting credit:** \$100,000 (60.6%)

Status: Pending

Acquisition of an Integrated Greenhouse Gas Emissions and Soil Health Monitoring Platform for Research and Education in Urban Agriculture and Forestry at UMass Lowell

USDA National Institute of Food and Agriculture | Co-Investigator | Proposed September 2026-August 2030

Proposed total: \$267,740 | **Proposed reporting credit:** \$133,870 (50%)

Status: Pending

PARTNERSHIP: Urban Food Forests and Ecosystem Service Provisioning

USDA National Institute of Food and Agriculture | Co-Investigator | Proposed September 2026-May 2030

Proposed total: \$787,193 | **Proposed reporting credit:** \$393,597 (50%)

Status: Pending

D. Publications (Summary)

During my tenure-track appointment from 2021 through 2026, I published **10 peer-reviewed journal articles**, all with registered DOIs and appearing across **10 distinct interdisciplinary journals** spanning industrial ecology, sustainability, energy, infrastructure, and systems modeling. These include established journals such as *Applied Energy*, *Journal of Cleaner Production*, *Resources, Conservation and Recycling*, *Sustainable Production and Consumption*, and *The International Journal of Life Cycle Assessment*. Five of these articles were published in 2025 and 2026, demonstrating substantial acceleration in scholarly productivity. My active publication pipeline includes **three manuscripts under review and one manuscript in preparation**, bringing my tenure-period portfolio to **14 published or active manuscript outputs**.

As of August 30, 2026, my publications have received **753 Google Scholar citations**, including **617 citations since 2021**. Thus, approximately **82% of my total scholarly citations have accrued during my tenure-track appointment**. My Google Scholar **h-index is 15**, and my **i10-index is 17**. These indicators demonstrate the growing visibility and sustained influence of my scholarship during the tenure period. Google Scholar metrics are current as of August 30, 2026. Metrics for 2026 represent a partial calendar year.

The publication record also demonstrates the development of my independent research group. Several recent and forthcoming manuscripts are led by doctoral students and other mentees, reflecting the integration of research productivity with graduate-student development and scholarly mentorship.

Formatting key: **Boldface** identifies my name. Underlined author names identify my doctoral students and other research mentees.

E. Academic & Professional Publications (Peer-Reviewed)

Griggs, A. T., Winbourne, J. B., & **Burek, J.** (n.d.). Life cycle greenhouse gas assessment of urban greening strategies: Tree planting, food forests, and Miyawaki forests in New England [Manuscript in preparation].
Status: In preparation for submission to *Journal of Industrial Ecology*.

Boero Vera, A., Zhang, Y., Niezrecki, C., & **Burek, J.** (2026). Evaluating and implementing a reduced-order building–HVAC model for residential retrofit screening calculator [Manuscript submitted for publication].
Status: Submitted to *Energy and Buildings*.

Ghandi, M., Varela, I., Hajian, R., & **Burek, J.** (2026). A prospective and dynamic life cycle assessment framework for the early design stage of geothermal energy networks in cold climates. [Manuscript submitted for publication].
Status: Submitted to *Geothermics*.

Griggs, A. T., Winbourne, J. B., Sabato, A., & **Burek, J.** (n.d.). Quantifying cooling-related health benefits from urban green infrastructure in life cycle impact assessment [Manuscript under review following revision].
Status: Under review following revision at *Sustainable Production and Consumption*.

Boero Vera, A., Schmid, C., Claudio, D., Smith-Walter, A., & **Burek, J.** (n.d.). Climate-integrated energy modeling and life cycle assessment to evaluate U.S. school buildings as energy-resilient community hubs [Manuscript submitted for publication].
Status: Under review at *Journal of Sustainable and Resilient Infrastructure*.

21. Martínez, K., Claudio, D., & **Burek, J.** (2026). Monitoring resilient techno-human-economic systems performance through simulation modeling. *Operations Research Forum*, 7, Article 10.
<https://doi.org/10.1007/s43069-025-00573-3>

20. **Burek, J.**, Griggs, A. T., Winans, K., Sonnert, S., Granda Marulanda, N., & Norris, G. (2025). University handprint framework: Quantifying the positive impacts of university-led sustainability action research. *International Journal of Sustainability in Higher Education*. <https://doi.org/10.1108/IJSHE-10-2024-0755>

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14. **Burek, J.**, Bauer, C., Kirchain, R., Moore, E., Gregory, J., & Norris, G. (2022). Assessing handprint potentials for business eco-innovation. *Sustainable Production and Consumption*, 29, 201–214. <https://doi.org/10.1016/j.spc.2021.10.006>
13. Vahidi, E., Kirchain, R., **Burek, J.**, & Gregory, J. (2021). Regional variation of greenhouse gas mitigation strategies for the United States building sector. *Applied Energy*, 302, Article 117527. <https://doi.org/10.1016/j.apenergy.2021.117527>

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12. Norris, G., **Burek, J.**, Moore, E., Kirchain, R., & Gregory, J. (2021). Sustainability Health Initiative for NetPositive Enterprise handprint methodological framework. *The International Journal of Life Cycle Assessment*. <https://doi.org/10.1007/s11367-021-01874-5>
11. **Burek, J.**, & Nutter, D. (2020). Environmental implications of perishables storage and retailing. *Renewable and Sustainable Energy Reviews*, 133, Article 110070. <https://doi.org/10.1016/j.rser.2020.110070>
10. Thengane, S. K., **Burek, J.**, Kung, K. S., Ghoniem, A. F., & Sanchez, D. L. (2020). Life cycle assessment of rice husk torrefaction and prospects for decentralized facilities at rice mills. *Journal of Cleaner Production*, 275, Article 123177. <https://doi.org/10.1016/j.jclepro.2020.123177>
9. **Burek, J.**, & Nutter, D. (2019). A life cycle assessment-based multi-objective optimization of the purchased, solar, and wind energy for the grocery, perishables, and general merchandise multi-facility distribution center network. *Applied Energy*, 235, 1427–1446. <https://doi.org/10.1016/j.apenergy.2018.11.042>
8. **Burek, J.**, & Nutter, D. (2018). Life cycle assessment of grocery, perishable, and general merchandise multi-facility distribution center networks. *Energy and Buildings*, 174, 118–130. <https://doi.org/10.1016/j.enbuild.2018.06.021>
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F. Academic & Professional Publications - Book Chapters (Peer-Reviewed)

- Ghandi, M., & **Burek, J.** (2026). AI-driven Storm-Resistant Housing Resilience. In F., Pacheco-Torgal, Z., Xin-Yu (Eds.), *AI-Driven Solutions for Greening the Built Environment: Integrating Circular Economy, Smart Technologies, and Resilience*. Elsevier. https://books.google.com/books/about/AI_Driven_Solutions_for_Greening_the_Bui.html?id=ZmEe0gEACAAJ
- Zhao, X., Huning, A., **Burek, J.**, Guo, F., Kropaczek, D., and Pointer, D., 2022. The Role of Hybrid Energy Systems in Decarbonizing Industry: A Carbon Handprint-Based Case Study. In American Nuclear Society, pp. 10–13.

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G. Papers Published in Archival Conference Proceedings (Peer-Reviewed)

- Granda Marulanda, N., **Burek, J.**, & Zhang, Y. (2026). Enhancing STEM faculty sustainability curricular competencies using the Engineering for One Planet initiative. In *Proceedings of the 2026 American Society for Engineering Education Annual Conference & Exposition*. American Society for Engineering Education. <https://nemo.asee.org/public/conferences/374/papers/52511>
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- Smith, A., Aoki, E., Ghandi, M., Thompson, C., **Burek, J.**, & Chandra, K. (2023). Human balance models for engineering education: An innovative graduate co-creation project. In *Proceedings of the American Society*

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- Burek, J.**, Kim, D., Tomasula, P., Yee, W., Hestekin, J., & Thoma, G. (2016). Reducing environmental impact of Greek yogurt is the whey to go. In *Proceedings of the 10th International Conference on Life Cycle Assessment of Food*. University College Dublin. <http://lcafood2016.org/>
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H. Papers Published in Archival Conference Proceedings (Non peer-reviewed)

N/A

I. Patents

N/A

J. Other Scholarly and Creative Accomplishments

- Burek, J.**, Winbourne, J., Boero Vera, A. (2026). *FoodForestLab* [Open-source educational web application in development]. University of Massachusetts Lowell. <https://bobbyleary.com/foodforest/design>
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- Magavi, Z., Dayalu, A., Cheney, L. S., Ryan, E., Allen, A. B., O'Mahony, R. O., Kingsley, D., Rooney-Varga, J. N., Buonocore, J. J., Varela, I., Escobar-Pemberthy, N., **Burek, J.**, Iliff, A., Alberto Escobar, A., Ghandi, M., Milisci, D. D., Bender, K., & Garduno, C. (2026). Strategic scaling of geothermal energy networks in the Commonwealth of Massachusetts: A roadmap.
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- Muthuraman, T., & **Burek, J.** (2026). Survey Design for Understanding Lived Experience in Heating Transitions. Honors Research Report. Department of Mechanical and Industrial Engineering, University of Massachusetts Lowell.
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- Winbourne, J., **Burek, J.**, Griggs, A., (2026). Urban Food Forests for Healthy Soils Final Report (C148 and C266). Massachusetts Executive Office of Energy and Environmental Affairs. <https://www.mass.gov/info-details/massachusetts-healthy-soils-initiative>
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Burek, J., Chu, L.W., Lutz, N., (2021). Proposals for Student Education in the 2021 MIT Climate Action Plan <https://drive.google.com/drive/folders/1Wp-CCdLHCme8-MdvDFbnlMxmHTaYl5NS>

Burek, J., Gregory, J., Kirchain, R., 2020. Can Passive House and Zero Energy Building Standards Promise a Low-carbon Future? Research Brief <https://cshub.mit.edu/news/research-brief-passive-houses-and-zero-energy-buildings>

Burek, J., Kirchain, R., Gregory, J., Norris, G., 2019. The Life Cycle Assessment of Shared Electric Scooters Final Report Prepared for the Portland Bureau of Transportation.

Burek, J., [dissertation], 2018. Towards Environmentally Sustainable and Cost-Effective Food Distribution in the U.S. Theses Diss. The University of Arkansas. <https://scholarworks.uark.edu/cgi/viewcontent.cgi?article=4534&context=etd>

Thoma, G., Matlock, M., **Burek, J.**, Taylor, B., Bandekar, P., Hickman, J., Thoma, A., (2018). Life Cycle Assessment of Corn Production Practices in the United States. Report prepared for the National Corn Growers Association.

Boles, E., Sandefur, H., **Burek, J.**, Bandekar, P., Thoma, G., Matlock, M., Ulrich, R., 2015. Comparative Life Cycle Assessment of pork production in the United States and the European Union. Report prepared for the National Pork Board. <https://www.pork.org/research/comparative-life-cycle-assessment-production-pork-european-union-united-states/>

- Thoma, G., Matlock, M., Putman, W., **Burek, J.**, 2015. A Life-Cycle Analysis of Land Use in US Pork Production. Report prepared for the National Pork Board. <https://www.pork.org/research/a-life-cycle-analysis-of-land-use-in-us-pork-production/>
- Burek, J.**, Thoma, G., Popp, J., Maxwell, C., and Ulrich, R., (2015). Feeding Strategies to Mitigate Cost and Environmental Footprint of Pig Production in the US; <http://articles.extension.org/pages/72746/feeding-strategies-to-mitigate-cost-and-environmental-footprint-of-pig-production-in-the-us>
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- Ministry of Economy, Labor, and Entrepreneurship (2008). Adaptation and Upgrade of Croatian Energy Strategy – Green Book. Zagreb, Croatia (co-author)
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- Burek, J.**, Sagisaka, M., (2007). Life Cycle Assessment of Biomass Derived Fuels. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan
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- Basic, F., Kisic, I., Mesic, M., Mioc, B., Pavic, V., Pejic, I., ... **Burek, J.**, (2006). Second, Third and Fourth National Communication of the Republic of Croatia under the United Nations Framework Convention on Climate Change. Zagreb, Croatia
- EKONERG. (2005). Life Cycle Assessment for Biodiesel Use in Public Buses in Zagreb using Global Emission Model for Integrated Systems. IEA Bioenergy Task 38. Zagreb, Croatia (co-author)
- Juric, Ž., Hublin, A., **Burek, J.**, Fijan-Parlov, S., Vešligaj, D., Mesic, M., (2005). Republic of Croatia Ministry of Environmental Protection, Physical Planning and Construction National Inventory Report for the Period 1990 - 2003 Inventory of Anthropogenic Emissions of all Greenhouse Gases.

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Burek, J. 2004. Estimation of Emissivity Values of Building Façades by Thermography

K. Research Publicity and Public Scholarship

Coupal, B. (2026, July 10). Engineering professor receives NSF CAREER award for sustainable textiles research. *UMass Lowell*. <https://www.uml.edu/news/stories/2026/burek-nsf-career-award.aspx>

Loss, H. (2026, April 21). New Englanders patch holes to make sustainable wardrobes [Interview with Jasmina Burek]. *GBH*. <https://www.wgbh.org/news/local/2026-04-21/new-englanders-patch-holes-to-make-sustainable-wardrobes>

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O'Hara, S. (2024, March 19). Fast fashion is killing our planet [Feature concerning Jasmina Burek's research]. *The Connector*. <https://umlconnector.com/2024/03/fast-fashion-is-killing-our-planet/>

Armany, R. (2023). *Feeling thrifty: How the secondhand market is changing the fashion game* [Radio interview]. GBH Morning Edition.

Isaacs-Thomas, B. (2023). How to slash emissions across the U.S. economy, according to experts [Interview with Jasmina Burek]. *PBS NewsHour*. <https://www.pbs.org/newshour/science/how-to-slash-emissions-across-the-u-s-economy-according-to-experts>

Manav, I. B., & Arzuaga Garcia, I. M. (2022, March 30). Shedding light on faculty applications: Insights from Assistant Professor Dr. Jasmina Burek [Interview]. *MIT Civil and Environmental Engineering Communication Lab*. <https://mitcommlab.mit.edu/cee/2022/03/30/shedding-light-on-faculty-applications-insights-from-assistant-professor-dr-jasmina-burek/>

Mossman, M. (2022). Energy efficiency options for all budgets [Interview with Jasmina Burek]. *Efficient Windows Collaborative*. <https://efficientwindows.org/energy-efficiency-options-for-all-budgets/>

Burek, J. (2022, September 1). The most cost-effective energy efficiency investments you can make—and how the new Inflation Reduction Act could help. *The Conversation*. <https://theconversation.com/the-most-cost-effective-energy-efficiency-investments-you-can-make-and-how-the-new-inflation-reduction-act-could-help-188506>

L. Presentations

a. Invited Seminar Presentations

2026

Burek, J. (2026, July 14). *Introduction to life cycle assessment. Life cycle inventory*. Lecture presented to the Research, Academics and Mentoring Pathways (RAMP) Program, University of Massachusetts Lowell, Lowell, MA.

Burek, J. (2026, July 16). *Introduction to life cycle assessment. Life cycle impact assessment*. Lecture presented to the Research, Academics and Mentoring Pathways (RAMP) Program, University of Massachusetts Lowell, Lowell, MA.

Burek, J. (2026, July 13). *Introduction to life cycle assessment. Goal and scope [Lecture]*. Research, Academics and Mentoring Pathways (RAMP) Program, Francis College of Engineering, University of Massachusetts Lowell, Lowell, MA.

Strack, G., **Burek, J.**, Akyurtlu, A., Bennett, J., Ghandi, M., Boero Vera, A., Koop, N., Jessop, G., & Vesce, J. (2026, September 24). *Printed resistors for low-cost sustainable, semi-additive PCBs: Quarter 5 update* [Invited webinar]. NextFlex.

Strack, G., **Burek, J.**, Akyurtlu, A., Bennett, J., Ghandi, M., Boero Vera, A., Koop, N., Jessop, G., & Vesce, J. (2026, June 4). *Printed resistors for low-cost sustainable, semi-additive PCBs: Quarter 4 update* [Invited webinar]. NextFlex.

Strack, G., **Burek, J.**, Akyurtlu, A., Bennett, J., Ghandi, M., Boero Vera, A., Koop, N., Jessop, G., & Vesce, J. (2026, March 19). *Printed resistors for low-cost sustainable, semi-additive PCBs: Quarter 3 update* [Invited webinar]. NextFlex.

Burek, J. (2026). *Sustainability in engineering design: From footprints—awareness of climate change impacts—to handprints—the driving forces of positive changes* [Invited presentation]. Girls in Engineering and Robotics Symposium, Andover Robotics Club, Andover, MA, United States.

2025

Strack, G., **Burek, J.**, Akyurtlu, A., Bennett, J., Ghandi, M., Boero Vera, A., Koop, N., Jessop, G., & Vesce, J. (2025, December 11). *Printed resistors for low-cost sustainable, semi-additive PCBs: Quarter 2 update* [Invited webinar]. NextFlex.

Burek, J. (2025, October 17). *UMass Lowell Food Forest initiative: A partnership among sustainability, grounds, well-being, faculty, and students* [Invited presentation]. Golden Alumni Luncheon, University of Massachusetts Lowell, Lowell, MA, United States.

Burek, J. (2025, December 3). *Life-cycle thinking for sustainable polymers and packaging* [Guest lecture]. PLAS 5960, Sustainable Polymers and Additives, University of Massachusetts Lowell, Lowell, MA, United States.

Griggs, A. T., & **Burek, J.** (2025, October 7). *Rooted resilience at the UMass Lowell Food Forest* [Workshop presentation]. Massachusetts Envirothon Workshop, Lowell, MA, United States.

Griggs, A. T., & **Burek, J.** (2025, October 1). *Rooted resilience at the UMass Lowell Food Forest* [Invited lecture]. *Architectural Utopias*, Lowell, MA, United States.

Strack, G., **Burek, J.**, Akyurtlu, A., Bennett, J., Ghandi, M., Boero Vera, A., Koop, N., Jessop, G., & Vesce, J. (2025, September 2). *Printed resistors for low-cost sustainable, semi-additive PCBs: Quarter 1 update* [Invited webinar]. NextFlex.

Burek, J. (2025, July 31). *From footprints to handprints: Measuring positive sustainability impacts of research* [Invited lecture]. Engineering for One Planet, Portland, OR, United States.

Griggs, A. T., & **Burek, J.** (2025, February 5). *Rooted resilience at the UMass Lowell Food Forest* [Workshop presentation]. Massachusetts Envirothon Workshop, Lowell, MA, United States.

2024

Smith, A., Winbourne, J. B., & **Burek, J.** (2024, October 25). *Introduction to life cycle assessment and food forests* [Invited lecture]. Department of Environmental Studies and Sustainability, Hampshire College, Amherst, MA, United States.

Burek, J. (2024, October 4). *Embodied energy and embodied carbon in passive-house designs* [Invited seminar]. Boston University, Boston, MA, United States.

Smith-Walter, A., & **Burek, J.** (2024, October 2). *The Massachusetts textile disposal ban: At the intersection of fast fashion and sustainability* [Guest lecture]. Art and Design class, University of Massachusetts Lowell, Lowell, MA, United States.

Smith, A., Winbourne, J. B., & **Burek, J.** (2024, September 16). *Introduction to food forests and design* [Invited lecture]. Urban Design for Environmental Justice, Department of Art and Design, University of Massachusetts Lowell, Lowell, MA, United States.

Smith-Walter, A., and **Burek, J.** 2024. The Massachusetts Textile Disposal Ban: At the Intersection of Fast Fashion and Sustainability, Northeast Recycling Council (NERC) Textile Forum, Virtual, September 11.

Burek, J. 2024. Measuring Sustainability Effectiveness of Project-Based Courses Using Handprint Assessment, Engineering for One Planet, Portland, OR, June 27.

Burek, J. 2024. Life Cycle Assessment and Environmental Product Declarations for PV, NREL Hands-On Photovoltaic Experience (HOPE), NREL, Golden, CO, July 14–19.

Burek, J. (2024, June 27). *Measuring sustainability effectiveness of project-based courses using handprint assessment* [Invited presentation]. Engineering for One Planet, Portland, OR, United States.

Burek, J. (2024, June 10). *Foundations of handprint assessment for quantifying the good that organizations do* [Invited webinar]. Boeing.

Boero Vera, A., Ghandi, M., & **Burek, J.** (2024, June 5). *Life cycle assessment* [Invited webinar]. Council on Women in Energy and Environmental Leadership.

Burek, J. (2024, February 12). *Handprint assessment* [Guest lecture]. Undergraduate course in the Sustainable Biomaterials Program, Virginia Tech, Blacksburg, VA, United States.

2023

Burek, J. (2023, September 8). *Embodied energy and embodied carbon in passive-house designs* [Invited webinar]. Advanced Resource Efficiency Center, Pennsylvania State University.

Bakshi, B., **Burek, J.**, Greene, J., Shonnard, D., Bergerson, J., & Hannouf, M. (2023, April 19). *Current topics in life cycle assessment in academia* [Invited panel presentation]. American Center for Life Cycle Assessment LCA Institute.

2022

Burek, J. (2022, Fall). *Towards net-zero emissions in the building sector* [Guest lecture]. School for Environment and Sustainability, University of Michigan, Ann Arbor, MI, United States.

Burek, J., Granda, N., Sustainability Footprint-Handprint Workshop at UniValle Colombia. Workshop for the Commission on Diversity, Equity, & Inclusion (CDEI) Professional Development Committee American Society for Engineering Education (ASEE), Jul 11 2022 (virtual)

Burek, J., Kirchain, R., Gregory, J., Norris, G., Measuring Sustainability Education Impact through Handprints. Workshop for International Symposium for Sustainable Systems and Technology (ISSST) conference, Jun 21-23 2022, Pittsburgh, PA

Below are seminar presentations prior to being appointed Assistant Professor

2020

Burek, J., Pacheco, Z., 2020. Empowering Students to Become Agents of Change interactive workshop for 2020 SACNAS — Community College Day (virtual) – organizer

Lokapally, A., Haji, M., Burek, J., Chang, H., Sled, S., Nguyen, D., Choueiter, G., Zacharia, G., Making the Cut - Job Searching During a COVID-19 Economy: A Panel Discussion – Series II. 08/28/2020, MIT, Cambridge, MA (virtual) <https://www.youtube.com/watch?v=ag4JKSv47vg&t=1s> – facilitator and moderator

Burek, J., Nakielski, M., Ramirez, M.P., Africa, J. 2020. Eyes Wide Open: Preventing Pandemics. Panel discussion. Boston GreenFest 2020 Virtual Business Summit, Aug 20-21, 2020, Boston, MA (virtual) <https://www.bostongreenfest.org/panelists-presenters> (virtual) – moderator and panelist

Burek, J., Moore E., 2020. LCA Workshop: A Short Course on OpenLCA-Part III. 06/30/2020, Cambridge, MA. (virtual)

Barbour, N., Hasnine, S., Burek, J., Cherchi, E., Mannering, F., Grocholski, B., Publish or Perish, A Panel Discussion. 06/23/2020, MIT, Cambridge, MA (virtual) https://www.youtube.com/watch?v=q_N1LLuZ6Ww&t=13s

Burek, J., Barbour, N., Hasnine, S., Babbitt, C., Ghering, M., Sikes, H., Thaler, J., Bathe, M., Making the Cut - Job Searching During a COVID-19 Economy: A Panel Discussion. 06/09/2020, MIT, Cambridge, MA (virtual) <https://www.youtube.com/watch?v=sDBuIB-QVF0&t=4s>

Moore E., Burek, J., 2020. LCA Workshop: A Short Course on OpenLCA-Part II. 05/21/2020, Cambridge, MA. (virtual)

Burek, J., Moore E., 2020. LCA Workshop: A Short Course on OpenLCA-Part I. 04/02/2020, Cambridge, MA. (virtual)

2016

Burek, J., (2016). *Workshop: I'm an Alien, I'm a graduate student in the United States*. World's Largest Conference for Women Engineers (WE16), Oct. 27-29, 2016, Philadelphia, PA, US;
<http://societyofwomenengineers.swe.org/learning/conferences-and-events>

b. Conference Presentations (without a paper)

2026

Boero-Vera, A., Zhang, Y., Niezrecki, C., & **Burek, J.** (2026, June 17). *Decision-oriented, parsimonious modeling for household heating and cooling retrofit decisions in cold climates* [Conference presentation]. International Symposium on Sustainable Systems and Technology, Rochester, NY, United States.

Ghandi, M., Varela, I., & **Burek, J.** (2026, June 16–18). *Time-explicit and dynamic-climate life cycle assessment of geothermal energy networks in cold climates* [Conference presentation]. International Symposium on Sustainable Systems and Technology, Rochester, NY, United States.

Griggs, A. T., Winbourne, J. B., Sabato, A., & **Burek, J.** (2026, June 16–18). *Quantifying cooling-related health benefits from urban green infrastructure in life cycle impact assessment* [Conference presentation]. International Symposium on Sustainable Systems and Technology, Rochester, NY, United States.

Burek, J., & Keough, C. (2026, June 16–18). *From classroom to community: A university handprint framework for long-term sustainability impacts of student engineering design and manufacturing* [Conference presentation]. International Symposium on Sustainable Systems and Technology, Rochester, NY, United States.

Burek, J., Winbourne, J. B., & Reherman, C. (2026, April 16). *Put urban soil on trial and make a food forest action plan* [Conference workshop]. Actionable Science for Urban Sustainability Unconference, Alcalá de Henares, Spain.

Strack, G., Akyurtlu, A., Bennett, J., Boerovera, A., **Burek, J.**, Ghandi, M., Koop, N., & Tighe, G. (2026, June 10). *Printed Embedded Resistors for Semi-Additive PCBs: Identifying Materials and Manufacturing Gaps that Limit TRL/MRL Transition*.

2025

Burek, J., & Winbourne, J. B. (2025, November 11). *Empowering higher education to lead with climate handprints* [Conference presentation]. Higher Education for Climate Action Pavilion, United Nations Climate Change Conference COP30, Belém, Brazil.

Burek, J., Winans, K., Griggs, A. T., Granda Marulanda, N., & Norris, G. (2025, September 9–12). *Leveraging handprints to accelerate adoption of sustainability principles in engineering education and quantify their positive contributions* [Conference presentation and poster]. 12th International Conference on Life Cycle Management, Palermo, Italy.

Griggs, A. T., & **Burek, J.** (2025, September 9). *Extended Life Cycle Assessment Ecosystem Services Method for Urban Green Infrastructure*. [Conference presentation]. The 12th International Conference on Life Cycle Management (LCM 2025) “From Global to Local”, Palermo, Italy.

Monbleau, H., Smith, A. T., Winbourne, J. B., & **Burek, J.** (2025, June 16–19). *Collective impact theory at work: A partnership among sustainability, grounds, well-being, faculty, and students* [Conference presentation]. International Health Promoting Campuses Conference, Limerick, Ireland.

- Burek, J.** (2025, April 7). *Integrating local climate regulation with life cycle assessment to comprehensively evaluate environmental burdens and benefits of urban green infrastructure* [Conference presentation]. XI International Conference on Life Cycle Assessment in Latin America, Mexico City, Mexico.
- Burek, J.** (2025, April 7). *Assessing networked geothermal systems for a cold climate community: dynamic life cycle modeling for environmental and energy equity benefits.* [Conference presentation]. XI International Conference on Life Cycle Assessment in Latin America (CILCA 2025), Mexico City, Mexico.
- Smith, A. T., & Burek, J. (2025, April 7). *Life cycle assessment of residual hemp waste from cannabidiol production* [Virtual conference presentation]. XI International Conference on Life Cycle Assessment in Latin America, Mexico City, Mexico.
- Smith, A. T., & Burek, J. (2025, April 1). *How can we better compare methods to reduce the urban heat island effect?* [Conference presentation]. Student Research and Community Engagement Symposium, University of Massachusetts Lowell, Lowell, MA, United States.
- Burek, J.** (2025, April 1). *UMass Lowell Food Forest: A community-engaged living classroom for sustainable campus development.* [Conference presentation]. Student Research and Community Engagement Symposium, UMass Lowell.
- Griggs, A. T., & Burek, J. (2025, February 5). *Rooted Resilience at the UMass Lowell Food Forest.* Massachusetts Envirothon Workshop.
- Ghandi, M., & Burek, J. (2025, April 11). *Evaluating the environmental and energy equity benefits of networked geothermal systems.* [Conference presentation]. BARI Conference 2025: Greater Boston's Annual Insight-to-Impact, Roxbury Community College.

2024

- Ormond, C., Burek, J., and Smith-Walter, A. 2024. HELO: Researching the Effects of the Massachusetts Textile Disposal Ban with Emerging Scholars. UMass Lowell, November 26.
- Burek, J.** Smith, A., Winbourne, J.B, 2024. Extended Life-Cycle Assessment-Ecosystem Services Method for Urban Green Infrastructure, UML Faculty Symposium, UMass Lowell, November 21. (lightning talk).
- Burek, J.** Boero Vera, A., 2024. Enhancing Energy Resilience in U.S. School Buildings Through a Dynamic Life Cycle Assessment Approach, UML Faculty Symposium, UMass Lowell, November 21. (lightning talk).
- Burek, J.** Mahsa, G., 2024. Innovative Method for Assessing Networked Geothermal Systems (MANGO) Sustainability, UML Faculty Symposium, UMass Lowell, November 21. (lightning talk).
- Ghandi, M., and Burek, J. 2024. Comparative Life Cycle Assessment of Networked Geothermal and Conventional HVAC Systems: A Pathway to Sustainable Climate Solutions in Massachusetts, [Conference presentation], SACNAS, Phoenix, AZ, October 31–November 2.
- Boero Vera, A., and Burek, J. 2024. Towards Sustainable Energy Resilience: Integrating Renewable Solutions with a Life Cycle Perspective in School Buildings, [Conference presentation], SACNAS, Phoenix, AZ, October 31–November 2.
- Smith-Walter, A., and Burek, J. 2024. The Massachusetts Textile Disposal Ban: At the Intersection of Fast Fashion and Sustainability, UMass Lowell, October 2.

- Boero Vera, A., Schmid, C., Medina, L., Claudio, D., Davis, J.-M., Jiusto, S., Smith-Walter, A., and **Burek, J.** 2024. From Crisis to Opportunity: Enhancing Energy Resilience in U.S. School Buildings, Massachusetts Institute of Technology and Harvard University, Cambridge, MA, August 12–15.
- Burek, J.**, Zhang, Y., Ghandi, M., Schmid, C., Vahidi, E., Gregory, J., and Kirchain, R. 2024. The Role of Passive-Solar House Design in Enhancing Sustainability: A Comprehensive Life Cycle Assessment Across the U.S., Massachusetts Institute of Technology and Harvard University, Cambridge, MA, August 12–15.
- Smith, A. T., Roulier, A., Granda Marulanda, N., McGregor, L., and **Burek, J.** 2024. Life Cycle Assessment of Biogas Production from Hemp Crop Residue Using Process Modeling, International Symposium on Sustainable Systems and Technology (ISSST), Baltimore, MD, June 18–20. (oral presentation).
- Burek, J.** 2024. Foundations of Handprint Assessment for Quantifying the Good that Organizations Do, Boeing Webinar, Virtual, June 10. (oral presentation).
- Boero, A., Ghandi, M., and **Burek, J.** 2024. Lifecycle Assessment, The Council on Women in Energy & Environmental Leadership (CWEEL), Virtual, June 5. (oral presentation).
- Boero Vera, A., Schmid, C., Medina, L., Claudio, D., Davis, J.-M., Jiusto, S., Smith-Walter, A., and **Burek, J.** 2024. Building Energy Resilience and Sustainability in U.S. School Infrastructure, International Symposium on Sustainable Systems and Technology (ISSST), Baltimore, MD, June 18–20. (oral presentation).
- Smith, A., Amatucci, A., Smith, K., and **Burek, J.** 2024. Campus-Based Recycling in Response to the 2022 Textile Disposal Ban in Massachusetts: A Narrative Policy Framework (NPF) Exploration, Annual Midwest Political Science Association Conference, Syracuse University, New York, May 15–17. (oral presentation).
- Amatucci, A., Smith, A., and **Burek, J.** 2024. The Massachusetts Textile Disposal Ban, at the Intersection of Fast Fashion and Sustainability, UMass Lowell Student Symposium, UMass Lowell. (video presentation – awarded).
- Martínez K., Ghandi, M., **Burek, J.** and Claudio, D., 2024. Advancing Resilience and Survivability of Buildings by Integrating Life-Cycle Assessments with Multi-Objective Linear Programming, IISE Annual Conference and Expo, May 18-22, 2024. (oral presentation)
- O'Hara, S. 2024. Fast Fashion Is Killing Our Planet. The Connector, March 19. [Online]. Available: <https://umlconnector.com/2024/03/fast-fashion-is-killing-our-planet/>. (media).

2023

- Burek, J.** (2023, November 1). *The coolest schools have solar photovoltaics* [Lightning presentation]. UMass Lowell Faculty Symposium, Lowell, MA, United States.
- Ghandi, M. **Burek, J.**, 2023. Environmental-friendly and affordable design alternatives for resilient housing in Miami, Florida International Symposium on Sustainable Systems and Technology (ISSST) 2023, June 13-15, 2023, Fort Collins, CO (oral presentation)
- Zhang, Y., **Burek, J.**, 2023. Passive Design and Photovoltaics for Zero-Energy Residential Buildings in Different US Regions International Symposium on Sustainable Systems and Technology (ISSST) 2023, June 13-15, 2023, Fort Collins, CO (oral presentation)

Smith, A., Burek, J. 2023. Transforming A University Lawn Into A Food Forest Can Result In Handprints, International Symposium on Sustainable Systems and Technology (ISSST) 2023 June 13-15, 2023, Fort Collins, CO (oral presentation)

Ghandi, M. Burek, J., 2023. A cost-effective and energy-efficient design solutions for resilient housing in Miami, Florida IISE Annual Conference 2023 May 20-23, 2023 New Orleans, LA

Team of Mechanical and Electrical Engineering Undergraduate students, with faculty mentorship by Dr. Jasmina Burek and Dr. Cordula Schmid A zero-energy residence designed by UMASS Lowell DOE Solar Decathlon Design Challenge 2023, April 20–23, 2023 Golden, CO (oral presentation)

Burek, J. 2023. Passive Solar Home Design for Low-cost Zero-energy Housing in the United States, Global Energy Meet (GEM) 2023, Boston, MA Mar 6-8, 2023 (oral presentation)

Smith, A., Burek, J. 2023. Life Cycle Assessment and Cost of Biogas Production from Cannabidiol Hemp Residues, Global Energy Meet (GEM) 2023, Boston, MA Mar 6-8, 2023 (oral presentation)

2022

Burek, J., Hauschild, L., Kipper da Silva, M, Krabbe E.L., Andretta, I. 2022. Multi-objective diet optimization: Brazilian pig diets case study, LCA FOODS 2022, Lima, Peru Oct 12-14, 2022 (oral presentation)

Dossantos, J., **Burek, J.**, Claudio D., 2022. Transforming Closed Schools into Community Centers in Puerto Rico. Honors Project, UML (oral presentation)

Burek, J. 2022. Becoming climate positive: Reducing our carbon footprint is not enough, we urgently need to increase our handprint. Conversation Starter UML

Martinić, O., Burek, J., Salajpal, K. 2022. Life cycle assessment of conventional and alternative rations fattening pigs in Croatia 73rd Annual Meeting of EAAP in Porto. Sep 5-9, 2022, Porto, Portugal.

Zhao, X., Huning, A., **Burek, J.**, Guo, F., Kropaczek, D., Pointer, D. 2022. A Carbon Handprint Perspective on Industrial Decarbonization with Hybrid Energy Systems. Applied Energy Symposium: MIT A+B 2022, Jul 5-8 2022, Cambridge, MA.

RAMP 2022 cohort, Smith, A., Burek, J., 2022. From Trash to Treasure (oral presentation). UMLRAMP 2022

Smith, A., Granda, N., McGregor, M., **Burek, J.** 2022. Environmental and Cost Assessment of Bigas Production from Hemp Crop-Residue for Enabling Circular Economy Transition of CBD Production Systems (oral presentation) International Symposium for Sustainable Systems and Technology (ISSST) conference, Jun 21-23 2022, Pittsburgh, PA

Burek, J., Puglisi, A., Bancroft E., 2022. Circular & Sustainable Garments for Refugees 2022 Industrial Ecology Gordon Research Conference, Jun 12-17, 2022, Newry, ME

Burek, J., E. Moore, C. Bauer, J. Gregory, R. Kirchain & G. Norris, 2022. Handprint Assessment: A Case Study of Milk Packaging Eco-Innovation, 2022 Industrial Ecology Gordon Research Conference, Jun 12-17, 2022, Newry, ME

Smith, A., Martinic, O., Zhang, Y., Davison, B. Burek, J., 2022. Overview of Collaborative Sustainability Research BUilding REsilience through Knowledge (BUREK) Lab at University of Massachusetts Lowell. Student Leadership Conference, University of Massachusetts Lowell, March 27, 2022, Lowell, MA

2021

Burek, J., 2021. A comparative assessment of current swine rations and alternative formulations obtained by incorporating environmental criteria. 82nd Minnesota Nutrition Conference, 09/22/2021-09/23/2021, Mankato, MN

Below are conference presentations prior to being appointed Assistant Professor

2020

Burek, J., 2020. Educating Students in the Business Schools through Project-Based Courses to Advance Sustainability. Global Conference on Sustainability in Higher Education (GCSHE) (virtual)

Burek, J., Moore, E., Gregory, J., Kirchain, R., Norris, G., 2020. The aseptic carton milk package is making positive changes off-the-shelf. American Center for Life Cycle Assessment (ACLCA) 2020 Virtual Conference September 22-24, 2020 (virtual)

Thengane, S.K., **Burek, J.**, Kung, K., D.L., S., Ghoniem, A.F., 2020. A life cycle assessment of biomass torrefaction in inert and partially oxidative conditions. Applied Energy Symposium: MIT A+B, Aug 12-14, 2020, MIT, Cambridge, MA (virtual). <https://www.youtube.com/watch?v=QnO52QRfrgY&t=2s>

Burek, J., Addressing Inequality to Achieve Sustainability after COVID-19, Diversity Journal Club, Aug 12, 2020, MIT, Cambridge, MA (virtual).

Burek, J., Moore, E., Kirchain, R., Gregory, J., Norris, G., 2020. Methodological Framework for the Sustainability and Health Initiative for NetPositive Enterprise (SHINE) Handprint Assessment. Virtual International Symposium for Sustainable Systems and Technology (ISSST) conference, 06/29/2020 (virtual) <https://youtu.be/dhHIX844Xro>

Moore, E., **Burek, J.**, Gregory, J., Kirchain, R., Norris, G., 2020. A Handprint Assessment of Zero-Waste to Landfill (ZWTL) Strategies. Virtual International Symposium for Sustainable Systems and Technology (ISSST) conference, 06/29/2020 (virtual)

Burek, J., 2020. Measuring Sustainability Effectiveness of Project-Based Courses. MIT IMPACT Program, Spring 2020, 06/02/2020 (virtual)

Burek, J., Gregory, J., Kirchain, R., 2020. Can Passive House and Zero Energy Building Standards Promise a Low-carbon Future? CShub Spring TAG meeting 05/07/2020, Cambridge, MA (virtual) <http://cshub.mit.edu/news/research-brief-passive-houses-and-zero-energy-buildings>

2019

Burek, J., 2019. From Footprints: Awareness of Climate Change Impacts on Handprints: The Driving Forces of Positive Changes. MIT Class Industrial Ecology and Materials 3.081-3.560, 12/04/2019, Cambridge, MA. (oral presentation)

Burek, J., Moore, E., Gregory, J., Kirchain, R., Norris, G., 2019. Lowering the Actor's Footprints and Increasing Their Handprints: A Win-win Methodological Approach to Achieve the Net Positive Development. SETAC North America 40th annual Meeting, 11/3-11/7/2019, Toronto, ON, CA; <https://toronto.setac.org/> (oral presentation)

Burek, J., 2019. Week 6: Life Cycle Impact Assessment (LCIA) IMPACT World+. Harvard Extension School Class ENVR E-151, Cambridge, MA. (oral presentation)

- Burek, J.**, Gregory, J., Norris, G., 2019. Introducing Handprints: A New Paradigm for Sustainable Development. The SACNAS National Diversity in STEM Conference 10/31-11/02/2019, Honolulu, Hawai'i; <https://www.2019sacnas.org/> (oral presentation)
- Burek, J.**, Gregory, J., 2019. A Streamlined Life Cycle Assessment of Residential Buildings Using the Early-Design Environmental Impact Tool. CShub TAG Meeting, Cambridge, MA (virtual)
- Burek, J.**, Liu, J., Gregory, J., 2019. Developing an Early-Design Environmental Impact Tool for Commercial Buildings Using the Streamlined Life Cycle Assessment. CShub Seminar, Cambridge, MA. 10/21/2019 (oral presentation)
- Burek, J.**, 2019. Handprint Methodology: State of the Art Summary. MSL Seminar, 10/10/2019, Cambridge, MA. (oral presentation)
- Burek, J.**, 2019. What are the environmental impacts of e-scooters? MSL Seminar, 10/03/2019, Cambridge, MA. (oral presentation)
- Burek, J.**, Gregory, J., Norris, G., 2019. Handprints: The Footprint - based Assessments of the Impacts of the Positive Change(s). ACLCA 2019, 09/24-09/26/2019, Tucson, AZ; <https://aclca.org/lca-xix/> (oral presentation)
- Burek, J.**, Gregory, J., Kirchain, R., 2019. A whole life building environmental impact calculator for early design stages. CShub TAG Meeting, Cambridge, MA. 3/20/2019 (oral presentation)
- Burek, J.**, 2019. The Good, the Better, and the Zero Energy Distribution Center Network. MSL Seminar, 03/15/2019, Cambridge, MA. (oral presentation)

2018

- Burek, J.**, Nutter, D., (2018). *Environmental impact network analysis of U.S. cold food supply chain post-processing storage*. SETAC North America 39th Annual Meeting, Nov. 4-8, 2018, Sacramento, CA (oral presentation).
- Burek, J.**, Nutter, D., (2018). *The good, the better, and the zero-energy distribution center networks*. SETAC Europe 24th LCA Symposium, Sep. 24-26, 2018, Vienna, Austria (oral presentation).

2017

- Burek, J.**, Kim, D., Tomasula, P., Yee, W., Thoma, G., (2017) Consequences of Greek yogurt acid whey treatment. 23rd SETAC Europe LCA Case Study Symposium - Life Cycle Assessment for Decision Support, Nov. 27-28, 2017, Barcelona, Spain (oral presentation).

2016

- Burek, J.**, Kim, D., Tomasula, P., Yee, W., Hestekin, J., Thoma, G., (2016). *Reducing the environmental impact of Greek yogurt is the whey to go*. 10th International Conference on Life Cycle Assessment of Food (LCA Food 2016), October 19-21, 2016, Dublin, Ireland; <http://lcafood2016.org/> (oral presentation)
- Burek, J.**, Nutter, D., (2016). *Environmental Impact of Food Distribution-Retail Networks in the United States*. American Center for Life Cycle Assessment Conference (LCA XVI), September 27-29, 2016, Charleston, NC; <http://lcaxvi.org/> (oral presentation)

Burek, J., Thoma, G., Popp, J., Maxwell, C., Ulrich, R., (2016). *Optimizing Cost and Environmental Impact of Pig Diets*. The American Society of Animal Science (ASAS) 2016 Midwest Meeting, March 14-16, 2016, Des Moines, IE, US; <https://www.asas.org/membership-services/asas-sections/midwest-section> (oral presentation)

2015

Burek, J., Thoma, G., Popp, J., Maxwell, C., Ulrich, R., (2015). *Increasing Sustainability of Pig Production by Changing Pig Diets*. American Center for Life Cycle Assessment Conference (LCA XV), October 6-8, 2015, Vancouver, Canada; <http://www.aclca.org/> (oral presentation)

Burek, J., Thoma, G., Popp, J., Maxwell, C., and Ulrich, R., (2015). *Environmental Sustainability of Pig Diets in the US*. 10th Conference on Sustainable Development of Energy, Water and Environment Systems, September 27-October 2, 2015, Dubrovnik, Croatia; <http://www.dubrovnik2015.sdewes.org/> (oral presentation)

Burek, J., Thoma, G., Popp, J., Maxwell, C., and Ulrich, R., (2015). *Feeding Strategies to Mitigate Cost and Environmental Footprint of Pig Production in the US*. Waste to Worth Conference, March 30- April 3, 2015, Seattle, WA, US; <http://articles.extension.org/pages/72746/feeding-strategies-to-mitigate-cost-and-environmental-footprint-of-pig-production-in-the-us> (oral presentation)

2014

Burek, J., Thoma, G., Popp, J., Maxwell, C., Ulrich, R., (2014). *Developing Environmental Footprint, Cost, and Nutrient Database of the US Animal Feed Ingredients*. 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), October 8-10, 2014, San Francisco, CA, US; <http://lcafood2014.org/> (oral presentation and panelist)

2012

Burek, J., Kim, D., Nutter, D., Selke, S., Auras, R., Cashman, S., Sauer, B., Thoma, G., (2012). *The Environmental Impact of Fluid Milk Delivery Systems for in-home Consumption in the U.S. – LCA study*. SETAC Europe 18th LCA Case Symposium; <http://lcacopenhagen.setac.eu/?contentid=533> (oral presentation)

2010

Burek, J., Hasell, M., (2010). *Life Cycle Assessment Opportunity for Die Casting and Chromium Plating Industry*. Harley- Davidson, Fayetteville, AR, US. (oral presentation)

2005

Burek, J., (2005). *Quality Assurance and Quality Control Plan*. UNDP GHG Inventories Workshop on Development and Improvement of Emission Factors, Strategies, and Documentation, April 20-22, 2005, Chisinau, Moldova; <http://archive.rec.org/REC/Programs/UNDP-GHGInventories/Workshops.html> (oral presentation)

Burek, J., Juric, Z., & Vesligaj, D., (2005). *Croatian Aspect of Emission Inventory*. Thirteen International Conference on Modeling, Monitoring, and Management of Air Pollution (Air Pollution 2005), May 16-18, 2005, Cordoba, Spain (oral presentation)

M. Research Posters

Griggs, A. T., Winbourne, J. B., Sabato, A., & **Burek, J.** (2026, June 27–28). *Quantifying cooling-related health benefits from urban green infrastructure in life cycle impact assessment* [Poster presentation]. Industrial Ecology Gordon Research Seminar, Newry, ME, United States.

Griggs, A. T., Winbourne, J. B., Sabato, A., & **Burek, J.** (2026, June 28–July 3). *Quantifying cooling-related health benefits from urban green infrastructure in life cycle impact assessment* [Poster presentation]. Industrial Ecology Gordon Research Conference, Newry, ME, United States.

Boero-Vera, A., Zhang, Y., Niezrecki, C., & **Burek, J.** (2026, June 27–28). *Decision support tool for New England households using parsimonious thermal demand modeling to compare heating and cooling system upgrades by cost and greenhouse gas emissions* [Poster presentation]. Industrial Ecology Gordon Research Seminar, Newry, ME, United States.

Boero-Vera, A., Zhang, Y., Niezrecki, C., & **Burek, J.** (2026, June 28–July 3). *Decision support tool for New England households using parsimonious thermal demand modeling to compare heating and cooling system upgrades by cost and greenhouse gas emissions* [Poster presentation]. Industrial Ecology Gordon Research Conference, Newry, ME, United States.

Ghandi, M., Varela, I., & **Burek, J.** (2026, June 27–28). *Time-explicit and dynamic-climate life cycle assessment of geothermal energy networks in cold climates* [Poster presentation]. Industrial Ecology Gordon Research Seminar, Newry, ME, United States.

Ghandi, M., Varela, I., & **Burek, J.** (2026, June 28–July 3). *Time-explicit and dynamic-climate life cycle assessment of geothermal energy networks in cold climates* [Poster presentation]. Industrial Ecology Gordon Research Conference, Newry, ME, United States.

Burek, J., & Keough, C (2026, June 28–July 3). *University handprint framework for long-term community impact quantification in engineering design education* [Poster presentation]. Industrial Ecology Gordon Research Conference, Newry, ME, United States.

Ghandi, M., and **Burek, J.** 2024. Advancing Decarbonization with Networked Geothermal Systems: A Comprehensive LCA Model for Lowell, MA, International Symposium on Sustainable Systems and Technology (ISSST), Baltimore, MD, June 18–20. (poster presentation).

Granda, N., Zhang, Y., **Burek, J.** 2024. Incorporation Sustainability into Introductory/PBL Engineering Courses, January 31st ASEE Engineering for One Planet Symposium (poster presentation).

Boero Vera, A., Schmid, C., Medina, L., Claudio, D., Davis, J.M., Jiusto, S., Smith-Walter, A., **Burek, J.**, 2023. Towards Energy Resilience in Puerto Rico: Assessing the Environmental and Economic Trade-offs of Building-Integrated Solar PV on a School Rooftop, ACLCA 2023 Conference, September 26-29, 2023, Burlington, VT (poster, 1st prize)

Smith, A., Granda, N., McGregor, M., **Burek, J.** 2023 Comparative Environmental Impact Assessment of Biogas Production from Hemp Crop Residue for Enabling Circular Economy Transition of Cannabidiol Production Systems, ACLCA 2023 Conference, September 26-29, 2023, Burlington, VT (poster presentation)

Ghandi, M. **Burek, J.** 2023. Comparative Environmental Impact Assessment of Concrete and Wood-Based Houses in Miami, Florida, ACLCA 2023 Conference, September 26-29, 2023, Burlington, VT (poster presentation)

- Smith, A., **Burek, J.**, 2022. More Than a Campus Community Garden: Transforming University Lawn into a Food Forest can Result in Handprints, sWE2022, Houston, TX, Oct 20-22, 2022 (poster presentation)
- Puglisi, A., Bancroft E., **Burek, J.**, 2022. Sustainable Garments for Refugee Women, Immersive Scholars Project, UML (poster presentation)
- RAMP 2022 cohort, Smith, A., **Burek, J.**, 2022. From Trash to Treasure (poster presentation). UML RAMP 2022
- Zhang, Y., Kirchain, R., Gregory, J., **Burek, J.** 2022. Design Strategies, Environmental Impact, and Cost of Zero-Energy Houses (poster presentation) International Symposium for Sustainable Systems and Technology (ISSST) conference, Jun 21-23 2022, Pittsburgh, PA
- Davison, B., Kirchain, R., Gregory, J., **Burek, J.** 2022. Design Strategies, Environmental Impact, and Cost of Passive Houses (poster presentation) International Symposium for Sustainable Systems and Technology (ISSST) conference, Jun 21-23 2022, Pittsburgh, PA
- Cheng, V., Gregory, J., Kirchain, R., **Burek, J.**, 2020. Streamlined Life Cycle Assessment of Passive Houses. MIT mini-UROP Civil and Environmental Engineering Poster Competition 01/30/2020 (poster presentation).
- Burek, J.**, Moore, E., Gregory, J., Kirchain, R., Norris, G., 2019. Handprints: A New Paradigm for Sustainable Development. MIT Materials Research Laboratory Materials Day Symposium 10/09/2019, Cambridge, MA. (poster presentation)
- Burek, J.**, (2017) Assessing Environmental Impact from Acid Whey to Value-Added Products, 2017 AIChE Annual Meeting, Oct. 29- Nov. 3, 2017, Minneapolis, IN, US. (poster presentation)
- Burek, J.**, Nutter, D., (2016). *The Missing Link: Environmental Impact of Food Distribution*. 10th International Conference on Life Cycle Assessment of Food (LCA Food 2016), October 19-21, 2016, Dublin, Ireland; <http://lcafood2016.org/> (poster presentation)
- Burek, J.**, Kim, D., Tomasula, P., Yee, W., Thoma, G., (2016). *Second Life: Environmental Impact of Greek Yogurt Whey Treatment*. American Center for Life Cycle Assessment Conference (LCA XVI), September 27-29, 2016, Charleston, NC; <http://lcaxvi.org/> (poster presentation)
- Silva, K., **Burek, J.**, (2016). *Environmental Impacts of Yogurt Acid Whey Enzyme and Membranes Treatment*. 2nd Annual Brazil Scientific Mobility Program (BSMP) Research Symposium, August 5th, 2016, Fayetteville, AR, US (poster presentation)
- Bhardwaj, G., **Burek, J.**, (2016). *Life Cycle Assessment of a Distribution Center Located in the City of Burlington, Vermont*. 2nd Annual Brazil Scientific Mobility Program (BSMP) Research Symposium, August 5th, 2016, Fayetteville, AR, US (poster presentation)
- Burek, J.**, Nutter, D., (2016). *Environmental Sustainability of Distribution-Retail Networks in the United States*. Society of Women Engineers Region C Conference (SWE 2016), February 5-7, 2016, Rogers, AR, US <http://regionc.swe.org/annual-conferences.html> (poster presentation)
- Burek, J.**, Thoma, G., Popp, J., Maxwell, C., Ulrich, R., Kim, D., (2015). *Feeding Strategies to Reduce Cost and Environmental Impact of Pig Production in the United States*. World's Largest Conference for Women Engineers (WE15), October 22-24, 2015, Nashville, TN, US; <http://societyofwomenengineers.swe.org/learning/conferences-and-events> (poster presentation)

- Burek, J.**, Thoma, G., Popp, J., Maxwell, C., and Ulrich, R., (2015). *Compiling Feed Ingredient Cost, Nutrient, and Environmental Footprint Data into a Single Database*. The 7th International Conference on Life Cycle Management (LCM 2015), August 30 – September 2, 2015, Bordeaux, France; <http://lcm-conferences.org/lcm-2015/> (poster presentation)
- Burek, J.**, Thoma, G., Popp, J., Maxwell, C., Ulrich, R., Putman, W., and Kim, D., (2015). *Feeding Strategies to Reduce Cost and Environmental Impact of Pig Production in the US*. The 7th International Conference on Life Cycle Management (LCM 2015), August 30 – September 2, 2015, Bordeaux, France; <http://lcm-conferences.org/lcm-2015/> (poster presentation)
- Burek, J.**, Thoma, G., Popp, J., Maxwell, C., Ulrich, R., Putman, W., Kim, D., (2015). *Towards Sustainable Pig Diets in the US*. International Society of Industrial Ecology Conference (ISIE 2015), Jul 7-10 2015, Guildford, UK; http://www.surrey.ac.uk/ces/news/key_events/isie_conference/ (poster presentation)
- Burek, J.**, Thoma, G., Popp, J., C. Maxwel, and Ulrich, R., (2015). *Least Cost and Least Environmental Footprint Pig Diets in the US*. 2015 NIFA Climate Change Project Directors' (PD) meeting, April 7-9, 2015, Washington DC, US; <https://nifa.usda.gov/2015-afri-and-niwqp-project-directors-meeting> (poster presentation)
- Burek, J.**, Thoma, G., Popp, J., Maxwell, C., and Ulrich, R., (2015). *Environmental Footprint, Cost, and Nutrient Database of the US Animal Feed Ingredients*. Waste to Worth Conference, March 30- April 3, 2015, Seattle, WA, US; <http://articles.extension.org/pages/72890/abstracts-for-waste-to-worth-2015> (poster presentation)
- Burek, J.**, Thoma, G., Popp, J., Maxwell, C., Ulrich, R., Putman, W., (2015). *Reducing the Costs and Environmental Footprint of Pig Diets with the Experimental Optimum Synthetic Amino Acid Inclusion*. Waste to Worth Conference, March 30- April 3, 2015, Seattle, WA, US; <http://articles.extension.org/pages/72890/abstracts-for-waste-to-worth-2015> (poster presentation)
- Burek, J.**, Thoma, G., Ulrich, R., Maxwell, C., Popp, J., Hanigan, M., Ghimire, S., (2015). *Environmental Footprint, Cost, and Nutrient Database of the US Animal Feed*. Society of Women Engineers Region C Conference, February 6-8, 2015, Austin, TX, US; <http://regionc.swe.org/annual-conferences.html> (poster presentation)
- Thoma, G., **Burek, J.**, Kim, D., Nutter, D., Selke, S., Auras, R., Cashman, S., Sauer, B., (2012). *Comprehensive Life Cycle Assessment for Fluid Dairy Product Delivery Systems*. 8th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2012), October 1-4, 2012, Saint-Malo, France; <https://colloque4.inra.fr/lcafood2012> (poster presentation)
- Burek, J.**, Thoma, G., Kim, D.S., (2012). *ReCiPe, USEtox, IMPACT 2002+, and TRACI 2 impact assessment methodologies in the context of fluid milk delivery systems LCA*. 6th SETAC World Congress, May 20-24, 2012, Berlin, Germany; <http://berlin.setac.eu/?contentid=404> (poster presentation)

N. Research Advising & Committee Member

a. Graduate Thesis Primary Advisor

- **Alana T. Griggs, Ph.D.**, Mechanical Engineering, 2026. First doctoral graduate of the BUREK Lab.
- **Mahsa Ghandi**, Ph.D. candidate, Industrial Engineering. Research areas include geothermal energy networks, resilient buildings, and prospective life cycle assessment.
- **Andrea Boero Vera**, Ph.D. student, Mechanical Engineering. Research areas include reduced-order building and HVAC modeling, building resilience, and life cycle assessment.
- **Aytan Hajjiyeva**, Ph.D. student, Mechanical Engineering. Research areas include community-level heat pump replacement, life cycle assessment, and social life cycle assessment of geothermal energy networks.

b. Completed Ph.D. Dissertations

- Alana Griggs (2026). *Advancing Life Cycle Assessment Methodologies for Circular Economy and Urban Greening Strategies*. Dissertation Advisor.

c. Graduate and undergraduate research supervision

Yicheng Zhang, Graduate Research Assistant, 2025. Research on residential building energy modeling and HVAC decision-support methods.

During my appointment at the University of Massachusetts Lowell, 2021–2026, I mentored more than **40 undergraduate students** through independent research, Honors projects, Emerging Scholars, Immersive Scholars, LSAMP, RAMP, and senior capstone projects. Their work resulted in peer-reviewed publications, research reports and briefs, conference presentations, posters, research databases, software tools, award-winning Honors projects, and applied sustainability projects.

2025–2026

- Thermax Joel Muthuraman, Honors researcher. Completed *Survey Design for Understanding Lived Experience in Heating Transitions*, an Honors research report addressing household experiences with heating-system transitions.
- Clay Reheman, Immersive Scholar and undergraduate research assistant. Contributed to the Urban Food Forests for Healthy Soils project through soil and microclimate data collection, Food Forest maintenance, development of a Plant–Soil Library and database, and development and testing of Shiny and Python applications. Co-presented project findings at the 2026 Actionable Science for Urban Sustainability Unconference.
- Nathan Gere and Alex Fitzler, Honors and senior capstone researchers. Designed and implemented an off-grid solar photovoltaic and battery-powered irrigation system for the UMass Lowell Food Forest. Their project received the 2025 Balasubramanian Family Honors College Thesis Award for the best STEM-related Honors Project presentation and a Mechanical and Industrial Engineering Department Award.

2024–2025

- Colin Ormond, Political Science major and Sustainability minor, Emerging Scholar and Honors researcher. Investigated the Commonwealth of Massachusetts Textile Disposal Ban, developed a stakeholder collaboration network, coauthored a research brief, and delivered an Honors project presentation.
- Kedson J. Jean, Mechanical Engineering major, LSAMP undergraduate researcher. Developed research skills in life-cycle assessment and networked geothermal energy systems and contributed to the Fall 2024 Thrift Day research brief.

2023–2024

- Katrina Smith, Psychology major and Emerging Scholar. Investigated textile reuse and the Massachusetts Textile Disposal Ban, coauthored a research brief, and presented a research poster.
- Anthony Amatucci, Political Science and Economics major and Emerging Scholar. Coauthored a research brief, presented a research poster, and presented project findings at the 81st Annual Midwest Political Science Association Conference.

2023

- Smantha Fiero and Benjamin Denaro, senior capstone students, MECH.4230. Completed a zero-energy residential-building design project and presented the results through the U.S. Department of Energy Solar Decathlon program.

2022

- Alana T. Smith, now Alana T. Griggs, Directed Study student and undergraduate researcher. Conducted urban food forest and residual hemp biomass research. Produced the first draft of a manuscript and received student presentation awards from the International Symposium on Sustainable Systems and Technology and the Society of Women Engineers.
- Jennifer Dossantos, Honors researcher. Completed and presented *Transforming Closed Schools into Community Centers in Puerto Rico*. Co-mentored with Dr. David Claudio
- Alyssa Puglisi and Ellen Bancroft, Immersive Scholars. Conducted research on circular and sustainable garments for refugee women and presented the project at UMass Lowell and the 2022 Industrial Ecology Gordon Research Conference.
- Blake Davison, Yicheng Zhang, Henry Cay, Scott Pistiner, Blake Smith, and Kollin Larned, senior undergraduate research mentees working on passive solar housing.
- MECH.4230.Capstone project for Zero Energy Housing: Deschenes, Genevieve J, Luga, Egla, Maldonado, Victor J, Carrillo, Domenic A, Whitmore, Max L, Baboci, Leah. Presented the results through the U.S. Department of Energy Solar Decathlon program.

d. Student fellowships and awards obtained under my mentorship

2025–2026 | **Koerner Family Foundation Fellowship**, \$15,000, awarded to Alana T. Griggs.

2025 | **Patrick J. Mogan Learning City Award** UMass Lowell Food Forest “classroom without walls” model received community recognition through the Patrick J. Mogan Learning City Award (awarded to Alana Griggs) 10/20/2025

2025 | **Capstone/Honors project team** received The Balasubramanian Family Honors College Thesis Award for best STEM-related Honors Project presentation (Nathan Gere & Alex Fitzler, “Solar-Powered Irrigation System”); also received a Mechanical and Industrial Engineering Department Award,

2024–2025 | **American Association of University Women Fellowship**, \$25,000, awarded to Andrea Boero Vera.

2023 | **Rist Institute Fellowship**, \$12,000, awarded to Mahsa Ghandi for research on the environmental life cycle assessment of UMass Lowell’s geothermal pilot system.

2023 | Graduate student Andrea Boero won 2023 **Student Poster Presentation Competition Award at ACLCA Conference**

2023 | **Green Building Initiative, Inc.**, The Acre Artisans of The University of Massachusetts - Lowell has been chosen to receive the 2023 Ray Tonjes Scholarship & Leadership Award, in the amount of \$5,000.00, to assist with eligible expenses related to attending the U.S. Department of Energy Solar Decathlon® 2023 Competition Event at the National Renewable Energy Laboratory (NREL) in Golden, Colorado, April 20—23, 2023.

2022 | **Rist Institute Student Research Award**, \$7,500, awarded to Alana T. Smith for research comparing the impacts of converting a university lawn into a food forest.

2022 | Undergraduate student Alana Smith won 2022 **Student Poster Presentation Competition Award at sWE22**

2022 | Undergraduate student Alana Smith won 2022 **International Symposium for Sustainable Systems and Technology Student Presentation Competition Award**

e. Visiting Students, Secondary Advisor

Mentored a visiting Ph.D. student and senior undergraduate students in the Mechanical Engineering Department, University of Massachusetts Lowell, 2021-present.

f. Thesis Committee Member

- **Doctoral Dissertation Committee Member**, Saibhargav Annavajjala, Ph.D. in Mechanical Engineering, University of Massachusetts Lowell, 2026–present.
- **Doctoral Dissertation Committee Member**, Ankit K. Mishra, Ph.D. in Nuclear Engineering, University of Massachusetts Lowell, 2024. Proposal Defense, 2024-present.
- **Doctoral Dissertation Committee Member**, Kenneth Martinez's Ph.D. in Industrial Engineering, University of Massachusetts Lowell, 2023-2024.

IV. INSTRUCTIONAL RELATED ACTIVITIES

A. Teaching Summary (University of Massachusetts Lowell)

Professor and instructor of undergraduate and graduate courses in mechanical engineering, industrial engineering, life cycle sustainability assessment, thermodynamics, thermo-fluid applications, engineering design, and capstone projects.

Teaching and mentoring record spans University of Massachusetts Lowell, MIT, Harvard Extension School, and the University of Arkansas.

C. Teaching (Undergraduate Courses)

Course Title: Professor, Thermo-fluid Applications (MECH.4410), Mechanical Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semesters: Spring 2026

Course Title: Professor, Intro to Engineering Design (MECH 1200-101), Mechanical and Industrial Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semesters: Fall 2025

Course Title: Professor, Capstone Design (MECH.4230-818), undergraduate level, Mechanical Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semesters: Spring 2025

Course Title: Professor, Thermo-fluid Applications (MECH.4410), Mechanical Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semesters: Spring 2025

Course Title: Professor, Thermo-fluid Applications (MECH.4410), Mechanical Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semesters: Spring 2024

Course Title: Professor, Thermo-fluid Applications (MECH.4410), Mechanical Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semesters: Fall 2023

Course Title: Professor, Life cycle sustainability assessment (IENG 5432-201A), Industrial Engineering Program, University of Massachusetts Lowell, Lowell, MA Professor, Thermo-fluid Applications (MECH.4410), Mechanical Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semesters: Spring 2023

Course Title: Professor, Capstone Project (MECH 4230-808), undergraduate level, Mechanical Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semesters: Spring 2023

Course Title: Professor, Capstone Project (MECH 4230-808), undergraduate level, Mechanical Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semesters: Spring 2023

Course Title: Professor, Directed Study (MECH 4991-206), undergraduate level, Mechanical Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semesters: Fall 2022

Course Title: Professor, Thermo-fluid Applications (MECH.4410), Mechanical Engineering Department, University of Massachusetts Lowell, Lowell, MA

Semesters: Spring 2022

Course Title: Mentor, Thermo-fluid Applications (MECH.4410), Mechanical Engineering Department, University of Massachusetts Lowell, Lowell, MA mentored a Teaching Fellow

Semesters: Spring 2022

Course Title: Professor, Thermo-fluid Applications (MECH.4410), Mechanical Engineering Department, University of Massachusetts Lowell, Lowell, MA

Semesters: Fall 2021

D. Teaching (Graduate Courses)

Course Title: Professor, Advanced Thermodynamics (MECH.5491), Mechanical Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semesters: Spring 2024

Course Title: Professor, Life cycle sustainability assessment (IENG 5432-201A), Industrial Engineering Program, University of Massachusetts Lowell, Lowell, MA Professor, Thermo-fluid Applications (MECH.4410), Mechanical Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semesters: Spring 2023

Course Title: Professor, Directed Study (MECH 5050-730), graduate level, Mechanical Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semesters: Spring 2023

Course Title: Professor, Directed Study (IENG 5090-203), graduate level, Industrial Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semesters: Fall 2022

E. Senior Capstone Projects Advised

Project: Professor, Capstone Design (MECH.4230-818), undergraduate level, Mechanical Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semester: Spring 2025

Project: Professor, Capstone Project (MECH 4230-808), undergraduate level, Mechanical Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semester: Spring 2023

Project: Mentor and Advisor, Burek, J., Capstone Project (MECH 4230-808), undergraduate level, Mechanical Engineering Program, University of Massachusetts Lowell, Lowell, MA

Semester: Spring 2023

Project: Mentor and Advisor, Burek, J., Schmid, C., Capstone Project, U.S. Department of Energy Solar Decathlon 2023 Design Challenge. Collegiate students competing in the Solar Decathlon Design Challenge work in multidisciplinary teams to create innovative and high-performance building designs that address real-world issues related to climate change, affordability, and environmental justice. Our team includes ME and EE students.

Semester: Fall 2022 /Spring 2023

F. Other Instructional Activity

Summer 2026 | UML Research, Academics and Mentoring Pathways (RAMP) Program. Designed and delivered a three-part life cycle assessment instructional module (goal and scope; life cycle inventory; life cycle impact assessment) for the Francis College of Engineering freshman RAMP cohort, July 2026.

Content Contributor, "Climate Action – Carbon Handprint" (international MOOC, in development), 2025–present. Developed case study module on life cycle-based handprint calculation for sustainable product design.

Summer 2023 | ASEE Engineering for One Planet (EOP) miniGrant The purpose of the ASEE Grant to Infuse Sustainability in Engineering Education and in particular to pursue new ways to integrate sustainability into University curriculums.

Fall 2024/Spring 2025 | UML Emerging Scholars, co-mentored 1 undergraduate student from FHASS with Aaron Smith-Walter from Policy Department on research entitled “Interdisciplinary project The Commonwealth of Massachusetts’ Textile Disposal Ban: At the intersection of Fast Fashion and Sustainability” actively participated in monthly Emerging Scholars’ Faculty Mentoring Workshops

Fall 2024/Spring 2025 | UML Honors Program, co-mentored and guided research of an undergraduate student who pursues academic excellence while deepening and broadening their scholarship and creativity.

Fall 2023/Spring 2024 | UML Emerging Scholars, co-mentored 2 undergraduate students from FHASS with Aaron Smith-Walter from Policy Department on research entitled “Interdisciplinary project The Commonwealth of Massachusetts’ Textile Disposal Ban: At the intersection of Fast Fashion and Sustainability” actively participated in monthly Emerging Scholars’ Faculty Mentoring Workshops

Summer 2023/Fall 2023 | ASEE Archival Publication Authors Workshop for Engineering Educators (APA-ENG) Through expert instruction and mentorship, APA provides faculty writing teams across engineering disciplines with instruction, writing labs, and expert feedback on the development and refinement of key components of their Scholarship of Teaching and Learning (SoTL). SoTL emphasizes on creativity, entrepreneurial mindset, and teaching innovations within engineering education.

Fall 2022 /Spring 2023 | Mentor and Advisor, PhD students in ME and IE: Collaborative Research: Innovations in Graduate Education (IGE) in Cyber-Physical Systems Engineering

2021– present | Mentor, Mechanical Engineering Department, University of Massachusetts Lowell mentored a Visiting PhD student mentoring three senior undergraduate students in the Mechanical Engineering Department

2021 – 2022 | Mentor/Judge: Mentor: 1-on-1 Mentoring with a SACNAS Leader: Get Advice from Faculty and STEM Mentors on Planning for your Science Career workshop; 6th Annual Workshop. Mentor/judge: Provide constructive feedback and motivation to student research presenters, including many first-time presenters and first-generation college students. Mentor/judge: year-round mentoring, which includes three hours of mentor training, and at least four 45-minute structured, digital sessions using the SACNAS platform In addition to giving back to student SACNISTAs, I believe this is a great opportunity to get exposed to new research, as well as networking and recruiting talented students.

Below are instructional activities prior to being appointed Assistant Professor

2021 | Instructor, MITx course, Understanding Cost and Environmental Impacts of Photonics Manufacturing for the American Institute for Manufacturing Integrated Photonics <https://aimphotronics.academy/education/student-resources/online-courses> proposed a syllabus developed Intended Learning Outcomes, examples and quizzes recorded lectures in the studio

2021 | Co-Mentor, assisted Circular Sloanes MIT Team 22 for their project on re-designing a breast cancer bra, Carress by Marena for the Fashion Can Do Better Global Circular Challenge <https://www.lse.ac.uk/geography-and-environment/news/fashion-can-do-better>

Fall 2019 & 2020 | Teaching Assistant, Introduction to Life Cycle & Supply Chain Sustainability Assessment (ENVR E-151), Harvard Extension School, Cambridge, MA

conducted weekly teaching assistant sessions provided technical feedback on homework and research to students graded students’ homework, final projects, and presentations provided a recommendation letter for a student applying to the master’s program.

2019 – 2021 | Mentor, MIT Undergraduate Research Opportunities Program (UROP) & Experiential Learning Opportunities (ELOs)

mentored a group of students through the MIT Undergraduate Research Opportunities Program (UROP) from different departments, including Civil and Environmental Engineering, Mechanical Engineering, and Materials Science and Engineering provided technical and communication feedback to UROP students

Fall 2019 | Guest Lecturer, Class Industrial Ecology and Materials (3.081-3.560), MIT Guest Lecturer, Introduction to Life Cycle & Supply Chain Sustainability Assessment (ENVR E-151), Harvard Extension School

Summer 2019 | MIT Kaufman Teaching Certificate <http://tll.mit.edu/design/kaufman-teaching-certificate-program-ktcp>

2009 – 2018 | Mentor, University of Arkansas

provided technical guidance for dozens of American and visiting international students

Spring 2016 | Teaching Assistant, Introduction to Materials (MEEG 2303), University of Arkansas, AR

held weekly inverse classroom homework-solving sessions, gave guest lectures, and held office hours

Fall 2015 | Teaching Assistant, Heat Transfer (MEEG 4413), University of Arkansas, AR

V. SERVICE ACTIVITIES

A. Activities Related to Professional Field

Expert Consultant, Alternative Protein Life Cycle Assessment, Conservation X Labs, 2026.

Student Poster Judge, Industrial Ecology Gordon Research Conference, 2026.

Panel Reviewer, Engineering Research Initiation Program, Environmental Sustainability and Nanoscale Interactions Programs, National Science Foundation, February 2026.

Mentor, Engineering for One Planet Mini-Grant Program, Cohorts IV and V, American Society for Engineering Education, 2025–2026.

Contributing Member, ISO/TC 207/SC5 New Work Item Proposal (NWIP) on Handprint Assessment, US ISO TAG, 2025–present.

Advisory Committee Member, Low Carbon Built Environment Program, National Research Council Canada, 2025–present.

Session Chair, International Symposium on Sustainable Systems and Technology, Rochester, New York, June 2026.

External International Standardization Reviewer, *Oatly Barista Life Cycle Assessment Report*, Blonk Sustainability, 2026.

Committee Member, Product Category Rule Committee for Pedestrian Bridges, 2026–present.

Committee Member, Product Category Rule Committee for Reclaimed Building Materials, 2026–present.

Member, NGO/Government Roundtable on Embodied Carbon, Carbon Leadership Forum, University of Washington, 2026–present.

Invited Contributor, NGO/Government Roundtable on Embodied Carbon, Carbon Leadership Forum, July 8, 2026. Presented an update on BuildSmart activities related to embodied carbon.

PROPOSAL AND TECHNICAL REVIEW

- **Proposal Reviewer**, University of Massachusetts Lowell Internal Seed Grant Program, 2026.

2025-present | Editorial Board of Sustainable Production and Consumption Editor Circular economy, Life cycle sustainability assessment, Eco-efficiency, Ecosystem services, Life cycle thinking [https://www.sciencedirect-com.umasslowell.idm.oclc.org/journal/sustainable-production-and-consumption/about/editorial-board](https://www.sciencedirect.com.umasslowell.idm.oclc.org/journal/sustainable-production-and-consumption/about/editorial-board)

2025-present | UML Arboretum Advisory Committee member

2025-present | Reviewer, Mechanical and Industrial Engineering Department Endowed Scholarship, University of Massachusetts Lowell

2025 | Reviewer, IISE QCRE Student Paper Competition,

2023-present | Editorial Board of Sustainable Production and Consumption Joined the Early Career Editorial Board <https://www.sciencedirect.com/journal/sustainable-production-and-consumption/about/editorial-board>

2024 | Reviewer, Life Cycle Assessment ISO Critical Review for Beyond Meat 02/17/2024 – 08/01/2024

2024 | Chair and Reviewer, Unsweetened & Super Basic US_Addenda to US Original 04/24/2024-07/16/2024

2024 | External reviewer for LCA study on plant-based protein from Beyond Meat Inc. Reviewer, Life Cycle Assessment ISO Critical Review for Monteban and Maxiban 07/10/2024- 10/13/2024

2024 | Chair and Reviewer, Life Cycle Assessment ISO Critical Review for Oatly Oat Drink Semi SE & FI_Addenda 04/15/2024-07/16/2024

2024 | External reviewer for LCA study on Monteban and Maxiban additives by Elanco Reviewer, Life Cycle Assessment ISO Critical Review for Hemicell Additive 05/10/2024- 08/21/2024

2024 | Chair and Reviewer, Life Cycle Assessment ISO Critical Review for Oatly

2024 | External reviewer for LCA study on Hemicell additive by Elanco Reviewer, Life Cycle Assessment ISO Critical Review for MacroCycle Tech 05/15/2024 – 08/01/2024

2024 | External reviewer for LCA study on emerging technology for textile and plastic recycling MacroCycle

2024 | Chair and Reviewer, Life Cycle Assessment ISO Critical Review for Oatly Barista for DK NO BE IT ES, 05/16/2024-06/25/2024

2024 | Chair and Reviewer, Life Cycle Assessment ISO Critical Review for Oatly Barista for Poland Ireland and France_Addendum 03/28-04/28/2024

2024 | Chair and Reviewer, Life Cycle Assessment ISO Critical Review for Oatly Creamy Oat DE NL UK DK NO_Addendum 04/25/2024-05/17/2024

2024 | Chair and Reviewer, Life Cycle Assessment ISO Critical Review for Oatly Creamy Oat Finland 2024 Addendum 02/26/2024-05/17/2024

2024 | Chair and Reviewer, Life Cycle Assessment ISO Critical Review for Oatly Creamy Oat Sweden 2024 01/31/2024-03/06/2024

2023 | Life Cycle Assessment ISO Critical Review for Beyond Meat External reviewer for LCA study on plant-based protein from Beyond Meat Inc.

2023 | Life Cycle Assessment ISO Critical Review for Phileo by Lesaffre External reviewer for LCA study on animal feed additive Phileo by Lesaffre <https://phileo-lesaffre.com/en/about-us/>

2023 | Life Cycle Assessment ISO Critical Review for Rhodimet by Adisseo External reviewer for LCA study on animal feed additive Rhodimet <https://www.adisseo.com/en/products/rhodimet/>

2022 | EcoBalance 2022 Conference: Shifting Paradigms with Life Cycle Thinking, reviewer and poster judge

2020 – 2021 | Theme co-chair “Emerging Ideas in Sustainability”, International Symposium on Sustainable Systems and Technology (ISSST) 2021 Conference selecting topics, reviewing abstracts

GRANT & JOURNAL REVIEWER:

2025 | NextFlex Project Call 10.0 Topic 10.4, proposal reviewer

2025 | NSF SBIR/STTR Phase II proposal reviewer |

2023 2022 | Global Sustainability Center NSF, reviewer and panelist Partnerships for International Research and Education (PIRE) NSF, reviewer and panelist

2022 | NSF GRFP Reviewer and panelist

2022 | ARPA-E Funding Opportunity Announcement (FOA) entitled "Harnessing Emissions into Structures Taking Inputs from the Atmosphere (HESTIA)", reviewer and panelist

2021 | Microsoft Climate Change AI Innovation Grants, reviewer

2015 – present | One Earth, Journal of Sustainable Production and Consumption, Journal of Life Cycle Assessment, Renewable & Sustainable Energy Reviews, Journal of Cleaner Production, Applied Energy, American Journal of Public Health, Journal of Building Engineering, Journal of the Air & Waste Management Association, Journal of Cleaner Production, Journal of Environmental Science and Technology, Journal of Industrial Engineering, Journal of Cleaner Production

LANGUAGES:

Croatian (mother tongue), English (proficient), Spanish (proficient), French (independent), Italian (basic), and Japanese (basic)

B. Committee Activities (Department, College, University, External)

Project Team Member, Campus Compact Campus Action Planning for Civic and Community Engagement Initiative, University of Massachusetts Lowell, 2026–present.

Member, Mechanical and Industrial Engineering Scholarship and Endowment Committee, University of Massachusetts Lowell, 2025–present. Reviewed applicants for five departmental scholarships during the 2025–2026 cycle.

Faculty Contributor, Mechanical and Industrial Engineering Design Sequence Curriculum Team, University of Massachusetts Lowell, 2025–2026. Contributed to the implementation and assessment of MECH 1100, MECH 1200, and IENG 2100.

Project Team Member, Campus Action Planning for Civic and Community Engagement Initiative, Campus Compact and University of Massachusetts Lowell, 2026–present.

Faculty Panelist, Teaching Assistant and Research Assistant Training, University of Massachusetts Lowell, August 25, 2026.

Faculty Panelist, “Energy, Climate, and Sustainability,” BuildSmart Housing Innovation TechHub Summit, University of Massachusetts Lowell, Lowell, Massachusetts, April 29, 2026.

Faculty Participant, UMass Lowell–Florida Gulf Coast University Collaboration Workshop, Center for Energy Innovation, 2026.

2026-present | UML Food Forest Committee member

2025-present | Honors Department Liaison (Mechanical and Industrial Engineering), University of Massachusetts Lowell

2025-present | UML Arboretum Advisory Committee member

2025-present | Middlesex 3 Coalition (M3) Green Sustainability Initiative working group member

2025-present | Sponsorship Chair, International Symposium on Sustainable Systems and Technology (ISSST) Planning Committee

2023 | Program Committee, Theme Chair, and Session Co-Chair “Integrated Human-Physical Systems”, International Symposium on Sustainable Systems and Technology (ISSST) 2022 Conference on selecting topics, reviewing abstracts, organizing workshop 2022

2022 | Program Committee, Theme Chair, and Session Co-Chair “Integrated Human-Physical Systems”, International Symposium on Sustainable Systems and Technology (ISSST) 2022 Conference selecting topics, reviewing abstracts, organizing workshop

2019 – 2020 | MIT Climate Action Plan Committee (CAAC) member joined the Student Sustainability Coalition (SSC) with around 30 undergraduates, graduates, and postdocs to draft a report about MIT’s priorities on addressing the climate crisis <https://climate.mit.edu/posts/re-thinking-mits-climate-action-plan-2021> served as a postdoc member for two years on the MIT CAAC advisory committee and provided strategic advice to MIT’s Vice Provost of Research, Dr. Maria Zuber

increased participation of MIT faculty mentors by recruiting 13 faculty and 2 industry mentors envisioned, organized, and moderated a panel for MIT postdocs and grad students: “Making the Cut - Job Searching During a COVID-19 Economy: A Panel Discussion” <https://www.youtube.com/watch?v=sDBuIB-QVF0&t=4s> invited 5 panelists from diverse engineering and scientific backgrounds from MIT and Rochester Institute of Technology, who were searching for jobs during the 2008-2010 economic crisis (June 9, 2020). <https://pda.mit.edu/events/making-the-cut-%e2%9c%82-job-searching-during-a-covid-19-economy-a-panel-discussion/> More than 200 MIT postdocs and grad students attended the panel. mentored and judged graduate students’ posters at SACNAS 2019 and SETAC 2019 served as a liaison between SETAC Early Career and Professional Development Committees. planned an Early Career Networking Social at SETAC North America in Toronto, Canada.

2019 – 2020 | IT Chair for the MIT Postdoctoral Association (PDA): served on the committee search for the MIT Senior Assistant Director of Postdoctoral Career and Professional Development managed <https://pda.mit.edu/> website including news, events, and updates using WordPress promoted important news and events to postdocs community on PDA’s Facebook <https://www.facebook.com/MITPDA77/> and Twitter (<https://twitter.com/mitpda>)

accounts. volunteered in fundraising event for the MIT PDA facilitated and coordinated the 2020 MIT Postdoctoral Association Mentoring Program <https://pda.mit.edu/resources/life-at-mit/postdoc-mentoring-program/>

mentored and judged graduate students' posters and presentations at SETAC 2019 served as a liaison between SETAC Early Career and Professional Development Committees. planned an Early Career Networking Social at SETAC North America in Toronto, Canada.

C. Other Service to the University

Faculty Advisor, Engineers Without Borders, University of Massachusetts Lowell , 2025-present

Spring & Fall 2025 | Academic Advisor, Mechanical and Industrial Engineering Department, University of Massachusetts Lowell, Lowell, MA (37 undergraduate advisees)

2023 | Life Cycle Assessment ISO Critical Review for Oatly Chair of ISO Critical Review panel for different products (plant-based) milk

2023 | 2024 National Science Bowl (NSB) National Competitions wrote 30 High School Energy questions for the 2023 NSB National Competition

2023 | 2024 National Science Bowl (NSB) National Competitions wrote 30 Middle School Energy questions for the 2023 NSB National Competition

2022 | 2023 National Science Bowl (NSB) National Competitions wrote 15 High School Energy questions for the 2023 NSB National Competition

2022 - 2023 | UML CELT - Complex Problem Solving (CPS) Learning community is an extended learning opportunity to foster collaborative learning among colleagues. The goal is to develop a shared framework around complex problem solving that can be used as a resource by faculty at the university aiming to engage students in complex problem solving. The innovation in IENG.5432 Life cycle sustainability assessment course included in-class demonstration of EN-ROADS Climate Action Simulation Game.

2022 | Life Cycle Assessment ISO Critical Review for Oatly Barista Chair of ISO Critical Review panel for (plant-based) milk. Blonk Consultants. (2022). LCA of Oatly Barista and comparison with cow's milk LCA report. www.blonksustainability.nl

2021 – 2023 | UML Center for Women and Work, Associate proposed new initiative to support refugee women

2022 – 2023 | UML Climate Change Initiative, Associate

2022 – 2023 | UML Rist Institute for Sustainability & Energy, Member

2022 - 2023 | UML Center for Energy Innovation, Member

2020 | Facilitated and co-moderated the celebration of National Postdoc Appreciation Week: Career Path Talk with Nergis Mavalvala hosted by MIT's Vice Provost of Research Dr. Maria Zuber <https://pda.mit.edu/events/career-path-talk-with-nergis-mavalvala/> Resource Fair for Postdoctoral Scholars promoted important news and events to postdocs community on PDA's Facebook <https://www.facebook.com/MITPDA77/> and Twitter (<https://twitter.com/mitpda>) accounts. volunteered in fundraising event for the MIT PDA facilitated and coordinated the 2020 MIT Postdoctoral Association Mentoring Program <https://pda.mit.edu/resources/life-at-mit/postdoc-mentoring-program/>

increased participation of MIT faculty mentors by recruiting 13 faculty and 2 industry mentors envisioned, organized, and moderated a panel for MIT postdocs and grad students: “Making the Cut - Job Searching During a COVID-19 Economy: A Panel Discussion” <https://www.youtube.com/watch?v=sDBuIB-QVF0&t=4s>

invited 5 panelists from diverse engineering and scientific backgrounds from MIT and Rochester Institute of Technology, who were searching for jobs during the 2008-2010 economic crisis (June 9, 2020). <https://pda.mit.edu/events/making-the-cut-%e2%9c%82-job-searching-during-a-covid-19-economy-a-panel-discussion/> More than 200 MIT postdocs and grad students attended the panel. mentored and judged graduate students’ posters at SACNAS 2019

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