

JASMINA BUREK, Ph.D.

University of Massachusetts, Lowell

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EDUCATION:

Doctor of Philosophy in Engineering, *The University of Arkansas*, Mechanical Engineering, Fayetteville, AR, United States 2011 – 2018

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

Ecological engineering postgraduate courses, *The University of Zagreb*, Faculty of Chemical Engineering and Technology, Zagreb, Croatia 2005 – 2009

Completed courses: Mathematical and Computer Modeling of Ecological Systems, Environmental Process Design, Power Systems and the Environment, Environmental Impact Assessment, Air Quality Chemical Engineering for Air Pollution Control, Databases, and Aerosols

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

Master thesis: Burek, J. 2004. "Estimation of Emissivity Values of Building Façades by Thermography."

Advisor: Dr. Srečko Svaic

RESEARCH EXPERIENCE:

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

BUilding REsilience through Knowledge (BUREK) Lab

- o applying engineering and decision-making models to find solutions to climate change and environmental problems,
- o energy and process modeling
- o system modeling and optimization,
- o life cycle assessment (LCA), techno-economic analysis (TEA) & handprint assessment.

Sustainable transformation of retailers' operations, logistics, and distribution

- o reducing food insecurity and climate risks in the cold supply chain
- o reducing air pollution and the GHG emissions of transportation through an optimization of food delivery routes
- o considering the so-called "Walmart and Amazon Effects," this project aims to create a more equitable system for workers

Climate smart housing and transportation for sustainable and resilient cities

- o increasing affordability and implementation of passive, zero energy, and resilient buildings
- o creating a sustainable and resilient integrated multi-modal and shared-mobility transportation

Sustainable clothing for refugee women

- o project with the Southeast Asian Coalition (SEACMA), a nonprofit organization to create sustainable fashion for refugee women

Increasing sustainability of swine diets and production systems in the Global South

- o 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.

Life Cycle Assessment of biomethane production in a biodigester using hemp cultivator's waste for enabling circular economy transition of CBD production systems

- o 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.

Reinventing Social Infrastructure: From Abandoned Schools-to-Community Centers in Puerto Rico

- o 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. This project is in collaboration with Worcester Polytechnic University (WPI) and University of Puerto Rico (UPR).

Senior Researcher, Massachusetts Institute of Technology, Department of Chemical Engineering 2022 – present

- o collaborative project on converting dairy industry waste (acid whey) into food and feed ingredients
- o process modeling of combining ethanol production with hydrogen

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>

- o 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
- o 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
- o evaluated the sustainability of alternative swine diet formulations applied to the top U.S. swine production states
- o 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>

- o 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
- o 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/>

- o proposed a method and calculated the Business Sustainability Laboratory's (S-lab) positive environmental impact
- o defined procedures to measure and track the positive environmental, economic, and social impact of project-based courses.

Handprint Assessment of Product Innovation in Developed and Developing Countries

- o 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

- o 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
- o 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

- o mentored a master's student project to develop a commercial building LCA (life cycle assessment)-based tool, which will inform an early building design
- o performed cluster analysis of the U.S. building stock for the Future of Concrete project

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>

- o 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)
- o developed a GUI platform that enables visualize the results and exports to Excel for the BAIA tool.

Micro mobility: Shared dockless electric scooters

- o 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.
- o developed a flexible analytical LCA-based tool to help e-scooter distributor SPIN make decisions by testing their ecodesign enhancement
- o 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

Waste-to-Energy Life Cycle and Techno-Economic Assessment Project, MIT Mechanical Engineering Department (MechE)

- o developed an LCA model of novel torrefaction process for biochar production from rice husk

Machine Learning for Building Temperature Setpoints Project, CEE: CShub/MITOS/Quest/IBM/MechE

- o 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.
- o developed a framework for building room model simulations using the EnergyPlus template
- o calculated building room based on 60 cooling and heating setpoints
- o developed Python Jupyter notebook calculation setup and visualization

A meta-analysis of five swine diets, a collaboration with Kansas State University

- o peer-reviewed a report "A meta-analysis of life cycle assessments on environmental footprints of five representative finishing swine diets".
- o 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

- o 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

- o developed cost and environmental impact optimization model to improve building sustainability
- o provided optimal solutions for zero energy distribution center network.

Food Distribution in the U.S.

- o 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
- o mentored a returning female Mechanical Engineering master's student

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

Agricultural Systems Modeling

- o contributing author to “Life Cycle Assessment of Corn Production Practices in the United States,” a report prepared for the National Corn Growers’ Association
- o developed Matlab codes for cluster and classification analysis to find dissimilarities between 6,000 agricultural types of machinery based on multiple environmental impacts.
- o co-authored a manuscript for precision guidance of agricultural machinery
- o led sweet corn LCA study for Green Giant.

Environmental Impact of Livestock Production Systems

- o developed a swine feed database
- o simulated swine diets for Europe and the United States
- o performed linear optimization of U.S. swine diets
- o co-authored a comparative study on European and United States swine production
- o co-authored a manuscript on a retrospective environmental assessment of poultry production in the United States

Life Cycle Assessment of Fluid Milk Delivery Systems

- o authored a report and a manuscript about the environmental sustainability of 18 fluid milk delivery systems for Dairy Management Inc.

Environmental Impact of Dairy Products

- o co-authored a study on regional milk production in the United States
- o 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

- o built five membrane technology scenarios in the SuperPro Designer to treat acid whey
- o 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

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

TEACHING and MENTORING EXPERIENCE:

Professor, Thermo-fluid Applications (MECH.4410), Mechanical Engineering Department, University of Massachusetts Lowell, Lowell, MA Fall 2022

UML Honors Program Fall 2022

- o Co-mentored and guided research of an undergraduate student who pursues academic excellence while deepening and broadening their scholarship and creativity.

UML Research, Academics and Mentoring Pathways (RAMP) Program Summer 2022

- o mentored and guided sustainability research of 6 freshman engineering students to increase enrollment, retention and accomplishment of those that continue to be underrepresented in the engineering field.

UML Immersive Scholars Summer 2022

- o mentored and guided sustainability research of 2 freshman applicants (chemical engineering and business school) who are awarded merit scholarships

SWE Mentor Network Sessions

- o mentored a PhD student from Aero Astro program Spring 2022

Professor, Thermo-fluid Applications (MECH.4410), Mechanical Engineering Department, University of Massachusetts Lowell, Lowell, MA Spring 2022

- Mentor**, *Thermo-fluid Applications (MECH.4410)*, Mechanical Engineering Department, University of Massachusetts Lowell, Lowell, MA Spring 2022
 o mentored a Teaching Fellow
- Professor**, *Thermo-fluid Applications (MECH.4410)*, Mechanical Engineering Department, University of Massachusetts Lowell, Lowell, MA Fall 2021
- Instructor**, MITx course, *Understanding Cost and Environmental Impacts of Photonics Manufacturing* for the American Institute for Manufacturing Integrated Photonics 2021
<https://aimphotonics.academy/education/student-resources/online-courses>
 o proposed a syllabus
 o developed Intended Learning Outcomes, examples and quizzes
 o recorded lectures in the studio
- 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 2021
<https://www.lse.ac.uk/geography-and-environment/news/fashion-can-do-better>
- Teaching Assistant**, *Introduction to Life Cycle & Supply Chain Sustainability Assessment (ENVR E-151)*, Harvard Extension School, Cambridge, MA Fall 2019 & 2020
 o conducted weekly teaching assistant sessions
 o provided technical feedback on homework and research to students
 o graded students' homework, final projects, and presentations
 o provided a recommendation letter for a student applying to the master's program.
- Mentor**, Mechanical Engineering Department, University of Massachusetts Lowell 2021– present
 o mentored a Visiting PhD student
 o mentoring three senior undergraduate students in the Mechanical Engineering Department
- Mentor/Judge:** 2021 – 2022
 o 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.
 o Mentor/judge: Provide constructive feedback and motivation to student research presenters, including many first-time presenters and first-generation college students.
 o 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.
- Mentor**, MIT Undergraduate Research Opportunities Program (UROP) & Experiential Learning Opportunities (ELOs) 2019 – 2021
 o 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
 o provided technical and communication feedback to UROP students
- Guest Lecturer**, *Class Industrial Ecology and Materials (3.081-3.560)*, MIT Fall 2019
- Guest Lecturer**, *Introduction to Life Cycle & Supply Chain Sustainability Assessment (ENVR E-151)*, Harvard Extension School
- MIT Kaufman Teaching Certificate** Summer 2019
<http://tll.mit.edu/design/kaufman-teaching-certificate-program-ktcp>
- Mentor**, University of Arkansas 2009 – 2018
 o provided technical guidance for dozens of American and visiting international students
- Teaching Assistant**, *Introduction to Materials (MEEG 2303)*, University of Arkansas, AR Spring 2016
 o held weekly inverse classroom homework solving session, gave a guest lecture, and held office hours
- Teaching Assistant**, *Heat Transfer (MEEG 4413)*, University of Arkansas, AR Fall 2015

INDUSTRY EXPERIENCE:

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

- o conducted LCA of woody biomass cogeneration plants to provide techno-economic assessments for Belisce Paper Mill and power plant in Udbina, Croatia
- o selected as a Project Assistant for the National Energy Strategy of the Republic of Croatia
- o 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

Mechanical Engineer, Environmental Protection and Sustainable Development Department, Energy Research and Environmental Protection Institute (EKONERG), Zagreb, Croatia 2004 – 2007

- o 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
- o compiled inventory for the National Greenhouse Gas Emission Inventory (CRF Reporter) for the United Nations Framework Convention on Climate Change (UNFCCC)
- o prepared inventory for energy, agriculture, key categories, and uncertainty for the National Greenhouse Gas Emissions Inventory Report submitted to the UNFCCC
- o compiled air emission inventory for the Air Emission Data Exchange Module (AE-DEM) submitted to the Convention on Long-range Transboundary Air Pollution (LRATAP)
- o 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).
- o built LCA model for biodiesel use in public buses in Zagreb using the Global Emission Model for Integrated Systems (GEMIS) software

Student Intern, Atmospheric Protection Department, Energy Research and Environmental Protection Institute (EKONERG), Zagreb, Croatia 2003 – 2004

- o compiled inventory for the National Greenhouse Gas Emission Inventory (CRF Reporter) for the United Nations Framework Convention on Climate Change (UNFCCC)
- o 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).

JOURNAL PUBLICATIONS:

I have published in international, transdisciplinary journals focused on life cycle assessment, cleaner production, sustainability research, energy use in buildings, optimization of renewable energy, and agricultural systems, and animal science. Underscores denote my mentees. (Publications are listed in reverse chronological order).

15. Zhao, X., Huning, A. J., **Burek, J.**, Guo, F., Kropaczek, D. J., Pointer, D. (2022). The Pursuit of Net-Positive Sustainability for Industrial Decarbonization with Hybrid Energy Systems. *J. Clean. Prod.* 2022, 132349. <https://doi.org/10.1016/J.JCLEPRO.2022.132349>.
14. **Burek, J.**, Bauer, C., Moore, E., Kirchain, R., Gregory, J., Norris, G., (2021). Assessing Handprint Potentials for Business's Eco-Innovation. *Sustain. Prod. Consum.*
13. Vahidi, E., Kirchain, R., **Burek, J.**, Gregory, J., (2021). Regional variation of greenhouse gas mitigation strategies for the United States building sector. *Appl. Energy* 302, 117527. <https://doi.org/10.1016/J.APENERGY.2021.117527> (2018 Impact Factor: 8.426)
12. Norris, G., **Burek, J.**, Moore E., Kirchain, R., Gregory, J. (2021). Sustainability Health Initiative for NetPositive Enterprise handprint methodological framework. *Int J Life Cycle Assess.* <https://doi.org/10.1007/s11367-021-01874-5> (2018 Impact Factor: 4.868).
11. **Burek, J.**, Nutter, D., (2020). Environmental Implications of Perishables Storage and Retailing. *Renew. Sustain. Energy Rev.* 133. <https://doi.org/10.1016/j.rser.2020.110070> (2018 Impact Factor: 10.556).
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. *J. Clean. Prod.* 123177. <https://doi.org/10.1016/j.jclepro.2020.123177> (2018 Impact Factor: 6.395).
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: 1427–46. <https://doi.org/10.1016/j.apenergy.2018.11.042> (2018 Impact Factor: 8.426).
8. **Burek, J.**, Nutter, D., (2018). Life Cycle Assessment of Grocery, Perishable, and General Merchandise Multi-Facility Distribution Center Networks. Energy and Buildings. <https://doi.org/10.1016/j.enbuild.2018.06.021> (2018 Impact Factor: 4.495).
 7. **Burek, J.**, Kim, D., Nutter, D., Selke, S., Auras, R., Cashman, S., Thoma, G. (2018). Environmental Sustainability of Fluid Milk Delivery Systems in the United States. Journal of Industrial Ecology, 22(1), 180–195. <https://doi.org/10.1111/jiec.12531> (2018 Impact Factor: 4.826).
 6. Lindsay, K., Popp, M., Ashworth, A., Owens, P., **Burek, J.**, 2018. A decision-support system for analyzing tractor guidance technology. Comput. Electron. Agric. 153, 115–125. [doi:10.1016/j.compag.2018.08.014](https://doi.org/10.1016/j.compag.2018.08.014) (2018 Impact Factor: 3.171).
 5. **Dalla Riva, A.**, **Burek, J.**, Kim, D., Thoma, G., Cassandro, M., De Marchi, M., (2018). The environmental analysis of asiago PDO cheese: a case study from farm gate-to-plant gate, Ital. J. Anim. Sci. 17. 250–262. [doi:10.1080/1828051X.2017.1344936](https://doi.org/10.1080/1828051X.2017.1344936). (2018 Impact Factor: 1.697).
 4. Putman, B., Thoma, G., **Burek, J.**, Matlock, M. (2017). A Retrospective Analysis of the United States Poultry Industry: 1965 Compared With 2010, Agric. Syst. 157. [doi: 10.1016/j.agsy.2017.07.008](https://doi.org/10.1016/j.agsy.2017.07.008). (2018 Impact Factor: 4.131)
 3. **Dalla Riva, A.**, **Burek, J.**, Kim, D., Thoma, G., Cassandro, M., De Marchi, M., (2017). Environmental Life Cycle Assessment of Italian Mozzarella Cheese: Hotspots and Improvement Opportunities, J. Dairy Sci. 100. [doi:10.3168/jds.2016-12396](https://doi.org/10.3168/jds.2016-12396). (2018 Impact Factor: 3.082)
 2. **Dalla Riva, A.**, **Burek, J.**, Kim, D., Thoma, G., Cassandro, M., De Marchi, M., (2015). The environmental impact of cow milk in the northeast of Italy, Poljoprivreda. 21 (2015). [doi: 10.18047/poljo.21.1.sup.24](https://doi.org/10.18047/poljo.21.1.sup.24). (2018 Impact Factor: 0.260)
 1. **Almutairi, K.**, Thoma, G., **Burek, J.**, Algarni, S., and Nutter, D., (2015). Life Cycle Assessment and Economic Analysis of Residential Air Conditioning in Saudi Arabia. Energy and Buildings 102: 370–379. (2018 Impact Factor: 4.495).

PUBLICATIONS IN PREPARATION

- Burek, J.**, **Sonnert, S.**, Moore, E., Kirchain, R., Gregory, J., Norris, G., (in preparation). Multi-City Life Cycle Assessment and Modal Shift of Shared Electric Dockless Scooters Using the Big Data
- Burek, J.**, **Sonnert, S.**, Kirchain, R., Gregory, J., Jay, J., Patten, B., Norris, G., (in preparation). Evaluating Project-Based Courses' Impacts on Sustainability
- Burek, J.**, Kirchain, R., Gregory, J., (in preparation). Affordable Passive Houses and Zero Energy Buildings
- Burek, J.**, Z., Stoddart, Matlock, M., Coventry, N., Khan, E., Thoma, G., (in preparation). Application of Classification and Cluster Analysis to Agricultural Chemicals and Machinery in the Life Cycle Assessment (LCA) Environment. Agric. Ecosyst. Environ.
- Burek J.**, Kim, D., Tomasula, P., Yee, W., Thoma, G., (in preparation). Processing Options for Treatment of Acid Whey During Production of Greek Yogurt
- Burek, J.**, Tsung T.C., Popp J., Ulrich R., Maxwell, C., Thoma G. (in preparation). Sustainability of Pig Diets Through the Looking Glass of the Multi-Objective Optimization.

REPORTS, CONFERENCE PROCEEDINGS, RESEARCH BRIEFS, and INTERVIEWS:

I have authored and co-authored reports for industry including SPIN, Dairy Management Inc, National Pork Board), and government on a variety of topics including buildings, electric scooters, agriculture, dairy, and animal research, biomass, biofuels, and climate change. Underscores denote my mentees. (Publications are listed in the reverse chronological order).

- Manav, B.I. 2022. Shedding Light on Faculty Applications: Insights from **Assistant Professor Dr. Jasmina Burek** <https://mitcommlab.mit.edu/cee/2022/03/30/shedding-light-on-faculty-applications-insights-from-assistant-professor-dr-jasmina-burek/>
- 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.
- Burek, J.**, 2021. Multi-Criteria Diet Formulation for Sustainable Swine Production, MIT J-WAFS <https://jwafs.mit.edu/projects/2020/multi-criteria-diet-formulation-sustainable-swine-production>
- Cai, Y., Kircher, K., Das, S., **Burek, J.**, Gregory, J., 2021. Reducing greenhouse gas emissions by optimizing room temperature set-points. ICML 2021 Work. Tackling Clim. Chang. with Mach. Learn.
- 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-MdvDFbnIMxmHTaYI5NS>

- MIT Postdoctoral Association Diversity, Equity, and Inclusion Committee** 2020. Postdoc Recruitment at MIT. (reviewer)
- 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.
- Burek, J.**, Kim, D., Tomasula, P., Yee, W., Hestekin, J., Thoma, G., (2016). Reducing Environmental Impact of Greek Yogurt is the Whey to Go. Proceedings of 10th International Conference on Life Cycle Assessment of Food, October 19 – 21, Dublin, Ireland; <http://lcafood2016.org/>
- Dalla Riva, A., Thoma, G., **Burek, J.**, Kim, D., Cassandro, M., De Marchi, M., (2016). Cradle-to-grave Lifecycle Impacts of Italian Mozzarella Cheese. Proceedings of 10th International Conference on Life Cycle Assessment of Food, October 19 – 21, Dublin, Ireland; <http://lcafood2016.org/>
- 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>
- Burek, J.**, Thoma, G., Popp, J., Maxwell, C., Ulrich, R., (2014). Developing Environmental Footprint, Cost, and Nutrient Database of the US Animal Feed Ingredients, Proceedings of 9th Conference on Life Cycle Assessment of Food, October 8-10, 2014, San Francisco, CA, US; <http://lcafood2014.org/papers/258.pdf>
- Henderson, A., Asselin, A., Heller, M., Vionnet, S., Lessard, L., Humbert, S., Saad, R., Margni, M., Thoma, G., Matlock, M., **Burek, J.**, Kim, D., Jolliet, O. (2013) Comprehensive Life Cycle Assessment of Fluid Milk in the United States. Final Report, University of Michigan
- EKONERG. (2008). Feasibility Study for rapeseed cultivation in Sisak-Moslovina County with the purpose of biodiesel production as one of the measures of greenhouse gas emission mitigation” (co-author)
- EKONERG. (2008). Techno-economic assessment of cogeneration plant (CHP) on woody biomass in wood industry Belisce. Zagreb, Croatia (co-author)
- EKONERG. (2008). Techno-economic assessment of cogeneration plant (CHP) on woody biomass in Udbina. Zagreb, Croatia (co-author)
- Ministry of Economy, Labor, and Entrepreneurship (2008). Adaptation and Upgrade of Croatian Energy Strategy – Green Book. Zagreb, Croatia (co-author)
- Ministry of Economy, Labour, and Entrepreneurship (2008). Development Strategy of the District Heating Sector in the Republic of Croatia – phase 2/3. Zagreb, Croatia (co-author)
- Burek, J.**, Sagisaka, M., (2007). Life Cycle Assessment of Biomass Derived Fuels. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan
- Juric, Ž., Hublin, A., **Burek, J.**, Fijan-Parlov, S., Vešligaj, D., Mesic, M., (2008). Republic of Croatia Ministry of Environmental Protection, Physical Planning and Construction National Inventory Report for the Period 1990 - 2006 Inventory of Anthropogenic Emissions of all Greenhouse Gases.
- Juric, Ž., Hublin, A., **Burek, J.**, Fijan-Parlov, S., Vešligaj, D., Mesic, M., (2007). Republic of Croatia Ministry of Environmental Protection, Physical Planning and Construction National Inventory Report for the Period 1990 - 2005 Inventory of Anthropogenic Emissions of all Greenhouse Gases.
- Juric, Ž., Hublin, A., **Burek, J.**, Fijan-Parlov, S., Vešligaj, D., Mesic, M., (2006). Republic of Croatia Ministry of Environmental Protection, Physical Planning and Construction National Inventory Report for the Period 1990 - 2004 Inventory of Anthropogenic Emissions of all Greenhouse Gases.
- 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.
- Juric, Z., **Burek, J.**, & Vesligaj, D., (2005). Croatian Aspect of Emission Inventory. In WIT Transactions on Ecology and the Environment, Vol 82, © 2005 WIT Press.
- Juric, Ž., Hublin, A., **Burek, J.**, Fijan-Parlov, S., Vešligaj, D., Mesic, M., (2004). Republic of Croatia Ministry of Environmental Protection, Physical Planning and Construction National Inventory Report for the Period 1990 - 2002 Inventory of Anthropogenic Emissions of all Greenhouse Gases.
- Burek, J.** 2004. Estimation of Emissivity Values of Building Façades by Thermography

CONFERENCES & PRESENTATIONS

I have presented poster and platform presentations at STEM, environmental, sustainability, engineering, diversity, and inclusion, women in STEM international and national conferences. Underscores denote my mentees. (Conferences are listed in the reverse chronological order).

- 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.
- Smith, A., Granda, N., McGregor, M., **Burek, J.** 2022. Environmental and Cost Assessment of Biogas Production from Hemp Crop-Residue for Enabling Circular Economy Transition of CBD Production Systems (platform) International Symposium for Sustainable Systems and Technology (ISSST) conference, Jun 21-23 2022, Pittsburgh, PA
- Zhang, Y., Kirchain, R., Gregory, J., **Burek, J.** 2022. Design Strategies, Environmental Impact, and Cost of Zero-Energy Houses (poster) 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) International Symposium for Sustainable Systems and Technology (ISSST) conference, Jun 21-23 2022, Pittsburgh, PA
- Smith, A., Martinić, 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
- 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
- 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>

- 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).
- 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. (platform)
- 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/> (platform)
- Burek, J.**, 2019. Week 6: Life Cycle Impact Assessment (LCIA) IMPACT World+. Harvard Extension School Class ENVR E-151, Cambridge, MA. (platform)
- 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/> (platform)
- 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 (platform)
- Burek, J.**, 2019. Handprint Methodology: State of the Art Summary. MSL Seminar, 10/10/2019, Cambridge, MA. (platform)
- 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)
- Burek, J.**, 2019. What are the environmental impacts of e-scooters? MSL Seminar, 10/03/2019, Cambridge, MA. (platform)
- 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/> (platform)
- 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 (platform)
- Burek, J.**, 2019. The Good, the Better, and the Zero Energy Distribution Center Network. MSL Seminar, 03/15/2019, Cambridge, MA. (platform)
- 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 (platform).
- 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 (platform).
- 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 (platform).
- 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)
- 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/> (platform)
- 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)
- 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/> (platform)
- 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)
- 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)
- 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)

- 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> (platform)
- 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)
- 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)
- 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/> (platform)
- 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/> (platform)
- 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)
- 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)
- 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)
- Burek, J.,** Thoma, G., Popp, J., C. Maxwell, 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)
- 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> (platform)
- 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)
- 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)
- 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)
- 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)
- 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> (platform)
- 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)
- 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)

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

DISCUSSION PANELS and WORKSHOPS:

I have facilitated, organized, and moderated scientific and professional development discussion panels and workshops.

- 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
- Granda, N., **Burek, J.,** Usa Lean en tu día a día y mejora tu huella ecológica, IMIE 2020, 2da Edición del IMIE (International Meeting of Industrial Engineers) organizado por Capitulo 627 IISE Uniatlántico https://www.sweetagram.com/post/CGxOqmbph_0
- 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=sDBulB-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)
- 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>

DIVERSITY, EQUITY, AND INCLUSION:

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|--|-------------|
| o as a member of the MIT Postdoc Diversity, Equity, and Inclusion Committee I contributed to ideas for MIT to incorporate into the strategic plan, which will provide new opportunities for Postdoc training, assemble resources, and advocate for awareness and institutional changes | 2020 – 2021 |
| o reviewed the first survey and report about postdoc hiring at MIT | 2020 |
| o American Society for Engineering Education (ASEE) Cultivating Inclusive Communities Program | 2020 – 2021 |

- o stimulated, encouraged, and discussed diversity, equity, and inclusion topics in by-weekly meetings of the Diversity, Equity, and Inclusion Journal Club at MIT 2020 – 2021
<https://pda.mit.edu/resources/diversity/>
- o co-authored a letter in support of the Black Lives Matter Movement: “Message to the MIT Postdoc Community of Support and Action Towards Anti-Racism!” 2020 – 2021
<https://pda.mit.edu/message-to-the-mit-postdoc-community-of-support-and-action-towards-anti-racism/>
- o Participated in the Association for the Advancement of Sustainability in Higher Education (AASHE) Racial Equity & Social Justice Discussion Series workshops 2020
- o joined the Programs for Women Graduate Community Fellows paper writing and data visualization virtual tea-time with graduate students to share experiences and advice on paper writing and bolster the sense of community that we are missing due to social distancing. 2020 – 2021
- o trained my dog Bandido and supported MIT community mental health and wellness through weekly and special events including fundraising for student-led organizations hosted by the MIT Puppy Lab <https://www.facebook.com/mitpuppylab/> 2019 – 2021
- o organized and moderated a panel “I’m an Alien, I’m a graduate student in the United States” at the World’s Largest Conference for Women Engineers (WE16) in Philadelphia, U.S. 2016
- o completed Promoting Diversity and Inclusion training at the University of Arkansas 2010

SERVICE:

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- 2023 National Science Bowl (NSB) National Competitions 2022
 - o wrote 15 High School Energy questions for the 2023 NSB National Competition
 - Life Cycle Assessment ISO Critical Review 2022
 - o Chair of ISO Critical Review panel for (plant-based) milk
 - EcoBalance 2022 Conference: Shifting Paradigms with Life Cycle Thinking, reviewer 2022
 - Center for Women and Work, Associate 2021 – 2023
 - o proposed new initiative to support refugee women
 - Climate Change Initiative, Associate 2022 – 2023
 - Rist Institute for Sustainability & Energy, Member 2022 – 2023
 - Program Committee, Theme Chair, and Session Co-Chair “Integrated Human-Physical Systems”, International Symposium on Sustainable Systems and Technology (ISSST) 2022 Conference 2022
 - o selecting topics
 - o reviewing abstracts
 - Theme co-chair “Emerging Ideas in Sustainability”, International Symposium on Sustainable Systems and Technology (ISSST) 2021 Conference 2020 – 2021
 - o selecting topics
 - o reviewing abstracts
 - MIT Climate Action Plan Committee (CAAC) member 2019 – 2020
 - o 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>
 - o 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
 - Facilitated and co-moderated the celebration of National Postdoc Appreciation Week: 2020
 - o 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/>
 - o Resource Fair for Postdoctoral Scholars

IT Chair for the MIT Postdoctoral Association (PDA):

- o served on the committee search for the MIT Senior Assistant Director of Postdoctoral Career and Professional Development 2019 – 2020
- o managed <https://pda.mit.edu/> website including news, events, and updates using WordPress
- o promoted important news and events to postdocs community on PDA's Facebook <https://www.facebook.com/MITPDA77/> and Twitter (<https://twitter.com/mitpda>) accounts.
- o volunteered in fundraising event for the MIT PDA
- o facilitated and coordinated the 2020 MIT Postdoctoral Association Mentoring Program <https://pda.mit.edu/resources/life-at-mit/postdoc-mentoring-program/>
- o increased participation of MIT faculty mentors by recruiting 13 faculty and 2 industry mentors

- o 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>
- o 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.

Mentoring and other service

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

GRANTS:

- o Awarded \$25,000 MIT Abdul Latif Jameel Water and Food Systems Lab J-WAFS Grant for Transforming Animal Agriculture Systems 2020 – 2021

STUDENT RESEARCH FUNDING:

- o Undergraduate student Alana Smith was awarded \$7,500 from RIST Institute for project Lawn or Food Forest? A Comparative Environmental, Economic, and Social Impact Assessment of Converting Existing UML Lawn Space into a Food Forest as a Handprint Effort 2022
- o Awarded \$6,000 to offer three students' mentorship and research experience in the Undergraduate Experiential Learning Opportunities MIT Program 2020
- o Obtained funding to support research for one female undergraduate student through Undergraduate Research Opportunities Program (UROP) for spring (20hr/week), summer (40hr/week), and fall semester (20hr/week). 2019
- o Obtained funding for research one female civil engineering undergraduate student in MIT's Civil and Environmental Engineering Department during Independent Activities Period (IAP) 2019 – January

TRAVEL AWARDS:

- o SETAC Early Career Travel Award 2019
- o MIT Institute Community and Equity Travel Award for SACNAS conference 2019
- o 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
- o 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. 2018

- o 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. 2017

POSTER/PRESENTATION COMPETITION AWARDS:

- o Undergraduate student Alana Smith won 2022 International Symposium for Sustainable Systems and Technology Student Presentation Competition Award 2022
- o 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
- o 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
- o 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 2016
- o 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 2015
- o Best performance award for the paper and presentation on LCA of biomass-derived fuels in Japan, 2007

SCHOLARSHIP:

- o 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. 2007

DEAN’S AWARD:

- o Dean’s award for the school year 1999/2000, University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture 2000

CAREER DEVELOPMENT:

- o Writing/Designing Winning Department of Defense (DoD) Proposals live online workshop Jan 2022
- o completed the MIT IMPACT 2020 program, which is focused on articulating and communicating research for heightened real-world value. <https://impact-program.org/fellows/> Jan – May 2020
- o 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. Sep 2019 – May 2020
- o 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
- o Workshop “Breaking Through the Gridlock” – The Power of Conversation in a Polarized World 2019
- o 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. 2019
- o completed MIT’s “Path of Professorship” 2019

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- o completed the Academic Leadership for Women in Engineering program organized by the Society of Women Engineers WE18 in Minneapolis 2018

PROFESSIONAL MEMBERSHIPS:

- o The Association for the Advancement of Sustainability in Higher Education (AASHE) 2020 – present
- o Association for Women in Science Mentoring Program (AWIS) 2020 – 2021
- o National Postdoctoral Association (NPA) 2019 – 2021
- o MIT Postdoctoral Association (MIT PDA) 2019 – 2020
- o Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) 2017 – present
- o The American Society of Mechanical Engineers (ASME) 2016 – present
- o Net Impact 2016 – 2018
- o Forum for Sustainability through Life Cycle Innovation (FSLCI) 2015 – 2020
- o American Center for Life Cycle Assessment (ACLCA) 2015 – 2021
- o International Society for Industrial Ecology (ISIE) 2015 – present
- o National Society of Women Engineers (SWE) 2015 – present
- o Society of Environmental Toxicology and Chemistry (SETAC) 2012 – present

GRANT & JOURNAL REVIEWER:

- Partnerships for International Research and Education (PIRE) NSF, reviewer and panelist 2022
- ARPA-E Funding Opportunity Announcement (FOA) entitled "Harnessing Emissions into Structures Taking Inputs from the Atmosphere (HESTIA)", reviewer and panelist 2022
- Microsoft Climate Change AI Innovation Grants, reviewer 2021
- 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 2015 – present

LANGUAGES:

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