

# Seung-Jin Lee, Ph.D.

*School of Engineering and Technology*  
*University of Washington Tacoma*  
✉ [sjleeuw@uw.edu](mailto:sjleeuw@uw.edu)

## Professional Experience

### University of Washington Tacoma

Assistant Professor, School of Engineering and Technology, 07/2020-present

### University of Michigan-Flint

Associate Professor of Mechanical Engineering, 05/2020-06/2020

Assistant Professor of Mechanical Engineering, 09/2014-05/2020

Assistant Professor of Sustainability, 09/2014-08/2018

### U.S. Environmental Protection Agency

Oak Ridge Institute of Science and Education (ORISE) Postdoctoral Research Fellow, Office of Research and Development, National Risk Management Research Laboratory, Cincinnati, OH, 10/2011-08/2014

### CEMEX

Research & Development Engineer, Kuala Lumpur, Malaysia, 06/2003-06/2004

### RMC Group (acquired by CEMEX)

Engineering Intern, Kuala Lumpur, Malaysia, 05/2002-08/2002

## Education

- 2011      **Ph.D.**, Mechanical Engineering, University of Washington, Seattle, WA  
2008      **Graduate Certificate**, Environmental Management, University of Washington  
2005      **M.S.**, Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA  
2003      **B.S.**, Mechanical Engineering, Boston University, Boston, MA

## Teaching Responsibilities

### University of Washington Tacoma

TME 221 Statics – Winter 2021

- Developed course content

### University of Michigan-Flint

ESS 180 Global Environmental Systems and Sustainability – Winter 2015

- Developed course content
- General education course

ESS 360 Renewable and Sustainable Energy – Fall 2016, Fall 2014

- Developed course content
- Civic Engagement Designation

ESS/URP 491 Transportation Planning – Fall 2014

- Developed course content

EGR 230 Statics – Winter 2020, Fall 2018, Winter 2018, Winter 2017, Fall 2016, Fall 2015

- Developed course content including assessments for each semester taught

EGR/POL 235 Global Energy – Fall 2015, Fall 2014

- Developed course content
- General education course

EGR 260 Mechanics of Deformable Solids – Winter 2020, Winter 2019, Fall 2017, Winter 2015

- Developed course content including assessments for each semester taught

EGR 300 Renewable Energy – Winter 2016

- Developed course content

EGR 314 Engineering Ethics and Communication – Winter 2019

- Developed course content

EGR 370 Dynamics – Fall 2019, Fall 2018, Winter 2018, Fall 2017, Winter 2017

- Developed course content including assessments for each semester taught

ESS/EGR 390 Life Cycle Assessment and Industrial Ecology – Winter 2020, Winter 2019, Winter 2018, Winter 2017, Winter 2016, Winter 2015

- Created course with department colleagues and developed course content
- Lead collaboration with Engineering program and GPE to cross-list course

ESS 492/EGR 393 Sustainable Design of Products and Systems – Fall 2019, Fall 2018, Fall 2017, Fall 2016, Fall 2015 Fall 2015

- Created course and developed course content
- Awarded Course Design Fellowship from Thompson Center for Learning & Teaching
- Lead collaboration with Engineering program and GPE to cross-list course
- Civic Engagement Designation

EGR 511 Advanced Mechanics of Materials – Fall 2019

- Developed course content

## **Awards and Honors**

Golden Apple (Recognition for teaching excellence), University of Michigan-Flint, Winter 2019, Fall 2018, Winter 2018, Fall 2017, Winter 2017, Fall 2016, Winter 2016 and Fall 2015

International Travel Award (International Conference on Resource Sustainability), Office of Research and Sponsored Programs, University of Michigan-Flint (\$1,000), 2018

Dr. Lois Matz Rosen Junior Faculty Excellence in Teaching Award, University of Michigan-Flint, 2017

International Travel Award (The Korean Society for Life Cycle Assessment Conference), Office of Research and Sponsored Programs, University of Michigan-Flint (\$1,500), 2017

Excellence in Review Award 2016, Resources, Conservation & Recycling (Elsevier), (One of 25 awardees worldwide)

International Travel Award (EcoBalance 2016), Office of Research and Sponsored Programs, University of Michigan-Flint (\$1,500), 2016

NSF Travel Grant, 2016 Summit for Transforming STEM Teaching in Higher Education, Boise State University, April 2016

Scientists and Engineers Early-Career Development (SEED) Workshop Travel Grant, Korean American Scientists and Engineers Association (KSEA), 2015

International Travel Award (IEEC 2015), Office of Research and Sponsored Programs, University of Michigan-Flint (\$2,000), 2015

Excellent Oral Presentation Certificate, International Conference on Software and Information Systems (co-author), 2015

Michigan Road Scholar, Office of State Outreach within the Office of the Vice President for Government Relations, University of Michigan, 2015

Symposium on Industrial Ecology for Young Professionals (SIEYP) Travel Grant, International Society for Industrial Ecology, 2013

Scientists and Engineers Early-Career Development (SEED) Workshop Travel Grant, Korean American Scientists and Engineers Association (KSEA), 2013

2<sup>nd</sup> Place Poster Award, KSEA Korean Student & Technical Leadership Conference, 2012

Graduate Student Scholarship, Korea-US Science Cooperation Center (KUSCO) & KSEA, 2008

Pratt & Whitney Award for Outstanding Senior Design Project in Mechanical Engineering, Boston University, 2003

Dean's List, College of Engineering, Boston University

## Research and Education Grants

**Co-PI**, Buildings Energy Efficiency Frontiers & Innovation Technologies, “Toolkits for End of Life Design in Residential Building Equipment,” Department of Energy Office of Energy Efficiency and Renewable Energy, *submitted*, 01/2021

**Senior Investigator**, KEEN Concept Mapping, PI: Dr. Cheryl Bodnar, Rowan University, Kern Family Foundation (UWT Award: \$72,162), October 2020

**PI**, Global Innovation Fund, ““Eco- and Human Toxicity Impacts: A Comparative Study of Metropolitan Areas in the U.S., France and South Korea” University of Washington Office of Global Affairs (\$10,000), 01/2021-02/2022

**Co-PI**, Freshwater Harmful Algal Blooms, EPA-G2017-STAR-A1 – Mitigation and Control, “In-situ Visible Light Responsive Freshwater Harmful Algal Blooms (HABs) Control and Mitigation Technology,” Environmental Protection Agency, *submitted*, 1/2017

**Co-PI**, Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR), “A Community Aware Virtual Learning Infrastructure,” National Science Foundation, *submitted*, 11/2016

**PI**, CBET – Environmental Engineering, “Collaborative Research: A Novel Symbiotic Micro-Algae IFAS (MAIFAS) System for Nutrient Removal and Feedstock Generation for Energy Recovery,” National Science Foundation, *submitted*, 10/2016

**PI**, Provost's Research Fund, Office of Research and Sponsored Programs, “Microsensor-based Direct Investigation of Lead Leaching from Lead Plumbing Sources in Corrosive Water and its Sustainable Mitigation Strategies” University of Michigan-Flint (\$9,810), 06/2016-05/2017

**Co-PI**, Research in Sustainable Solid Waste Management, “Municipal Solid Waste Generation Forecasting and Analysis in Michigan,” Environmental Research and Education Foundation, *submitted*, 07/2015

- PI**, Course Design Fellowship, Thompson Center for Learning & Teaching, “Proposal for design of a new course: Sustainable Design of Products and Systems,” University of Michigan-Flint (\$3,000), Spring 2015
- PI**, Research and Creative Activity Award, Office of Research and Sponsored Programs, “Energy and Environmental Implications of Large-Scale Electric Vehicle Adoption: A Scenario-Based Life Cycle Assessment Study of the Future of Advanced Transportation in Michigan,” University of Michigan-Flint (\$15,515), 01/2015-12/2015
- PI**, 2015 Software Grant, Technology Committee, University of Michigan-Flint (\$5,745), 01/2015-12/2015
- Co-PI**, Graduate Research Grant, Ford Motor Company (\$2,500), 01/2005-05/2005

## Publications

### Peer-reviewed journal articles

- J14. J. Kim, **S.-J. Lee**, G.-H. Lee, Y.W. Kim, Y. Hwang (2021). Chemical Flow Analysis of Ammonia in the Domestic Fertilizer Industry of South. Submitted to *Journal of Material Cycles and Waste Management*.
- J13. **S.-J. Lee**, J.W. Kim, Y.H. Hwang, J. Kim, Y. Kim & S. Chen (2019). Butadiene substance flow analysis and management in South Korea. *Journal of Cleaner Production*, 220, 331-339, DOI:10.1016/j.jclepro.2019.02.153.
- J12. J.-H. Hwang, J. Church, **S.-J. Lee**, J. Park & W.H. Lee (2016). Use of Microalgae for Advanced Wastewater Treatment and Sustainable Bioenergy Generation. *Environmental Engineering Science*, 33 (11), 882-897, DOI:10.1089/ees.2016.0132.
- J11. W.W. Ingwersen, M. Gausman, A.V. Weisbrod, D. Sengupta, **S.-J. Lee**, J.C. Bare, E. Zanolli & M. Ceja (2016). Detailed Life Cycle Assessment of Bounty<sup>®</sup> Paper Towel Operations in the United States. *Journal of Cleaner Production*, 131, 509-522, DOI:10.1016/j.jclepro.2016.04.149.
- J10. W.W. Ingwersen, M. Ceja, A.V. Weisbrod, H. Cabezas, B. Demeke, T. Eason, R.L. Smith, D. Sengupta, E. Zanolli, M. Gausman, **S.-J. Lee**, X. Ma, B. Weber, M. Alvarez, J.C. Bare, J. Abraham, M. A. Gonzalez, G.J. Ruiz-Mercado (2016). Evaluating consumer product life cycle sustainability with integrated metrics: A Bounty<sup>®</sup> Case Study. *Industrial & Engineering Chemistry Research*, 55(12), 3433-3441, DOI: 10.1021/acs.iecr.5b03743.
- J9. K. Vadoudi, B. Laratte, **S.-J. Lee**, N. Troussier & J. Kim (2015). E-Waste Management and Resources Recycling in France. *Waste Management & Research*, 33(10), 919-929, DOI: 10.1177/0734242X15597775.
- J8. M. Allison, **S.-J. Lee**, A. Kuvvarapu, (2015). A Policy Based Approach to Models at Runtime within Cyber-Physical Systems: A Case Study for Microgrids. *International Journal of Electrical Energy*, 3(2), 94-98, DOI: 10.12720/ijoe.3.2.94-98.
- J7. **S.-J. Lee**, T.R. Hawkins, W.W. Ingwersen & D.M. Young (2015). Exploring the Use of Ecological Footprint in Life Cycle Impact Assessment: Findings from a Comparison of Transportation Fuels. *Journal of Industrial Ecology*, 19(3), 416-426, DOI: 10.1111/jiec.12188.
- J6. W. Ingwersen, H. Cabezas, A.V. Weisbrod, T. Eason, B. Demeke, X. Ma, T. Hawkins, **S.-J. Lee**, J.C. Bare & M. Ceja (2014). Integrated Metrics for Improving the Life Cycle Approach to Assessing Product System Sustainability. *Sustainability*, 6(3), 1386-1413, DOI: 10.3390/su6031386.

- J5. M.S. Noon, **S.-J. Lee** & J. Cooper (2011). A Life Cycle Assessment of End-of-Life Computer Monitor Management in the Seattle Metropolitan Region. *Resources, Conservation & Recycling*, 57, 22-29, DOI:10.1016/j.resconrec.2011.09.017.
- J4. **S.-J. Lee**, M. Noon & J.S. Cooper (2011). Towards the Estimation of Liquid Crystal Display Materials for Waste Management and Other Assessments. *IEEE Transactions on Components, Packaging and Manufacturing Technology*, 1(6), 934-950, DOI: 10.1109/TCPMT.2011.2118760.
- J3. **S.-J. Lee**, J.S. Cooper & G. Hicks (2010). Characterization of Monitor Recycling in Seattle, Washington. *Regional Environmental Change*, 10(4), 349-369, DOI: 10.1007/s10113-009-0106-8.
- J2. J.S. Cooper, **S.-J. Lee**, J. Elter, J. Boussu & S. Boman (2009). Life cycle design metrics for energy generation technologies: method, data, and case study. *Journal of Power Sources*, 186(1), 138-157, DOI:10.1016/j.jpowsour.2008.09.067.
- J1. J.S. Cooper, L. Woods & **S.-J. Lee** (2008). Distance and backhaul in commodity transport modeling. *International Journal of Life Cycle Assessment*, 13(5), 389-400, DOI: 10.1007/s11367-008-0001-4.

#### Book chapter

- B1. J.-H. Hwang, A. Sadmani, **S.-J. Lee**, K.-T. Kim & W.H. Lee (2019). Microalgae: An eco-friendly tool for the treatment of wastewaters for environmental safety, *Bioremediation of Industrial Wastes for Environmental Safety, Volume II: Biological agents and methods for industrial waste management* (Eds. Bharagava, R.N. and Saxena, G.), Springer Nature, Singapore.

#### Peer-reviewed conference proceedings

- C5. **S.-J. Lee** (2015). Incorporating systems-based life cycle thinking and sustainability in engineering curricula. *American Society for Engineering Education North Central Section Conference*, Cincinnati, OH, April 17-18.
- C4. M. Allison, **S.-J. Lee**, A. Kuvvarapu (2015). A Policy Based Approach to Models at Runtime within Cyber-Physical Systems: A Case Study for Microgrids. *2015 International Conference on Software and Information Systems*, Las Vegas, NV, May 9-10.
- C3. D.M. Young, T. Hawkins, W. Ingwersen, **S.-J. Lee**, G. Ruiz-Mercado, D. Sengupta, & R.L. Smith (2012). Designing Sustainable Supply Chains. *PRES 2012: 15th Conference on Process Integration, Modelling and Optimization for Energy Saving and Pollution Reduction (Chemical Engineering Transactions)*, Prague, Czech Republic, August 25-29, Vol. 29.
- C2. **S.-J. Lee** & J.S. Cooper (2008). Estimating Regional Material Flows for LCDs. *IEEE International Symposium on Electronics & the Environment 2008*, San Francisco, CA, May 19-23.
- C1. **S.-J. Lee**, J. Bae & J. Kim (2005). An Environmental and Economic Analysis of an E-Commerce Distribution System (translation), *The 2005 Third NexGen e-Business Conference*, Seoul, Korea, Nov.11.

#### Peer-reviewed conference abstracts (Presentations)

- P.24. **S.-J. Lee** (2018) Carbon Impacts of a Transition to Electric Vehicles and Renewable Energy in Michigan. *U.S.-Korea Conference on Science, Technology and Entrepreneurship 2018*, Queens, NY, August 1-4.

- P23. J.-H. Hwang, J. Church, **S.-J. Lee**, & W.H. Lee (2017). Use of Microalgae for Advanced Wastewater Treatment and Sustainable Bioenergy Generation. *International Society for Industrial Ecology and International Symposium on Sustainable Systems and Technologies 2017*, Chicago, IL, June 25-29.
- P22. J.-H. Hwang, J. Church, **S.-J. Lee**, & W.H. Lee (2017). Use of Microalgae for Advanced Wastewater Treatment and Sustainable Bioenergy Generation. *2017 AEESP Research and Education Conference*, Ann Arbor, MI, June 20-22.
- P21. **S.-J. Lee** & J.S. Cooper (2016). The sustainability of regional e-waste management systems: Monitor technology case studies. *The 12<sup>th</sup> Biennial International Conference on Ecobalance*, Kyoto, Japan, October 3-6.
- P20. **S.-J. Lee** & J.S. Cooper (2016). The sustainability of regional e-waste management systems: Monitor technology case studies. *International Symposium on Sustainable Systems and Technologies 2016*, Phoenix, AZ, May 16-18.
- P19. **S.-J. Lee**, W.W. Ingwersen, T.R. Hawkins (2015). Life-Cycle Greenhouse Gas Impacts of Large-Scale Electric Vehicle Adoption in Southeast Michigan. *U.S.-Korea Conference on Science, Technology, and Entrepreneurship 2015*, Atlanta, GA, July 29-August 1.
- P18. **S.-J. Lee**, W.W. Ingwersen, T.R. Hawkins (2015). Potential environmental impacts of electric vehicle adoption in southeast Michigan. *2015 AEESP Research and Education Conference*, New Haven, CT, June 13-16.
- P17. **S.-J. Lee**, W.W. Ingwersen, T.R. Hawkins (2015). Life-Cycle Greenhouse Gas Impacts of Large-Scale Electric Vehicle Adoption in Southeast Michigan. *International Symposium on Sustainable Systems and Technologies 2015*, Dearborn, MI, May 18-20.
- P16. A.V. Weisbrod, W.W. Ingwersen, M. Ceja, H. Cabezas, B. Demeke, T. Eason, R.L. Smith, D. Sengupta, E. Zanolli, M. Gausman, **S.-J. Lee**, C. Ma, B. Weber, M. Alvarez, J.C. Bare, J. Abraham, M.A. Gonzalez & G. Ruiz-Mercado (2015). Assessing product sustainability with integrated metrics: A Bounty® Case Study. *International Symposium on Sustainable Systems and Technologies 2015*, Dearborn, MI, May 18-20.
- P15. W. Ingwersen, A. Weisbrod, H. Cabezas, T. Eason, **S.-J. Lee**, C. Ma, B. Demeke, C. Henry, B. Weber, D. Sengupta, T. Hawkins & M. Ceja (2014) Land, Energy, Cost, Social License and System Order: Explaining the value of system-level metrics in product assessment. *International Symposium on Sustainable Systems and Technologies 2014*, Oakland, CA, May 18-21.
- P14. A. Weisbrod, J. Bare, M. Ceja, W. Ingwersen, D. Young, R. Smith, B. Demeke, B. Weber, **S.-J. Lee**, M. Gausman, D. Sengupta, J. Abraham, T. Hawkins, E. Zanolli, M. Alvarez, C. Ma, T. Eason, H. Cabezas, M. Gonzalez, G. Ruiz-Mercado & B. Armstrong (2013). A Government and Industry Application of LCA and Novel Sustainability Metrics: Part I and II. *SETAC North America 34<sup>th</sup> Annual Meeting*, Nashville, TN, November 17-21.
- P13. W. Ingwersen, A. Weisbrod, M. Ceja, D. Young, R. Smith, B. Demeke, B. Weber, **S.-J. Lee**, M. Gausman, D. Sengupta, J. Abraham, T. Hawkins, J. Bare, E. Zanolli, M. Alvarez, S. Quinn, X. Ma, T. Eason, H. Cabezas, M. Gonzalez, G. Ruiz-Mercado, B. Armstrong & C. Henry (2013). Tools for Sustainable Supply Chain Design Across Scales. *3rd International Congress on Sustainability Science & Engineering (ICOSEE) 2013*, Cincinnati, OH, August 11-15.

- P12. **S.-J. Lee**, T.R. Hawkins, W.W. Ingwersen & D. Young (2013). Exploring Best Practices for the Integration of Ecological Footprint with Life Cycle Assessment. *International Society of Industrial Ecology 2013*, Ulsan, South Korea, June 25-28.
- P11. X. Xue, **S.-J. Lee**, T.R. Hawkins, W.W. Ingwersen & R. Smith (2013). A Location-Specific Life Cycle Assessment and Ecological Footprint of Corn Production in the U.S. Midwest. *International Society of Industrial Ecology 2013*, Ulsan, South Korea, June 25-28.
- P10. W. Ingwersen, A. Weisbrod, M. Gausman, **S.-J. Lee**, T. Hawkins, J. Bare, K. Hart, D. Young, D. Sengupta, J. Abraham, E. Zanolli, D. Adams, R. Smith, G. Ruiz-Mercado, M. Gonzalez, B. Demeke, C. Ma, T. Eason, H. Cabezas & M. Ceja (2013). LCA models at the core of the sustainable supply chain toolkit: A paper towel case study. *International Symposium on Sustainable Systems and Technologies 2013*, Cincinnati, OH, May 15-17.
- P9. **S.-J. Lee**, T.R. Hawkins & D. Young (2012). Environmental Impacts of Biofuels using an Ecological Footprint Approach. *US-Korea Conference 2012*, Los Angeles, CA, August 8-11.
- P8. **S.-J. Lee**, T.R. Hawkins & D. Young (2012). Supply Chain of Biofuels using an Ecological Footprint Approach. *IEEE International Symposium on Sustainable Systems and Technologies 2012*, Boston, MA, May 16-18.
- P7. **S.-J. Lee**, T.R. Hawkins & D. Young (2012). A Review of the Environmental Impact of Biofuels. *KSEA Korean Student Technical & Leadership Conference 2012*, Chicago, IL, March 16-18.
- P6. **S.-J. Lee** & J.S. Cooper (2011). Dynamic Assessment of Regional Electronic Waste Recycling Systems. *KSEA Young Generation Technical and Leadership Conference 2011*, Seattle, WA, January 7-9.
- P5. **S.-J. Lee** & J.S. Cooper (2009). Consumption and Recycling Dynamics of Information and Communications Technology (ICT): Case Study on Electronic Waste from Display Technologies. *US-Korea Conference 2009*, Raleigh, NC, July 16-19.
- P4. **S.-J. Lee**, M. Noon & J.S. Cooper (2008). Combining Regional Flow Analysis and Life Cycle Assessment: A LCD monitor case study. *Life Cycle Assessment VIII 2008 Conference*, Seattle, WA, September 30-October 2.
- P3. **S.-J. Lee** & J.S. Cooper (2008). Material Flow Estimation for End-of-Life LCDs. *US-Korea Conference 2008*, San Diego, CA, Aug.14-17.
- P2. **S.-J. Lee** & J.S. Cooper (2006). Life Cycle Design of Emerging Energy Generation Technologies. *InLCA/LCM 2006 Conference*, Washington, DC, October 4-6.
- P1. J. Kim, J. Bae & **S.-J. Lee** (2005). Recycling Potential Index (RPI) of materials and parts in End-of-Life vehicles for Design for Recycling. *International Society of Industrial Ecology 2005*, Stockholm, Sweden, June 12-15.

#### *Other conference abstracts*

- O2. **S.-J. Lee** & J.S. Cooper (2010). Dynamic Models for the Assessment of Regional E-Waste Recycling Systems. *China-US Collaborative Workshop on Designing E-waste Material Flow Systems for Sustainable Economic Development*, Guangzhou, China, August 1-3.
- O1. **S.-J. Lee** & J.S. Cooper (2009). End-of-Life Flows of Computer Monitors in Seattle and the Estimation of Liquid Crystal Display Materials. *SISFUR Electronics Recycling Symposium*, Atlanta, GA, Oct. 23.

### *Technical reports*

- T4. J. Sisolak, C. Benjamin, **S.-J. Lee** and D. Osborn (2008). Woodland Park Zoo Footprints. Prepared for the Program on the Environment, University of Washington.
- T3. **S.-J. Lee** (2008). Policies for Electronic Waste Management in Developing Countries: Case Study in China. Prepared for the College of the Environment, University of Washington.
- T2. J.S. Cooper and **S.-J. Lee** (2006). Plug Power GenSys Life Cycle Design Tool. Prepared for Plug Power.
- T1. J. Kim, J. Bae, **S.-J. Lee** (2005). Recycling Potential Index (RPI) of materials and parts in End-of-Life vehicles for Design for Recycling. Prepared for the Ford Motor Company.

## **Professional and University Service**

### **University of Washington Tacoma**

#### *University*

Husky 100 Reviewer, March-April 2021

#### *School of Engineering and Technology*

Diversity, Equity, and Inclusion Council, Fall 2020-present

Program Chair and Tenure-Track Faculty Search Committee, Civil Engineering Program, 2020-2021

### **University of Michigan-Flint**

#### *University*

Women's Commission, University of Michigan-Flint, Fall 2017-Winter 2020

Faculty Affiliate, International and Global Studies Program, Fall 2015-Winter 2020

Faculty Affiliate, Women and Gender Studies Program, Fall 2015-Winter 2020

Faculty Affiliate, Energy Institute, University of Michigan, Fall 2014-Winter 2020

Faculty Affiliate, Graham Sustainability Institute, University of Michigan, Fall 2014-Winter 2020

Common Read Kickoff Panelist, Fall 2018

Center for the Education of Women Scholarship Committee, Winter 2018

Summer Undergraduate Research Experience (SURE) Ad Hoc Review Committee, Winter 2018

Sullenger Dialogues Moderator and Critical Issues Forum introduction (Elizabeth Kolbert – How Can we Save Our Planet?), University of Michigan-Flint, April 2017

Committee on the Economic Status of the Faculty, University of Michigan-Flint, Winter 2017

#### *College*

Strategic Planning Steering Committee, College of Arts and Sciences, Fall 2017-Winter 2018

Tenure-track Faculty Search Committee, Department of Chemistry and Biochemistry, 2016-2017

Tenure-track Faculty Search Committee, Department of Biology, 2016-2017

LEO Lecturer Review Committee, College of Arts and Sciences, Winter 2016

Tenure-track Faculty Search Committee, Department of Chemistry and Biochemistry, 2015-2016

Summer Interim Committee, College of Arts and Sciences, Summer 2015



### *Department and Program*

Accreditation Board for Engineering and Technology (ABET) Co-Coordinator, Winter 2019-Winter 2020

Ralph M. and Emmalyn E. Freeman Scholarship Committee, Chair, Department of Computer Science, Engineering and Physics, Winter 2019

Ralph M. and Emmalyn E. Freeman Scholarship Committee, Department of Computer Science, Engineering and Physics, Winter 2018

Ad-hoc Graduate Admissions Committee, Mechanical Engineering, Fall 2017-Winter 2020

Engineering Industrial Advisory Board (Chair), Engineering program, Winter 2015-Winter 2020

Professional Development Committee, Department of Computer Science, Engineering and Physics, Winter 2016

Tenure-track Faculty Search Committee, Mechanical Engineering, 2015-2016

Program Revision Committee, Department of Geography, Planning, and Environment, 2015-2016

David Zick Scholarship Committee, Department of Computer Science, Engineering and Physics, Winter 2015

### **Scientific and Professional Organizations**

#### *Editor*

Special Issue, “Innovation in Life Cycle Sustainability Assessment of Emerging Technologies,” Sustainability (MDPI), 2020-2021

#### *Invited Referee*

##### Review panels

National Science Foundation, Graduate Research Fellowship Program (GRFP), January 2021

National Science Foundation, Environmental Sustainability Program, Chemical, Bioengineering, Environmental and Transport Systems (CBET), April 2017

National Science Foundation, Environmental Sustainability Program, Chemical, Bioengineering, Environmental and Transport Systems (CBET), March 2016

National Science Foundation, Engineering, East Asia and Pacific Summer Institutes for U.S. Graduate Students (EAPSI), December 2015

##### Journal manuscripts

AGU Books (Wiley)

Energies (MDPI)

Environments (MDPI)

Environmental Engineering Science (Mary Ann Liebert, Inc., Official Journal of the Association of Environmental Engineering & Science Professors)

Environmental Science & Technology (ACS Publications)

Frontiers of Environmental Science and Engineering (Springer)

Integrated Environmental Assessment and Management (Wiley)

International Journal of Environmental Research and Public Health (MDPI)

International Journal of Sustainability in Higher Education (Emerald Publishing)

International Journal of Sustainable Transportation (Taylor & Francis)

Journal of Cleaner Production (Elsevier)  
Journal of Environmental Management (Elsevier)  
Journal of Industrial Ecology (Wiley)  
Journal of Material Cycles and Waste Management (Springer)  
Journal of the Science of Food and Agriculture (Wiley)  
Resources, Conservation & Recycling (Elsevier)  
Science of the Total Environment (Elsevier)  
Sustainability (MDPI)  
Waste Management (Elsevier)  
Water (MDPI)

Conference proceedings

American Society of Mechanical Engineers (ASME) 22<sup>nd</sup> Annual Design for Manufacturing and Life Cycle (DFMLC) Conference 2017  
International Conference on Sustainability, Technology and Education (STE), Melbourne, Australia, December 6-8, 2016  
American Society of Mechanical Engineers (ASME) 21<sup>st</sup> Annual Design for Manufacturing and Life Cycle (DFMLC) Conference 2016  
International Conference on Sustainability, Technology and Education (STE), Florianopolis, Santa Catarina, Brazil, November 30–December 2, 2015  
Proceedings of the International Symposium on Sustainable Systems & Technologies (ISSST) 2015  
International Conference on Sustainability, Technology and Education (STE), New Taipei City, Taiwan, December 10-12, 2014  
International Conference on Sustainability, Technology and Education (STE), Kuala Lumpur, Malaysia, November 29-December 1, 2013

Conference abstracts

International Symposium on Sustainable Systems & Technologies (ISSST), Portland, OR, 25-27 June, 2019  
International Conference on Resource Sustainability, Beijing, China, June 27-29, 2018  
LCA XIV Conference, San Francisco, CA, October 6-8, 2014  
International Symposium on Sustainable Systems & Technologies (ISSST), Oakland, CA, 18-21 May, 2014  
LCA XIII Conference, Orlando, FL, September 30-October 3, 2013

*Program/ Scientific Committee Member*

International Conference on Resource Sustainability, Beijing, China, June 27-29, 2018  
International Conference on Sustainability, Technology and Education (STE), Sydney, Australia, December 11-13, 2017  
International Conference on Sustainability, Technology and Education (STE), Melbourne, Australia, December 6-8, 2016  
International Environmental Engineering Conference, Busan, South Korea, 28-30 Oct, 2015

International Conference on Sustainability, Technology and Education (STE), Florianopolis, Santa Catarina, Brazil, November 30–December 2, 2015

International Conference on Sustainability, Technology and Education (STE), New Taipei City, Taiwan, December 10-12, 2014

LCA XIV Conference, San Francisco, CA, October 6-8, 2014

International Conference on Sustainability, Technology and Education (STE), Kuala Lumpur, Malaysia, November 29-December 1, 2013

#### *Session Chair*

U.S.-Korea Conference on Science, Technology and Entrepreneurship 2018, 1-4 August, 2018

The Korean Society for Life Cycle Assessment Conference, Jeju City, South Korea, 4-5 Dec, 2017

The 12<sup>th</sup> Biennial International Conference on EcoBalance, Kyoto, Japan, 3-6 Oct, 2016

(+ Poster session judge) International Symposium on Sustainable Systems & Technologies (ISSST), Phoenix, AZ, 16-18 May, 2016

International Environmental Engineering Conference, Busan, South Korea, 28-30 Oct, 2015

(+ Poster session judge) International Symposium on Sustainable Systems & Technologies (ISSST), Dearborn, MI, 18-20 May, 2015

American Society for Engineering Education (ASEE) North Central Section Conference, Cincinnati, OH, April 17-18, 2015

International Symposium on Sustainable Systems & Technologies (ISSST), Cincinnati, OH, May 15-17, 2013

(+ Symposium organizer) “Environmental Impacts of Electronic Technologies, Products, and Processes: The Search for Sustainable Electronics”, 246<sup>th</sup> American Chemical Society (ACS) National Meeting & Exposition, Division of Environmental Chemistry, Indianapolis, IN, September 8-12, 2013

#### *Subject Matter Expert*

IEEE 1680.4 Standard for Environmental Assessment of Servers, 01/2014-10/2015

#### *Judge*

U.S. EPA “Tracking Molecular Components of Electronics” Challenge, 2012

## **Certifications**

Certified Faculty Peer Observation and Feedback Coach, University of Michigan-Flint  
Engineer-in-Training (EIT), State of Massachusetts, National Council of Examiners for Engineering and Surveying

LEED Green Associate, Green Building Certification Institute (GBCI), 2011-2013

Life Cycle Assessment Certified Professional, American Center for Life Cycle Assessment, 2008-2011

## Invited Talks and Lectures

- 2020 International Seminar on Resources Circulation and Eco Industrial Development Strategy, Inha University, Incheon, South Korea, August
- 2017 The Korean Society for Life Cycle Assessment Conference, Jeju, South Korea, December
- 2017 International Seminar on Environmental Risk and Safety Management Strategy, Inha University, Incheon, South Korea, August
- 2016 “Six-Sigma Management and Lean Tools” California State University, Chico, Department of Mechanical and Mechatronic Engineering and Sustainable Manufacturing, Chico, CA, April
- 2016 “Progress towards Clean and Sustainable Energy: Application of Life Cycle Environmental Impacts” Oakland University, Department of Mechanical Engineering, Rochester, MI, April
- 2016 “Thin-Walled Pressure Vessels and Combined Loadings” York College of Pennsylvania, Department of Engineering and Computer Science, York, PA, February
- 2016 “Introduction to Sustainability Science” Montclair State University, Department of Earth and Environmental Studies, Montclair, NJ, January
- 2015 “Canadian Nuclear Waste: Friend or foe? – A fact-based discussion” Rotary Club of Flint, Flint, MI, December
- 2015 “Doing Sustainability Right: Applications of Integrated Sustainability Metrics” International Environmental Engineering Conference (IEEC) 2015 (Keynote speaker), Busan, South Korea, October
- 2015 “Doing Sustainability Right: Applications of Integrated Sustainability Metrics” Northeastern University, Department of Civil and Environmental Engineering, Boston, MA, June
- 2015 “Sustainability” Communities First, Inc., Green Business Forum, Flint, MI, March
- 2015 “Doing Sustainability Right: Applications of Integrated Sustainability Metrics” University of Michigan, Center for Sustainable Systems, School of Natural Resources and Environment, Ann Arbor, MI, March
- 2014 “Introduction to Sustainability Indicators.” California Polytechnic State University, Natural Resources Management & Environmental Sciences Department, San Luis Obispo, CA, April
- 2014 “Energy and Sustainability: A Systems-Based Life Cycle Perspective” University of Michigan-Flint, Department of Earth and Resource Science, Flint, MI, February
- 2013 “The sustainability of e-waste management systems: monitor technology case study” Workshop for Industrial Ecology and Systems Thinking (WIEST), University of Ulsan, Ulsan, South Korea, June
- 2013 Singapore Institute of Manufacturing Technology, Planning and Operations Management Group, Singapore, 05/2013
- 2013 “Sustainable Engineering: What it means and how it should be done” University of Dayton, Department of Mechanical and Aerospace Engineering, Dayton, OH, March
- 2011 “The sustainability of regional e-waste management systems: data, assessment, and policies investigated through monitor technology case studies” U.S. Environmental Protection Agency, National Risk Management Research Laboratory, Cincinnati, OH, October

- 2011 “Sustainability Benefits for LG” LG Electronics, Home Appliances Group, San Jose, CA, March
- 2011 “Wanna be sustainable? Think Life Cycle” Korean-American Scientists and Engineers Association, Seattle-Washington Chapter Technical Seminar Series, Bellevue, WA, January
- 2010 Samsung Heavy Industries, Ridgefield Park, NJ, October
- 2010 “Processed-based Life Cycle Assessment” University of Washington, Environmental Science and Studies, Tacoma, WA, March
- 2010 “University of Washington Zoo Footprints Project” University of Washington, Department of Mechanical Engineering, Seattle, WA, January
- 2009 “University of Washington Zoo Footprints Project” University of Washington, Department of Mechanical Engineering, Seattle, WA, January
- 2009 Samsung SDS, Energy and Environmental Consulting Group, Los Angeles, CA, January

## Media

- “Americans Are Weirdly Obsessed With Paper Towels,” The Atlantic, December 10, 2018  
[\(https://www.theatlantic.com/family/archive/2018/12/paper-towels-us-use-consume/577672/\)](https://www.theatlantic.com/family/archive/2018/12/paper-towels-us-use-consume/577672/)
- “University scholars make 16<sup>th</sup> annual learning tour of Michigan,” The University Record, May 12, 2015  
<https://record.umich.edu/articles/university-scholars-make-16th-annual-learning-tour-michigan>
- “UM-Flint professor says Michigan will be cleaner, greener in 10 years,” ABC12, March 18, 2015  
<http://www.abc12.com/home/headlines/Greener-Michigan-296649221.html>
- “UM-Flint Experts Discuss Falling Gasoline Prices,” University of Michigan-Flint News, January 14, 2015  
<https://news.umflint.edu/2015/01/14/um-flint-experts-discuss-falling-gasoline-prices/>

## Professional Development

- 2021 Fundamentals of Program Assessment Workshop, June 15-17 2021, ABET
- 2021 Teaching Technology Fellows Institute, March-June 2021, University of Washington
- 2021 iTech Fellows Program, March-August 2021, University of Washington Tacoma
- 2020/21 Infusing Sustainability into the Curriculum (ISIC) faculty development workshop, 2020-2021, VentureWell & Engineering Unleashed
- 2019 Transforming STEM Higher Education, November 2019, Association of American Colleges & Universities, Chicago, IL
- 2019 Accreditation Board for Engineering and Technology, Inc., (ABET) Symposium, April 2019, Dallas, TX
- 2018 Research from the Field of Writing and Strategies for Helping Students Maintain Academic Integrity, Fall 2018, University of Michigan-Flint
- 2018 What Faculty Can Really Do to Promote Student Learning, Spring 2018, Oakland University
- 2018 Faculty Peer Observation & Coaching Workshop, Spring 2018, University of Michigan-Flint
- 2017 Original Lilly Conference on College Teaching, Oxford, OH
- 2017 Summer Strategic Plan (Workshop), Winter 2017, University of Michigan-Flint
- 2017 College of Arts and Sciences Fridays for Success (Student Success Advocate), Winter 2017, University of Michigan-Flint

- 2016 Korean-American Scientists and Engineers Association (KSEA) Scientists and Engineers Early-Career Development Workshop 2016, Vienna, VA
- 2016 Writing Your Philosophy of Teaching Statement, Fall 2016, University of Michigan-Flint
- 2016 Pre-Convocation Workshop (Why Failure is Essential to Student Learning), Fall 2016, University of Michigan-Flint
- 2016 2016 Summit for Transforming STEM Teaching in Higher Education, Boise State University, Boise, ID
- 2016 NSF-AEESP Grand Challenges Workshop 2016, Rice University, Houston, TX
- 2015 KSEA Scientists and Engineers Early-Career Development Workshop 2015, Vienna, VA
- 2015 Foundations of Academic Advising Workshop Series, Fall 2015, University of Michigan-Flint
- 2015 Building Bridges & Scaffolding Success (Forum), Winter 2015, University of Michigan-Flint
- 2014 Faculty Peer Observation and Feedback Workshop, Fall 2014, University of Michigan-Flint
- 2014 Debunking the Tenure Myths (Workshop), Fall 2014, University of Michigan-Flint
- 2014 Breaking Through the Barriers to Writing Scholarly Publications and Proposals (Workshop), Fall 2014, University of Michigan-Flint
- 2014 Michigan Engineering-Community Colleges Association Annual Meeting 2014, Oakland University, Rochester, MI
- 2014 Grant-Writing Workshop Series, 2014, University of Cincinnati, Cincinnati, OH
- 2013 KSEA Scientists and Engineers Early-Career Development Workshop 2013, Atlanta, GA

## **Memberships in Professional Organizations**

Association of Environmental Engineering and Science Professors (AEESP)  
 International Society of Industrial Ecology (ISIE)  
 American Society of Mechanical Engineers (ASME)  
 Korean-American Scientists and Engineers Association (KSEA)