Sherri M. Cook

Curriculum Vitae

Assistant Professor

Civil, Environmental, & Architectural Engineering Department, University of Colorado-Boulder

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Appointments

Aug. 2014 - present	Assistant Professor Dept. of Civil, Environmental, and Architectural Engineering, CU-Boulder
2012	Graduate Student Instructor Dept. of Civil and Environmental Engineering, University of Michigan
2008-2014	Graduate Student Research Assistant Dept. of Civil and Environmental Engineering, University of Michigan

Education

Ph.D. *University of Michigan*, Ann Arbor, MI
May 2014 Environmental Engineering
Dissertation: Analysis-Driven Sustainable Design of Waste Management Systems for Unused Medications & Wastewater Solids
Co-Advisors: Steven Skerlos and Nancy Love
Dissertation Committee: Lutgarde Raskin and Eric Martens

M.S.E. *University of Michigan*, Ann Arbor, MI
Dec 2009 Environmental Engineering

B.S. *Virginia Tech*, Blacksburg, VA
May 2008 Civil Engineering

Awards & Honors

2013-2014	Rackham Predoctoral Fellow
2010-2013	Graham Sustainability Institute Doctoral Fellow
2010	Michigan Water Environment Association Jack H. Wagner Scholarship
2009-2012	National Science Foundation Graduate Research Fellow
2010	Michigan Water Environment Association Jack H. Wagner Scholarship
2008-2009	Phi Kappa Phi Honor Society National Fellow
2008	Virginia Tech College of Engineering Outstanding Senior
2007, 2006	Morris K. Udall Scholar

Publications

(underline denotes student that Cook advised as primary advisor; *denotes student that Cook advised as non-primary advisor; last or corresponding author identifies Principal Investigator)

Peer-Reviewed Journal Articles

Cook, S.M.; Skerlos, S.J.; Raskin, L.; Love, N.G. The establishment of a stability algorithm for anaerobic codigestion (2017), In Press at *Water Research*. http://dx.doi.org/10.1016/j.watres.2017.01.027

Thompson, K.; Shimabuku, K.K.*; Kearns, J.P.; Knappe, D.R.U.; Summers, R.S.; **Cook, S.M.** Environmental comparison between biochar and activated carbon for tertiary wastewater treatment (2016), *Environmental Science & Technology*, *50* (20), 11253–11262. http://pubs.acs.org/doi/full/10.1021/acs.est.6b03239

Cook, S.M.; VanDuinen, B.J.; Love, N.G.; Skerlos, S.J. Life cycle comparison of environmental emissions from three disposal options for unused pharmaceuticals (2012), *Environmental Science & Technology*, *46* (10), 5535-5541. http://pubs.acs.org/doi/full/10.1021/es203987b

Published Correspondences

Cook, S.M.; Love, N.G.; Skerlos, S.J. Response to "Comment on 'Life cycle comparison of environmental emissions from three disposal options for unused pharmaceuticals'" (2012), *Environmental Science & Technology*, *46* (15), 8521–8522. http://pubs.acs.org/doi/full/10.1021/es302534a

Anticipated Peer-Reviewed Journal Articles

Jones, C.H.; Shilling, E.; Linden, K.; **Cook, S.M.** An environmental assessment framework for small water systems and its application to drinking water disinfection. In preparation for submission to *Environmental Science & Technology*.

Thompson, K.; Summers, R.S.; **Cook, S.M.** Treatability of real and a new synthetic bathroom greywater: chlorination, biodegradation, and adsorption. In preparation for submission to *Water Research*.

Jones, C.H.; Terry, P.*; Summers, R.S.; **Cook, S.M.** Environmentally sustainable scenarios for biological filtration compared to rapid media filtration. In preparation for submission to *Environmental Science & Technology*.

Byrne, D.M.; Lohman, H.A.C.; **Cook, S.M.**; Peters, G.M.; Guest, J.S. Frontier Review: Life Cycle Assessment of Urban Water Infrastructure. In preparation for submission to *Environmental Science: Water Research & Technology*.

Conference Proceedings

Guest, J.S.; **Cook, S.M.**; Skerlos, S.J.; Love, N.G. A methodology to assess the environmental impacts of upgrading wastewater infrastructure: A case study to evaluate energy recovery from black water. *Proceedings of the 82nd Annual WEF Technical Exhibition and Conference (WEFTEC)*, Orlando, Florida, October 2009.

Cook, S.M.; Guest, J.S.; Skerlos, S.J.; Love, N.G. Environmental characteristics of different energy recovery systems from the management of sewage sludge and food waste. *Proceedings of the 12th IWA Sludge Conference*, Harbin, China, August 2009.

Contracts and Grants

Current

U.S. Environmental Protection Agency (2014-2017), $4,099,973 "Design of Risk-reducing, Innovative-implementable, Small-system Knowledge (DeRISK)" Small Drinking Water System Research Center, Lead PI: Scott Summers; PIs: Robin Collins, James Malley, Karl Linden; co-PIs: Joy Barrett, **Sherri Cook**, Chris Corwin, Aaron Dotson, William Hogrewe, Kiril Hristovski, Fernando Rosario-Ortiz, Chad Seidel, James Uber, Paul Westerhoff.

Phoenix Services, LLC (2016-2017), $40,000 "Co-Digestion Pilot Study with Steel Slag" PI: Mark Hernandez; co-PI: **Sherri Cook**.

Completed

U.S. Environmental Protection Agency (2010-2011), $9,888, "Development of a Low-Maintenance Anaerobic Biogas System for Use in Developing Countries," PI: Steven Skerlos; Other Investigators: **Sherri Cook**, Heather Dorer, Jinhyung Hwang, Zijia Li. *People, Prosperity and the Planet (P3) Student Design Competition for Sustainability.*

Professional Presentations

(† denotes presenter, underline denotes student Cook advised as primary advisor; *denotes student Cook advised as non-primary advisor)

Conference Oral Presentations

Terry, P.G.†*; Jones, C.H.; **Cook, S.M.**; Summers, R.S. Evaluation of Extended EBCT Biofilters for Small Systems Based on Biomass Development and Distribution. *American Water Works Association Water Quality Technology Conference & Exhibition*, Indianapolis, IN, November 2016.

Leow, S.; Shoener, B.D.; Li, Y.; DeBellis, J.L.; Davis, R.; Laurens, L.M.L.; Nagle, N.; Pienkos, P.T; **Cook, S.M.**; Strathmann, T.J; Guest, J.S. Optimization of integrated cultivation and aqueous conversion processes through pseudo-mechanistic modeling for variable biochemical compositions. *Algal Biomass Summit*, Phoenix, AZ, October 2016.

Cornejo, P.K.†, Hogrewe, B., **Cook, S.M.**, Jones, C.H., Meyer, J. A sustainability framework for small systems: Multi-criteria decision analysis to evaluate drinking water treatment systems. *5th International Congress of Sustainability Science & Engineering*, Suzhou, China, October 2016.

Thompson, K.A.†; Shimabuku, K.T.*; Kearns, J.P., Knappe, D.R.U.; Summers, R.S; **Cook, S.M.** An environmental comparison between powdered activated carbon and biochar for tertiary wastewater treatment. *Biochar 2016*, Corvallis, OR, August 2016.

Cornejo, P.K.†; Hogrewe, B.; Jones, C.H.; **Cook, S.M.** Improving Decision Support for Small Drinking Water Systems: An Innovative Approach to Alternatives Assessment. *American Water Works Association 16th Annual Conference & Exposition*, Chicago, IL, June 2016.

Jones, C.H.†; Shilling, E.; **Cook, S.M.** Sustainability Comparison of Innovative and Conventional Treatment Technologies for Small Systems. *Rocky Mountain Student Region AWWA and WEA 13th Annual Student Conference*, Laramie, WY, May 2016.

Thompson, K.A.†; Shimabuku, K.T.*; Kearns, J.P., Knappe, D.R.U.; Summers, R.S; **Cook, S.M.** An environmental comparison between powdered activated carbon and biochar for tertiary wastewater treatment. *Rocky Mountain Student Region AWWA and WEA 13th Annual Student Conference*, Laramie, WY, May 2016.

Shilling, E.; Linden, K.; **Cook, S.M.**† A Comparison of Life Cycle Environmental Emissions from Disinfection Technologies for Small Drinking Water Systems. *Association of Environmental Engineering and Science Professors (AEESP) Education and Research Conference*, New Haven, CT, June 2015.

Shilling, E.†; Linden, K.; **Cook, S.M.** Sustainable Solutions for Small Water Systems: An Environmental Assessment Framework and Its Application to Drinking Water Disinfection Technologies. *American Water Works Association 15th Annual Conference & Exposition*, Anaheim, CA, June 2015.

Shilling, E.†; Linden, K.; **Cook, S.M.** Sustainable Solutions for Small Water Systems: An Environmental Assessment Framework and Its Application to Drinking Water Disinfection Technologies. *Rocky Mountain Student Region AWWA and WEA 12th Annual Student Conference*, Las Cruces, NM, May 2015.

Shilling, E.; Linden, K.; **Cook, S.M.**† Sustainable Solutions for Small Water Systems: A Comparison of the Life Cycle Environmental Emissions of Conventional & Innovative Technologies. *Engineering Sustainability Conference*, Pittsburgh, PA, April 2015.

Shilling, E.; Linden, K.; **Cook, S.M.**† Sustainable Solutions for Small Water Systems: An Environmental Assessment Framework and Its Application to Drinking Water Disinfection Technologies. *International Water Association Conference on Water Efficiency and Performance Assessment of Water Services*, Cincinnati, Ohio, April 2015.

Cook, S.M.†; Skerlos, S.J.; Love, N.G. Resource recovery from waste: A design-oriented analysis of anaerobic co-digestion stability. *Borchardt Conference*. Ann Arbor, MI, February 25, 2014.

Cook, S.M.†; Love, N.G. A regional strategy for managing food processing and septage waste: The Grand Traverse region collaboration. *Biogas Summit*, Flint, MI, October 2010.

Cook, S.M.†; Guest, J.S.; Christianson, M.G.; Love, N.G.; Skerlos, S.J. Energy recovery from wastewater: Evaluation of resource management alternatives for appropriate and environmentally sustainable energy production. *Engineering Sustainability Conference*, Pittsburgh, PA, April 21, 2009.

Cook, S.M.†; Jaradat, A.Q.; Grimberg, S.J.; Holsen, T.M. Sustainable stormwater treatment: Colloid concentration effect on natural media filtration efficiency. *American Society of Civil Engineers' 2008 Virginias' Student Conference*, Summersville, WV, April 2008.

Cook, S.M.†; Novak, J.T. Sustainable wastewater treatment: Investigation of chemical, enzymatic, and/or biological agents as additives to enhance anaerobic digestion and reduce biosolids cake odor. *2nd Annual ACC Undergraduate Research Conference*, Charlottesville, VA, April 2007.

Invited Oral Presentations

Cook, S.M. † Designing a Sustainable and Closed-loop Water Treatment Cycle by Using Design Insights from Wastewater and Drinking Water Systems (invited seminar presentation). *Colorado School of Mines*, Golden, CO, February 2017.

Cook, S.M. † Energy Footprint of Water: Comparing Life Cycle Impacts of Water Treatment Alternatives to Support Sustainable Water Systems (invited seminar presentation). *National Center for Atmospheric Research*, Boulder, CO, January 2017.

Shaw, A.†; Corominas, L.; **Cook, S.M.** Wastewater Treatment Life Cycle Assessments (invited workshop presentation). *International Water Association Wastewater Treatment Modeling (WWTmod)*, Annecy, France, April 2016.

Cook, S.M. † Greywater Treatment: Sustainable Design Insights from Wastewater and Small Drinking Water Systems (invited seminar presentation). *Eawag Aquatic Research Institution*, Dübendorf, Switzerland, March 2016.

Cook, S.M.† Modeling Energy Production: Codigestion Overview and ADM1. Part of the Workshop "How Can Modeling be Effectively Used for Energy Balance Optimization" (invited workshop presentation). *International Water Association Wastewater Treatment Modeling (WWTmod)* Spa, Belgium, March 2014.

Conference Poster Presentations

Jones, C.H.†; **Cook, S.M.** Sustainability Comparison of Innovative and Conventional Filtration and Disinfection Technologies for Small Systems. *American Water Works Association Water Quality Technology Conference & Exhibition*, Indianapolis, IN, November 2016.

Kilake, P.†; Kumar, P.; **Cook, S.M.** Comparison of water reuse treatment options to maximize resource recovery from wastewater. *Rocky Mountain Student Region AWWA and WEA 13th Annual Student Conference*, Laramie, WY, May 2016.

Cook, S.M.†; Skerlos, S.J.; Love, N.G. A design-oriented stability analysis of anaerobic codigestion using ADM1. *IWA Wastewater Treatment Modeling (WWTmod)*, Spa, Belgium, March 2014.

Cook, S.M.†; Skerlos, S.J.; Love, N.G. Modeling anaerobic codigestion performance and reliability under varying influent compositions. *Association of Environmental Engineering and Science Professors Education and Research Conference*, Golden, CO, July 2013.

Cook, S.M.†; Delgado Vela, J.; Stadler, L.G. Modeling advancing the success of engineering service projects from the classroom to the field. *AEESP Education and Research Conference*, Golden, CO, July 2013.

Cook, S.M.†; VanDuinen, B.J.; Skerlos, S.J.; Love, N.G. Life cycle comparison of environmental impacts from alternative pharmaceutical disposal methods. *Association of Environmental Engineering and Science Professors (AEESP) Education and Research Conference*, Tampa, FL, July 2011.

Cook, S.M.†; Love, N.G. Two-phase anaerobic codigestion of septage and food processing waste: Designing a reliable, regional waste management strategy. *8th International Water Association Leading-Edge Conference on Water and Wastewater Technologies (LET)*, Amsterdam, the Netherlands, June 2011.

Dorer, H.†; Hwang, J.†; Li, Z.†; Twill, K.†; Coir, E.†; Gupta, A.†; Frederick, T.†; Schulman, B.; Collins, M.; Nagel, A.; McCleary, E.; Bhandari, A.; Kaniz, N.; Sung, C.; **Cook, S.M.**†; Skerlos, S.J. Development of a robust anaerobic biogas system for use in developing countries. *National Sustainable Design Exposition*, Washington, D.C., April 2011.

Cook, S.M.†; VanDuinen, B.J.; Skerlos, S.J.; Love, N.G. Life cycle comparison of environmental impacts from alternative pharmaceutical disposal methods. *Engineering Sustainability Conference*, Pittsburgh, PA, April 2011.

Teaching, Mentoring, & Advising

Courses Taught

Fall 2016. University of Colorado-Boulder, Sustainable Engineering Design (CVEN 5834), 13 enrolled. *New Course Development and New Course Offering*.

Fall 2016. University of Colorado-Boulder, Wastewater Treatment (CVEN 5534), 15 enrolled.

Spring 2016. University of Colorado-Boulder, Sustainability Principles for Environmental Engineers (CVEN 4834), 58 enrolled.

Fall 2015. University of Colorado-Boulder, Wastewater Treatment (CVEN 5534), 9 enrolled.

Spring 2015. University of Colorado-Boulder, Sustainability Principles for Environmental Engineers (CVEN 4834), 59 enrolled. *New Course Development and New Course Offering*.

Fall 2014. University of Colorado-Boulder, Wastewater Treatment (CVEN 5534), 14 enrolled.

Spring 2012. University of Michigan, Biological Processes in Environmental Engineering (CEE 592). Co-Instructor. 14 enrolled.

Course Development

Fall 2016. *Sustainable Engineering Design*, Graduate Course. Multidisciplinary (Environmental, Mechanical, Civil). Created a new design course focused on the emerging topics of sustainability assessments (e.g., life cycle assessment, life cycle costing, multi-criteria decisions) with a focus on the design, performance, and assessment of water and energy systems. Teaching and learning assessment material creation included: multi-topic and source reading materials, lecture materials (slides and notes), in-class activities, homework problems, semester design projects (6 deliverables and a final report and presentation).

Spring 2014. *Sustainability Principles for Environmental Engineers*, Undergraduate Required Course (sophomore level). Created a new course on the emerging topics of sustainability definitions, challenges, and engineering solutions. Teaching and learning assessment material creation included: multi-topic and source reading materials, lecture materials (slides and notes), in-class activities, example and homework problems, reading quiz questions, team projects, and examination materials.

Advising

PhD. Kyle Thompson (expected 2018). Christopher Jones (expected 2019). Allison Davis (expected 2020). Katherine Chambers (expected 2021).

Masters. Pranjali Kumar (project, 2015). Elizabeth Shilling (thesis, 2015). Pranoti Kikale (thesis, 2016).

Guest Lectures

"Water and Energy Nexus," MCEN 4228: Sustainable Energy; Oct 17, 2016 and Oct 19, 2015.

"Introduction to Sustainability Principles for Engineers," EVEN 1000: Introduction to Environmental Engineering; Dec 8, 2016, Dec 10, 2015, and Nov 20, 2014.

"Sustainability Assessments with Systems Modeling," CVEN 4147/5147: Civil Engineering Systems, Dec 8, 2015.

"Introduction to Evaluations of Wastewater Treatment Technologies using Life Cycle Assessment," CVEN 5834: Bioenergy and Bioresource Recovery, Dec 2, 2014.

"Life Cycle Assessment Case Study: Unused Medication," ES 313: Environmental Impact Assessment (Wellesley College), Feb 7, 2013.

Service Activities

Professional

Peer-Reviewer: Proposals
National Science Foundation (2015, 2016)

Peer-Reviewer: Research Projects
Water Environment Research Foundation Project Subcommittee (2014-present), Water Environmental Federation Technical Practice Update (2012)

Peer-Reviewer: Journals
Environmental Science & Technology, Water Research, Science of the Total Environment, Sustainable Chemistry & Engineering, Environmental Engineering Science, Waste Management.

University

Campus
Udall Scholarship Selection Committee (2016, 2017)
Faculty Student Mentor Program (2014)

Department
EVEN Graduate Committee (2016-present)
CEAE Curriculum Committee (2014-present)
CEAE Classroom Renovation Committee (2015)
CEAE Graduate Committee (2014-2015)
EVEN Curriculum Committee (2014-2015)

Conferences

Scientific Committees
IWA/WEF Nutrient Removal and Recovery, Denver, CO, July 2016
IWA Wastewater Treatment Modeling Conference, Annecy, France, April 2016 – Chair of Young Water Professional Scientific Committee and Workshop
IWA Wastewater Treatment Modeling Conference, Spa, Belgium, April 2014

Organizing Committees
Sustainable Energy Fellowship National Student Conference, Ann Arbor, MI, May 2009

Session Chair
Engineering Sustainability, Pittsburgh, PA, April 2015
IWA Wastewater Treatment Modeling, Spa, Belgium, April 2014
IWA Sludge Conference, Harbin, China, August 2009

Community Outreach

Rocky Mountain Water Environment Association Internship Committee (2016)
Detroit Area Pre-College Engineering Program (K-12, middle school). Designed and led hands-on water quality testing activities, Ann Arbor, MI (2009 and 2010)
Anaerobic Digester Installations; Potreritos and Bramadero, Nicaragua (2009); University of Michigan Multidisciplinary Design Service-Learning Course (trip leader, graduate advisor)