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Assistant Professor in Energy Resources
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EDUCATION

University of Kansas

Ph.D. – Environmental Engineering (2015)

Environmental Studies Graduate Certificate (2013), GPA: 3.960

Advisor: Belinda S.M. Sturm, Ph.D.

Dissertation: “Integrating spatial heterogeneity into sustainability assessments of biofuels from wastewater algae” (Defended with Honors)

University of Florida

B.S. – Environmental Engineering (December 2010)

Minor in Zoology, GPA: 3.960

Florida Engineering Intern (EI) license #1100017907

ACADEMIC APPOINTMENTS

Assistant Professor (2015-present), Sustainable Energy Management program, Department of Forest and Natural Resources Management, State University of New York College of Environmental Science and Forestry (SUNY ESF).

Graduate Research Assistant (2014-2015), Institute for Policy and Social Research, University of Kansas. Duties: Analyze data on treatment design and surrounding land characteristics for municipal wastewater treatment plants over time within an interdisciplinary team researching the factors that drive process design decisions.

Fellow (2012-2014), National Science Foundation (NSF) Integrative Graduate Education and Research Training (IGERT) program, University of Kansas. Duties: Incorporate original interdisciplinary research related to climate change into a dissertation project as part of the Climate Change, Humans, and Nature in the Global Environment (C-CHANGE) IGERT program.

Graduate Research Assistant (2011-2012), University of Kansas, NASA EPSCoR Grant. Duties: Perform life cycle assessment of bio-jet fuel production from algal lipids, monitor and maintain operations for four algal pond reactors at the Lawrence Wastewater Treatment Plant, and perform water quality analyses.

AWARDS

- 2017 Distinguished Teaching Award from the SUNY ESF Undergraduate Student Association
- 2015 Honors for the doctoral dissertation defense
- 2014 Honors for the comprehensive oral exam for doctorate
- 2013 Bruce W. Long Scholarship
- 2013 University of Kansas Graduate Student Research Competition award
- 2012 Kansas Water Environment Association (KWEA) Shirley Coles Scholarship Award
- 2012 University of Kansas GEA Research Competition, 1st Place for Oral Presentations
- 2012 KWEA Annual Student and Young Professionals Poster Competition, 2nd Place
- 2012 J. Lloyd Barron Award (awarded to one graduate student annually by the environmental engineering faculty at the University of Kansas)
- 2012 National Science Foundation Graduate Research Fellowship: Honorable Mention
- 2012 University of Kansas Graduate Student Research Competition award
- 2011 NSF IGERT Fellowship for the C-CHANGE program at the University of Kansas
- 2011 University of Kansas CEAE Department Tolaney Family Scholarship
- 2011 University of Kansas CEAE Department Zadigan Memorial Scholarship
- 2011 University of Kansas School of Engineering Lyder Graduate Fellowship

PEER-REVIEWED PUBLICATIONS

Frank JR, Fortier M-OP, Brown TR, and Malmsheimer RW. (under review at *Sustainable Production and Consumption*) "Comparative life cycle assessment of a reusable menstrual cup and disposable tampons."

Fortier M-OP, Roberts GW, Stagg-Williams SM, and Sturm BSM. (2017) "Determination of the life cycle climate change impacts of land use and albedo change in algal biofuel production." *Algal Research* (accepted).

Roberts GW, Sturm BSM, Hamdeh UH, Stanton GE, Rocha A, Kinsella TL, Fortier M-OP, Sazdar S, Detamore MS, and Stagg-Williams SM. (2015) "Promoting catalysis and high-value product streams by in-situ hydroxyapatite crystallization during hydrothermal liquefaction of microalgae cultivated with reclaimed nutrients." *Green Chemistry* 17(4), 2560-2569.

Fortier M-OP, Roberts GW, Stagg-Williams SM, and Sturm BSM. (2014) "Life cycle assessment of bio-jet fuel from hydrothermal liquefaction of microalgae." *Applied Energy* 122, 73-82.

Roberts GW, Fortier M-OP, Sturm BSM, and Stagg-Williams SM. (2013) "Promising pathway for algal biofuels through wastewater cultivation and hydrothermal conversion." *Energy & Fuels* 27(2), 857-867.

Fortier M-OP and Sturm BSM. (2012) "Geographic analysis of the feasibility of collocating algal biomass production with wastewater treatment plants." *Environmental Science & Technology* 46(20), 11426-11434.

CONFERENCE PUBLICATIONS

Fortier M-OP and Sturm BSM. (2012) “Geographic analysis of algae production for biofuels at Kansas wastewater treatment plants.” Proceedings of the Water Environment Federation, Water Environment Federation Technical Exhibition and Conference (WEFTEC) 2012, Technical Session 50.

ORAL CONFERENCE PRESENTATIONS

(Presenting author underlined)

Fortier M-OP and Sturm BSM. June 28, 2017. “Geographic differences in the effects of direct land use change and the life cycle climate change impacts of renewable gasoline from wastewater algae.” *New England Energy Research Forum*, Worcester, MA.

Fortier M-OP, Roberts GW, Sturm BSM, and Stagg-Williams SM. June 27, 2016. “Regional differences in land use and albedo change impacts of algal biofuels in the United States.” *International Conference on Algal Biomass, Biofuels and Bioproducts*. San Diego, CA.

Fortier M-OP, Roberts GW, Sturm BSM, and Stagg-Williams SM. November 18, 2014. “Geographically specific life cycle assessment of biofuels from wastewater microalgae.” *American Institute of Chemical Engineers Annual Meeting*. Atlanta, GA.

Fortier M-OP, Roberts GW, Sturm BSM, and Stagg-Williams SM. October 2, 2014. “Land use change impacts by cultivation location: a geographic life cycle assessment of biofuels from wastewater algae.” *Algae Biomass Summit*. San Diego, CA.

Roberts GW, Fortier M-OP, Sturm BSM, and Stagg-Williams SM. November 7, 2013. “Hydrothermal liquefaction of wastewater derived green alga.” *American Institute of Chemical Engineers Annual Meeting*. San Francisco, CA.

Roberts GW, Gupta A, Fortier M-OP, Rocha A, Kinsella TL, Sturm BSM, Peltier E, Stagg-Williams SM. November 6, 2013. “Mining municipal wastewater for fertilizers and catalysts after crude oil extraction.” *American Institute of Chemical Engineers Annual Meeting*. San Francisco, CA.

Fortier M-OP, Roberts GW, Sturm BSM, and Stagg-Williams SM. June 19, 2013. “Life cycle assessment of bio-jet fuel from hydrothermal liquefaction of microalgae.” *International Conference on Algal Biomass, Biofuels and Bioproducts*. Toronto, Ontario, Canada.

Fortier M-OP, Roberts GW, Sturm BSM, and Stagg-Williams SM. November 1, 2012. “Life cycle assessment of bio-jet fuel from hydrothermal liquefaction of microalgae.” *American Institute of Chemical Engineers Annual Meeting*. Pittsburgh, PA.

Roberts GW, Fortier M-OP, Sturm BSM, and Stagg-Williams SM. November 1, 2012. “Thermochemical conversion to biocrude from pilot scale grown wastewater fed algae.” *American Institute of Chemical Engineers Annual Meeting*. Pittsburgh, PA.

Fortier M-O and Sturm BSM. October 2, 2012. “Geographic analysis of algae production for biofuels at Kansas wastewater treatment plants.” *Water Environment Federation Technical Exhibition and Conference (WEFTEC)*. New Orleans, LA.

Fortier M-O and Sturm BSM. August 28, 2012. “Tradeoffs for potential algal production at rural and urban Kansas wastewater treatment plants.” *Kansas Water Environment Association (KWEA) and Kansas American Water Works Association (KsAWWA) Joint Annual Conference*. Topeka, KS.

Fortier M-O and Sturm BSM. June 13, 2012. “Initial life cycle assessment results for bio-jet fuel from algal feedstocks.” *International Conference on Algal Biomass, Biofuels, Bioproducts*. San Diego, CA.

Fortier M-O and Sturm BSM. June 13, 2012. “Fate of algal lipids during solar and passive drying.” *International Conference on Algal Biomass, Biofuels and Bioproducts*. San Diego, CA.

Fortier M-O and Sturm BSM. October 18, 2011. “Initial life cycle assessment results for bio-jet fuel from algal feedstocks.” *American Institute of Chemical Engineers Annual Meeting*. Minneapolis, MN.

INVITED PRESENTATIONS (Presenting author underlined)

Fortier M-OP. December 21, 2015. “Measuring the potential land use change impacts of renewable energy technologies in a life cycle assessment.” Invited webinar hosted by the Environmental Protection Agency RE-Powering America’s Land Initiative, Washington, DC.

Fortier M-OP, Roberts GW, Sturm BSM, and Stagg-Williams SM. April 22, 2015. “Life cycle assessment as a planning tool in environmental engineering.” *65th Annual Environmental Engineering Conference*, Lawrence, KS.

POSTER CONFERENCE PRESENTATIONS (Presenting author underlined)

Therasme O, Fortier M-OP, Volk TA, and Amidon T. November 16, 2016. “Climate change impacts of bioethanol production from willow.” *American Institute of Chemical Engineers Annual Meeting*. San Francisco, CA.

Rocha A, Roberts GW, Kinsella TL, Fortier M-OP, Sturm BSM, and Stagg-Williams SM. November 6, 2013. “Pyrolysis decomposition analysis of wastewater derived microalgae via TGA-FTIR.” *American Institute of Chemical Engineers Annual Meeting*. San Francisco, CA.

Fortier M-OP, Roberts GW, Sturm BSM, and Stagg-Williams SM. July 16, 2013. “Life cycle assessment of bio-jet fuel from hydrothermal liquefaction of microalgae.” *Association of Environmental Engineering & Science Professors (AEESP) 50th Anniversary Conference*. Golden, CO.

Fortier M-OP, Roberts GW, Sturm BSM, and Stagg-Williams SM. April 17, 2013. “Life cycle assessment of bio-jet fuel from hydrothermal liquefaction of microalgae.” *University of Kansas Environmental Engineering Conference*, Lawrence, KS.

Roberts GW, Fortier M-OP, Sturm BSM, and Stagg-Williams SM. October 31, 2012. "Comparison of biocrude from micro- and macroalgae." *American Institute of Chemical Engineers Annual Meeting*. Pittsburgh, PA.

Roberts GW, Fortier M-OP, Sturm BSM, and Stagg-Williams SM. July 10-11, 2012. "Biocrude production from pilot scale wastewater grown algae." *U.S. Department of Energy Biomass 2012: Confronting Challenges, Creating Opportunities*. Washington D.C.

Fortier M-O and Sturm BSM. June 12, 2012. "Implications and potential for urban vs. rural collocation of algal production and wastewater treatment." *International Conference on Algal Biomass, Biofuels and Bioproducts*. San Diego, CA.

Fortier M-O and Sturm BSM. April 18, 2012. "Implications and potential for urban vs. rural collocation of algal production and wastewater treatment." *University of Kansas Environmental Engineering Conference/Kansas Water Environment Association Poster Competition*. Lawrence, KS.

Fortier M-O and Sturm BSM. April 16, 2012. "Implications and potential for urban vs. rural collocation of algal production and wastewater treatment." *International Biomass Conference*. Denver, CO.

OTHER PRESENTATIONS (Presenting author underlined)

DeMarco M, Endreny TA, and Fortier M-OP. April 25, 2017. "Benefits of trees in reducing climate change impacts and cooling loads of buildings." (Poster) *SUNY ESF Spotlight on Student Research Symposium*, Syracuse, NY.

Fortier M-OP, Roberts GW, Sturm BSM, and Stagg-Williams SM. April 9, 2015. "Geographically specific life cycle assessment of biofuels from wastewater algae." *University of Kansas Graduate Student Research Competition*, Lawrence, KS.

Fortier M-OP, Roberts GW, Sturm BSM, and Stagg-Williams SM. April 11, 2013. "Life cycle assessment of bio-jet fuel from hydrothermal liquefaction of microalgae." (Poster). *University of Kansas Graduate Engineering Association Research Competition*, Lawrence, KS.

Fortier M-O and Sturm BSM. April 11, 2013. "Geographic analysis of algae production for biofuels at Kansas wastewater treatment plants." *University of Kansas Graduate Engineering Association Research Competition*, Lawrence, KS.

Fortier M-OP, Roberts GW, Sturm BSM, and Stagg-Williams SM. March 13, 2013. "Life cycle assessment of bio-jet fuel from hydrothermal liquefaction of microalgae." (Poster). *University of Kansas Graduate Student Research Competition*, Lawrence, KS.

Fortier M-O. May 23, 2012. "Climate change and human impacts of renewable energy and mining development in Arctic regions." (Poster). *University of Kansas IGERT Program Poster Symposium*. Kangerlussuaq International Science Support Center. Kangerlussuaq, Greenland.

Fortier M-O. May 16, 2012. "Climate change and human impacts of renewable energy and mining development in Arctic regions." (Poster). *University of Kansas IGERT Program Poster Symposium*. University of Greenland. Nuuk, Greenland.

Fortier M-O and Sturm BSM. April 26, 2012. "Initial life cycle assessment results for bio-jet fuel from algal feedstocks." *University of Kansas Graduate Engineering Association Research Competition*. Lawrence, KS.

Fortier M-O and Sturm BSM. March 7, 2012. "Implications and potential for urban vs. rural collocation of algal production and wastewater treatment." (Poster). *University of Kansas Graduate Student Research Competition*. Lawrence, KS.

GRANTS FUNDED

Brown TR (PI), Fortier (co-PI), Malmsheimer RW (co-PI), and Volk TA (co-PI). Evaluating the ability of land to replicate Indian Point's electricity supply profile. Syracuse Center of Excellence Faculty Fellow Program. \$15,000. 2017-2018.

Fortier M-OP. Albedo modeling of microalgae-rich water bodies for integration into life cycle assessments. SUNY-ESF Seed Grant. \$6,666. 2016-2017.

Brown TR (PI), Volk TA (co-PI), and Fortier M-OP (co-PI). Development of stochastic techno-economic and life cycle models for quantifying the economic and environmental costs of cellulosic bioenergy. USDA National Institute of Food and Agriculture and DOE Biomass Research and Development Initiative (BRDI). \$906,722. 2016-2019.

Volk TA (PI), Malmsheimer RW (co-PI), Kiernan D (co-PI), and Fortier M-OP (co-PI). Carbon cycling and environmental impacts from collecting and processing forest biomass in NY. New York State Energy Research and Development Authority (NYSERDA). \$49,992. 2017.

TEACHING

Faculty Instructor, SUNY ESF, Syracuse, NY.

SRE 325/525: Energy Systems (3 credits, Fall, recurring annually from 2015-present)

SRE 479/679: Life Cycle Assessment (3 credits, Spring, recurring annually from 2016-present)

SRE 225: Physics of Energy (3 credits, Fall, recurring annually from 2016-present)

FOR 797: Sustainable Energy Graduate Seminar (1 credit, co-taught, Fall and Spring)

Graduate Teaching Assistant, University of Kansas. Instructor: Belinda S.M. Sturm, Ph.D.

CE 477: Introduction to Environmental Engineering (Spring 2015)

CE 495/895: Life Cycle Assessment (Fall 2014)

CE 573/773: Biological Principles of Environmental Engineering (Spring 2012)

Teacher/Tutor for the SAT and ACT, Kaplan Test Prep & Admissions, Gainesville, FL. 2008-2010.

GUEST LECTURESSUNY ESF

“Energy Challenges, Effects, and Human Impacts” in FOR 232 Natural Resources Ecology, Spring 2016 and Spring 2017.

“Tiny Algae Making Big Waves: Progress in Algal Bioenergy” in FOR 132 Orientation Seminar for the Forest and Natural Resources Management Department, Fall 2016.

“Discovering Hidden Environmental Impacts through Life Cycle Assessment” in FOR 132 Orientation Seminar for Forest and Natural Resources Management, Fall 2015.

Canisius College

“Energy in Agriculture” in PHI 245 Animal Ethics, Fall 2016.

Expeditionary Learning Middle School, Syracuse, NY

“Biofuels and Harnessing Energy from Waste Materials” for eCybermission, Fall 2016.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

2017-present	American Geophysical Union (AGU)
2017-present	Society of Women Engineers (SWE)
2014-present	American Indian Science & Engineering Society (AISES), Associate Member
2013-present	Association of Environmental Engineering and Science Professors (AEESP)
2012-2015	American Institute of Chemical Engineers (AIChE)
2010-2014	Water Environment Federation (WEF)

GRADUATE STUDENTS ADVISED – MAJOR PROFESSOR (MP)

Breck Sullivan (Fall 2016-present) – MS Environmental Modeling & Monitoring

Dynta Trishana Munardy (Fall 2016-present) – MS Forest Resources Management: Sustainable Energy

Amanda Trombly (Spring 2017-present) – MS Forest Resources Management: Sustainable Energy

GRADUATE STUDENTS ADVISED – STEERING COMMITTEE

Andry Mickael Razanakoto, MS Natural Resource Management (2015-2017) (MP: Tristan Brown)

Maggie DeMarco, PhD in Environmental Resources Engineering (2016-present) (MP: Ted Endreny)

GRADUATE STUDENTS ADVISED – CHAIR OR EXAMINER

Sheng Yang, PhD in Geospatial Information Science & Engineering, examiner on doctoral defense in 2017 (MPs: Giorgos Moutrakis and Timothy Volk)

Adam Fix, PhD in Environmental & Natural Resources Policy, chair on doctoral candidacy exam in 2016 (MP: Jack Manno)

Jonathan Masih Das, PhD in Environmental Science, examiner on doctoral candidacy exam in 2016 (MP: Wendong Tao)

MENTORING

Collegiate Science and Technology Entry Program (CSTEP) Mentor (Spring 2017-present), SUNY ESF. Duties: Mentor students from historically underrepresented and/or economically disadvantaged backgrounds for educational and professional success.

Capstone Mentor (Spring 2016-present), Renewable Energy option and Environmental Analysis option in the Environmental Science major, SUNY ESF. *Undergraduate students mentored*: Adam Sheely (graduated Spring 2016) and Jyotika Shah (graduated Spring 2017).

Research Mentor (June 2012 and June 2014), *Haskell Environmental Research Studies (HERS) Climate Change Summer Institute*, Haskell Indian Nations University, Lawrence, KS. Directors: Dan Wildcat, PhD, and Joane Nagel, PhD. Duties: Assist undergraduate student interns develop and perform research projects related to indigenous studies and climate change.

Undergraduate students mentored through the HERS Institute:

David Tyndall (Red Lake Nation), Environmental Science major, Haskell Indian Nations University
Donald Osborne (Cherokee Nation), BS Business Administration, Haskell Indian Nations University
Philip Stand (Sac and Fox Nation), BS Business Administration, Haskell Indian Nations University
Lauren Mahealani Kapono (Hawaii), Marine Science major, University of Hawai'i at Hilo
Sheila Northbird (Red Lake Nation), Natural Resources major, Leech Lake Tribal College
Natasha Chenot (Pawnee Nation), Environmental Science major, Haskell Indian Nations University
Angela Shuckahosee (Sac and Fox Nation), Haskell Indian Nations University
Amy Waishog (Woleia and Yap), BA Geography, University of Hawai'i at Hilo

Research Mentor (2011-2014), University of Kansas, Lawrence, KS. Duties: Assist with projects and teach analyses to students working in Dr. Belinda Sturm's laboratory group and through the Biofuels Development: Feedstock to Tailpipe NSF Research Experience for Undergraduates (REU) program.

Undergraduate students mentored at the University of Kansas:

Emily Cook, Civil Engineering with an Environmental Emphasis major, University of Kansas
Katie Legenski, Chemical Engineering major, Pennsylvania State University
Cody Siroka, Chemical Engineering major, University of Massachusetts-Amherst
Luigi Basalo, Civil Engineering with an Environmental Emphasis major, University of Kansas
Elizabeth Murray, BS Chemical Engineering, Columbia University

SELECTED SERVICE & VOLUNTEERING

Graduate Education Committee (Fall 2017-present), Department of Forest and Natural Resources Management, SUNY ESF, three-year term.

Search Committee Member (2017), Chief Diversity Officer administrative position at SUNY ESF.

Search Committee Member (2017), Construction Management tenure-track Assistant Professor position at SUNY ESF.

Reviewer (2016), NSF Environmental Engineering CAREER proposals.

Committee Member (2016-present), SUNY ESF Student Life Committee.

Committee Member (2016-present), SUNY ESF Sustainability Committee.

Co-Chair (2016-present), Energy Working Group of the SUNY ESF Sustainability Committee.

Judge (June 2, 2016), Environmental Summit Research Symposium, SUNY ESF Outreach.

Committee Member (Fall 2015), Ad Hoc Committee on the Sustainable Energy Management Curriculum, Department of Forest and Natural Resources Management, SUNY ESF.

Scholarship Reviewer (July 2015), *American Indian Science & Engineering Society*.

Judge (April 26, 2014), *Undergraduate Research Symposium*, University of Kansas.

Volunteer (2013-2015), *FIV Cat Rescue*, Fort Bragg, CA. Duties: Educate about the feline immunodeficiency virus (FIV) and advocate for adoption of FIV positive cats online.

Reviewer (2013-present), Duties: Reviewed submitted articles upon request for the peer-reviewed journals *Water Research*, *Journal of Cleaner Production*, and *GCB Bioenergy*.

Volunteer (2011-2013), *HELP Humane*, Belton, MO. Duties: Assist with routine cleaning of the no-kill shelter on Sunday mornings, socialize special needs cats, and assist with adoption promotions.

Policy Intern (Spring 2013), *Climate & Energy Project*, Supervisor: Dorothy Barnett. Duties: Attend Kansas House and Senate committee meetings and provide summaries of the proceedings and of current issues related to energy and the Kansas Renewable Portfolio Standard in the state legislature.

Abstract Reviewer (2012), *LCA XII Conference*, American Center for Life Cycle Assessment.

Records Station Captain & Volunteer (2009-2010), *Operation Catnip*, Gainesville, FL. Duties: Complete records and ensure safe recovery of cats for the monthly feral cat spay/neuter clinic.

Adoption Counselor & Volunteer (2008-2010), *Gainesville Pet Rescue*, Gainesville, FL.

Team Member (2007-2010), *Engineers Without Borders – Macedonia Project*, University of Florida. Supervisor: Timothy G. Townsend, Ph.D. Duties: Design leachate collection and treatment options for the landfill in Kratovo, Macedonia, and investigate wastewater treatment and composting possibilities.