

Curriculum Vitae

MADELINE HOPE TYSON

Phd Candidate | School of Sustainability | Arizona State University
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Education

ARIZONA STATE UNIVERSITY August 2011-June 2018(*Expected*)
Phd Candidate: Sustainability
Dissertation Title: Co-production in Distributed Energy Transitions

UNIVERSITY OF COLORADO at BOULDER May 2009
Major: Environmental Engineering
Applied Ecology and Microbiology Specialty

Professional Experience

Score Algae Inc., *Founder (2014-2018)*

- Development of algae harvesting and reuse technology & social entrepreneurship network

Energy Policy Innovation Council, *Research Assistant (2016-2017)*

- Energy policy analysis and communication
- Podcast development and production

Advanced Research Projects – Energy (DOE, ARPA-E), *Technology to Market Summer Scholar (2014 - 2015)*

- Research and analysis of the cost/opportunity space for distributed energy resources

Center for Behavior, Institutions and the Environment, *Research Assistant (2011 - 2012)*

- Conducting resource use behavioral experiments

The Breakthrough Institute, *Energy Policy Research Fellow (2010)*

- U.S. energy policy modeling and analysis

American Renewable Energy and Power, *Business & Technology Development Manager (2009-2010)*

- Renewable energy technology consulting (PV, EE, CHP, passive cooling)
- Financial modeling & business plan development consulting

Research and Professional Interests

Energy policy; innovation policy; information commons and governance; co-production; governance of smart cities; P2P networks; social entrepreneurship; open innovation platforms; distributed energy governance; feedback systems; mixed-methods social science; agent-based modeling; participatory modeling; behavioral experiments; common pool resource games; scale, modularity, and transaction costs theories; climate change governance; carbon markets; algae

Publications:

Published Peer Reviewed Papers, in Review or Advanced Preparation

Tyson M., Janssen, M., *In review*. Do patents improve the innovation process? *Journal of Economic Behavior and Organization*. <https://cbie.asu.edu/do-patents-improve-innovation-process>

Tyson M., Tuttle, J., *In prep*. Probabilistic supply-side valuations of distributed energy resources: Can we generalize?

Tyson, M., *In prep.* The Scale of Smart: Investment and resiliency tradeoffs for local energy management decision-making.

Tyson M., Mancha-Cisneros M.M., Bernstein M.J., Brady U., Shin H., Smith-Heisters S., Vallury S., Rubiños C.A., Ratajczyk E. *In prep.* Found in translation: Dialogues between coding variables and frameworks in studies of Common-pool Resources

Tyson M., *In prep.* Using the grammar of rules to evaluate modularity in electricity infrastructure co-production

Janssen, M., Tyson, M., & Lee, A. (2014). The effect of constrained communication and limited information in governing a common resource. *International Journal of the Commons*, 8(2), 617-635.

Tyson, Madeline. *Capacity*. The Energy Encyclopedia. 2012 (In press)

Tyson, Madeline. *Vertical Integration*. The Energy Encyclopedia. 2012 (In press)

Teaching & Experience

Instructor: Math Tools for Modeling Arizona State University (2016-Present)

Instructor: Calculus and Probability for the Life and Social Sciences Arizona State University (2016-present)

Teaching Assistant: Introduction to Applied Mathematics for the Life and Social Sciences Arizona State University, (2014-2015)

National Science Foundation GK12 Sustainability Science for Sustainable Schools Educator (2011-2014)

Hemaya NGO (Egypt) Science educator and administrator (2010-2011)

Selected Conferences & Presentations

Tyson, M., Geary, J., Mancha, M., Whitney, C., Lien, A., Incentives and barriers for sharing research outputs from socio-ecological systems research. International Association for the Study of the Commons, Utrecht, Netherland; (July, 2017)

Co-organizer and Participant, *National Socio-Environmental Synthesis Center Graduate (SESYNC) Student Pursuit Program: "Breaking the Code"*, Annapolis, MD; (2016 – present).

- Research broadly focused on identifying a common understanding of case study coding schemes, protocols, structures, and variables to establish the goals and parameters necessary for engaging in longer-term collaboration, unified approaches, increased access to data, and practical applications within 'commons' research.

Tyson, M. 2014. Effect of Patents on Tendency to Copy. Presented at 2nd Thematic Conference on Knowledge Commons. IASC. (NYU, September 2014)

Adapting to Distributed Energy Resources: Mapping the Opportunity and Cost Space. Presented at ARPA-E, Department of Energy. (Washington DC, August 2014)

Tyson, M. 2014. Carbon Footprints Behavior Change Experimental App: Classroom Adaptation. North American Association for Environmental Education (NAAEE). (Ottawa, October 2014)

Cultivating Business and Community Partnerships for Sustainable Practices: Development of Living Laboratories for the Improvement of STEM Teaching and Learning. Best-Practices and Innovations in CTE Conference (San Diego, CA, September 2013)

Additional Research Employment/Experience

Engineers Without Borders: Rwanda Student Chapter (2008 – 2009)

- Photovoltaic design and implementation
- Biomass fuel development and implementation – Project Lead, University of Colorado

United States Geological Survey *Laboratory Technician* (2007 - 2009)

Renewable Funding llc. *Loan Originator* (2008 - 2009)

- Renewable Energy Project Financing

United Recyclers Group *Life Cycle Analysis Consultant* (2008 - 2009)

- Used Automotive Parts Environmental Impact & Life Cycle Analysis

Curtiss Engineering *Research Assistant* (2006 – 2007)

- California Electricity Life Cycle Analysis
- Electric Vehicle Grid Loading Environmental Impact & Cost benefit analysis

Awards/Grants/Certifications:

2015 Edson Innovator Grant Winner

2014 AZ Furnace Accelerator Competition Winner

2013 NSF GK12 Sustainability Science for Sustainable Schools Fellowship recipient

2012 NSF GK12 Sustainability Science for Sustainable Schools Fellowship recipient

2009 Fundamentals of Engineering Exam Certification

2008-2009 NASA Reduced Gravity Education Flight Program Design competition winner

2008 Undergraduate Research Opportunities Program (UROP) Grant for Sustainable Water Management Technologies for a Lunar Outpost Study

2008 Hazardous Waste Operations & Emergency Response (HAZWOPER) certified

2008 Merit Scholarship

2008 UROP Grant for installation of photovoltaic system and hydroelectric power generation pilot study

Languages:

Computer: R, netlogo, matlab, VBA, Python

Human: Spanish (intermediate), French (intermediate), Arabic (beginner)