

SUSAN J. CHENG

Center for Research on Learning & Teaching • Department of Ecology and Evolutionary Biology
University of Michigan • 1150 Palmer Commons • Ann Arbor, MI 48109

EDUCATION

- 2016 **University of Michigan**, Ann Arbor, MI
Ph.D. in Ecology & Evolutionary Biology
Graduate Teacher Certificate, Center for Research on Learning & Teaching
- Dissertation: “*Shedding light on photosynthesis: The impacts of atmospheric conditions and plant canopy structure on ecosystem carbon uptake*”
 - Advisors: Dr. Knute J. Nadelhoffer and Dr. Allison L. Steiner
- 2013 **University of Michigan**, Ann Arbor, MI
M.S. in Ecology & Evolutionary Biology
- 2007 **Columbia University, Columbia College**, New York, NY
B.A. in Environmental Science
National Oceanic & Atmospheric Administration Ernest F. Hollings Scholar

PROFESSIONAL APPOINTMENTS

- 2019-Present **Data Analytics and Assessment Consultant**
University of Michigan Center for Research on Learning & Teaching, Ann Arbor MI
- 2019-Present **Affiliate**
University of Michigan Department of Ecology and Evolutionary Biology, Ann Arbor MI
- 2016-2019 **Postdoctoral Associate**
Cornell University, Department of Biological and Environmental Engineering, Ithaca, NY
Cornell University, Department of Ecology and Evolutionary Biology, Ithaca, NY
- 2010-2016 **Doctoral Researcher**
University of Michigan, Department of Ecology and Evolutionary Biology, Ann Arbor, MI
- 2009-2010 **Extension Educator and Urban Environment Program Area Assistant**
Cornell University Cooperative Extension – NYC, New York, NY
- 2007-2008 **Staff Scientist I, II**
Langan Engineering & Environmental Services, New York, NY

FELLOWSHIPS & AWARDS

- 2018 Cornell University Postdoc Achievement Award for Excellence in Leadership (nominated by graduate students)
- 2017 Honorable Mention, University of Michigan Outstanding Dissertation Award
- 2016 Department Nominee, University of Michigan Outstanding Graduate Student Instructor Award
- 2016 University of Michigan Rackham Graduate School One Term Dissertation Fellowship
- 2014-2015 Helen Olson Brower Fellowship in Environmental Studies,
University of Michigan Department of Ecology and Evolutionary Biology (2 semesters)
- 2012-2014 University of Michigan Graham Sustainability Institute Fellowship (4 semesters)
- 2013 Audience Choice & 2nd place winner, University of Michigan 3 Minute Thesis Competition (\$500)

PUBLICATIONS

Peer-reviewed Publications (* denotes undergraduate author)

- 2021 McCullagh EA, Bernardi F, Malta M, Nowak K, Marklein AR, Van Horne K, Clark TL, **Cheng SJ**, Zaringhalam M, Edwards LL. "Assessing gage: an online tool for improving gender visibility in STEMM." *FACETS*, 6: 1601-1609. doi: 10.1139/facets-2021-0033
- 2021 **Cheng SJ**, Mourad T, Goldberg DE, Middendorf G., Prevost LB, McKay TA. "Harnessing data for inclusive ecology education: Perspectives on building programs to move the discipline toward systemic change." *The Bulletin of the Ecological Society of America*, 102(2), e01842. doi: 10.1002/bes2.1842
- 2021 Graham EB, Averill C, Bond-Lamberty B, Knelman JE, Krause S, Peralta AL, Shade A, Smith AP, **Cheng SJ**, Fanin N, Freund C, Garcia PE, Gibbons SM, Van Goethem MW, Ben Guebila M, Kemppinen J, Nowicki R, Pausas JG, Reed S, Rocca J, Sengupta A, Sihi D, Simonin M, Slowinski M, Spawn S, Sutherland I, Tonkin J, Wisnoski N, Zipper SC, Contributor Consortium. "Towards a unifying framework of disturbance ecology through crowdsourced science." *Frontiers in Ecology and Evolution*, 9:588940. doi: 10.3389/fevo.2021.588940
- 2019 Duffy MA, Hammond JW, **Cheng SJ**. "Preaching to the choir or composing new verses? Toward a writerly climate literacy in introductory undergraduate biology." *Ecology and Evolution*, 9: 12360-12373. doi: 10.1002/ece3.5736
- 2019 Zhu P*, **Cheng SJ**, Butterfield Z, Keppel-Aleks G, Steiner AL. "The global influence of cloud optical thickness on terrestrial carbon uptake." *Earth Interactions*, 23(6): 1-22. doi: 10.1175/EI-D-17-0035.1
- 2019 **Cheng SJ**, Hess P, Wieder WR, Thomas RQ, Nadelhoffer KJ, Vira J, Lombardozzi DL, Gundersen P, Fernandez IJ, Schleppei P, Gruselle MC, Moldan F, Goodale CL. "Decadal impacts of nitrogen additions on temperate forest carbon sinks: A data-model comparison." *Biogeosciences*, 16: 2771-2793. doi: 10.5194/bg-16-2771-2019
- 2019 Wieder WR, Lawrence DM, Fisher RA, Bonan GB, **Cheng SJ**, Goodale CL, Koven CD, Lombardozzi DL, Oleson KW, Thomas RQ. "Beyond static benchmarking: Using experimental manipulations to evaluate land model assumptions." *Global Biogeochemical Cycles*, 33: 1289-1309. doi: 10.1029/2018GB006141
- 2018 Lombardozzi D, Smith NG, **Cheng SJ**, Dukes JS, Sharkey TD, Rogers A, Fisher RA, Bonan G. "Triose phosphate limitation in photosynthesis models reduces leaf photosynthesis and global terrestrial carbon storage." *Environmental Research Letters*, 13: 074025. doi: 10.1088/1748-9326/aac6f8
- 2016 **Cheng SJ**, Steiner AL, Hollinger DY, Bohrer G, Nadelhoffer KJ. "Using satellite-derived optical thickness to assess the influence of clouds on terrestrial carbon uptake." *Journal of Geophysical Research: Biogeosciences*, 121: 1747-1761. doi: 10.1002/2016JG003365
- 2015 Bryan AM, **Cheng SJ**, Ashworth K, Guenther AB, Hardiman BS, Bohrer G, Steiner AL. "Forest-atmosphere BVOC exchange in diverse and structurally complex canopies: 1-D modeling of a mid-successional forest in northern Michigan." *Atmospheric Environment*, 120: 217-226. doi: 10.1016/j.atmosenv.2015.08.094
- 2015 **Cheng SJ**, Bohrer G, Steiner AL, Hollinger DY, Suyker A, Phillips RP, Nadelhoffer KJ. "Variations in the influence of diffuse light on gross primary productivity in temperate ecosystems." *Agricultural & Forest Meteorology*, 201: 98-110. doi: 10.1016/j.agrformet.2014.11.002
- 2013 Steiner AL, Mermelstein D*, **Cheng SJ**, Twine TE, Oliphant A. "Observed impact of atmospheric aerosols on the surface energy budget." *Earth Interactions*, 17: 1-22. doi: 10.1175/2013EI000523.1

Manuscripts in advanced stages (draft available upon request)

- in press* Bennett H, **Cheng SJ**, Kessenich P, Lande E, LaRose P.G. "Increasing inclusion in large enrollment, uniform math courses: Instructor training and course assessment." *Mathematical Association of America Notes*.
- in revision* Kyker-Snowman E, Lombardozzi DL, Bonan GB, **Cheng SJ**, Dukes JS, Frey SD, Jacobs EM, Rady JM, Smith NG, Thomas RQ, Wieder, WW, Grandy AS. "Increasing the spatial and temporal impact of ecological research: A roadmap for integrating a novel terrestrial process into an Earth system model." *Global Change Biology*.
- submitted* Nguyen KH, Akiona A, Chang C, Chaudhary VB, **Cheng SJ**, Johnson S, Kahanamoku SS, Lee A, de Leon Sanchez EE, Segui LM, Tanner RL. "Who are we? Highlighting nuances in Asian American experiences in ecology and evolutionary biology." *Bulletin of the Ecological Society of America*.

Public Writing

- 2021 **Cheng SJ**, Zaringhalam M, Carvalho APS, Barnes RT, Goldman G, Simonis JL, Creary M., Bodison SC, Bohon W, Chakraborty P, Edwards L, Leath S, Marklein AR, Williams NA, Ramirez KS, Zelikova J, Caballero-Gill RP, Guatame-Garcia A, Sanchez-Rios A, Porras AM. "A call to action for more socially just publishing." *Inside Higher Ed*. Sep 9. <<https://www.insidehighered.com/advice/2021/09/09/call-action-more-socially-just-publishing-opinion>>
- 2021 500 Women Scientists, Wagner K, McCullagh E, Dapkey T, Qaiser F, Williams N, **Cheng SJ**. "Academic institutions must do better to protect caregivers this fall." *Scientific American*. Aug 18. <<https://www.scientificamerican.com/article/academic-institutions-must-do-better-to-protect-caregivers-this-fall/>>
- 2020 Levy C, **Cheng SJ**, Bear Don't Walk R, Zelikova J. "Our only home: Mapping a more socially just Earth Day." *BitchMedia*. Jun 11. <<https://www.bitchmedia.org/article/mapping-the-sustainable-future-earth-day>>
- 2019 Ramirez KS, **Cheng SJ**, Carvalho APS. "Move science forward: Join the conversation on diversity and inclusion." *Relational Thinking*, the blog for *People and Nature* (journal published by the British Ecological Society). Mar 8. <<https://relationalthinkingblog.com/2019/03/08/move-science-forward-join-the-conversation-on-diversity-and-inclusion/>>
- 2019 500 Women Scientists, Lipps J, Zelikova J, Goldman G, Bradley-Cook J, **Cheng SJ**, Johnson C. "The Green New Deal is a vision for inclusive climate change solutions." *Scientific American*. Feb 25. <<https://blogs.scientificamerican.com/observations/scientists-must-speak-up-for-the-green-new-deal/>>
- 2018 **Cheng SJ**, Smith NG, Marklein AR. "Modeling global change ecology in a high-carbon dioxide world." *Eos*, 99. doi: 10.1029/2018EO094731.
- 2017 **Cheng SJ**. "How I'm standing up for science." *Science* 355 (6327), 878. doi: 10.1126/science.355.6327.878. (Cited in *Slate* and the *Canadian Journal of Physics*.)

GRANTS (\$35,106 awarded to date)

- 2020 Diversity, Democracy and Structural Racism Grant, University of Michigan Office of Diversity, Equity, & Inclusion (co-author, \$4,000)
- 2016 Faculty Communities for Inclusive Teaching Grant, University of Michigan Center for Research on Learning and Teaching (\$1,000)
- 2013-2014 Marian and David Gates Graduate Fund, University of Michigan Biological Station (\$4,217)
- 2013 Graduate Student Grant, Michigan Space Grant Consortium (\$5,000)
- 2013 Ecology and Evolutionary Biology Department Block Grant, University of Michigan (\$677)
- 2012 Stable Isotope Biogeochemistry/Ecology Course Scholarship, University of Utah (\$3,500)
- 2012 Rackham Graduate Student Research Grant, University of Michigan (\$1,500)
- 2012 Ecology and Evolutionary Biology Department Block Grant, University of Michigan (\$518)
- 2012 Dr. Ralph E. Bennett Endowment Fund, University of Michigan Biological Station (\$3,472)
- 2011 Spring/Summer Research Grant, University of Michigan (\$6,000)
- 2011 Ecology and Evolutionary Biology Department Block Grant, University of Michigan (\$1,984)
- 2011 Henry A. Gleason Fellowship, University of Michigan Biological Station (\$3,238)

INVITED TALKS

- 2021 "Growing connections: Using equity frameworks and inclusive teaching to support biology students." Genetics Society of America's Bridging Research and Education Workshop (BREW), 7 June, virtually held.
- 2021 "Promoting equity in STEM education across scales." Biology Department Seminar Series. Virginia Commonwealth University, 12 April, virtually held.
- 2020 "Learning from classroom data: Critical frameworks for advancing equity, inclusion, and social justice in science education." Ecological Society of America Annual Meeting, 4 August, virtually held.
- 2020 "'Equity' and 'inclusion' revisited". Sloan Equity and Inclusion in STEM Introductory Courses (SEISMIC) Summer Meeting Part 1, 19 June, virtually held.

- 2018 “Evaluating impacts of short and long-term fates of nitrogen additions on modeled forest carbon pools.” American Geophysical Union Fall Meeting, 12 December, Washington, D.C.
- 2018 “Seeing carbon cycling in a new light: Exploring the impacts of plants on Earth’s climate.” Vassar College, 12 November, Poughkeepsie, NY.
- 2018 “Impacts of atmospheric change on forest carbon and nitrogen cycling.” Joint Global Change Research Institute, 23 January, College Park, MD.
- 2017 “Modeling the N cycle: Patterns and surprises in Earth system modeling.” Biogeochemistry and Environmental Sciences and Sustainability Seminar Series, Cornell University, 13 October, Ithaca, NY.
- 2017 “Shedding light on photosynthesis: Interactive impacts of clouds and plants on climate.” St. Mary’s College of Maryland, 7 April, St. Mary’s City, MD.

CONFERENCE PRESENTATIONS AND POSTERS (1st author is presenter unless noted with *; undergrad)

- 2021 Hammond JW*, Brownell SE, Byrd CW, **Cheng SJ***, Kedharnath NA, McKay TA. “Transforming (inter)institutional STEM infrastructures: Lessons from the SEISMIC project on designing for equity and inclusion at scale.” Transforming Institutions 2021 Virtual Conference.
- 2019 Goodale CL, **Cheng SJ**, Martinez CE. “Decadal redistribution of a ¹⁵N tracer in a mixed deciduous forest.” European Geophysical Union General Assembly, Vienna, Austria.
- 2019 Steiner AL, **Cheng SJ**, Wozniak M. “Whither diffuse? Synthesizing the influence of diffuse light on the biosphere.” American Meteorological Society Annual Meeting, 6-10 January, Phoenix, AZ.
- 2018 **Cheng SJ**, Hammond JW, Duffy MA. “Climate literacy on the move: Understanding shifts in student perceptions of the causes, impacts, and solutions to climate change.” American Geophysical Union Fall Meeting, 10-14 December, Washington, D.C.
- 2017 Lombardozi D, Smith NG, **Cheng SJ**, Bonan GB, Dukes JS, Fisher R, Sharkey TD, Rogers A. “The impact of including export limitation in photosynthetic models from leaf to global scales.” American Geophysical Union Fall Meeting, 11-15 December, New Orleans, LA.
- 2017 **Cheng SJ**, Lombardozi D, Hess P, Goodale CL. “Foliar uptake of nitrogen deposition: Impacts on Earth system model estimates of terrestrial carbon cycling.” Ecological Society of America Annual Meeting, 6-11 August, Portland, OR.
- 2017 Thomas RQ, **Cheng SJ**, Smith NG, Wieder WR. “Evaluating the present and future of ecology in Earth system models.” Ecological Society of America Annual Meeting, 6-11 August, Portland, OR.
- 2017 **Cheng SJ** and Hammond JW. “What motivates student engagement in specialized science classes? A case study with an undergraduate environmental biology course.” Teaching as Research National Conference, 6 June, Ithaca, NY.
- 2016 **Cheng SJ**, Zhu P*, Keppel-Aleks G, Butterfield Z, Steiner AL. “The global influence of cloud optical thickness on terrestrial carbon uptake.” American Geophysical Union Fall Meeting, 12-16 December, San Francisco, CA.
- 2015 **Cheng SJ**, Thomas RQ, Wilkering JV, Curtis PS, Sharkey TD, Nadelhoffer KJ. “Testing Earth system model assumptions of photosynthetic parameters with *in situ* leaf measurements from a temperate zone forest.” American Geophysical Union Fall Meeting, 14-18 December, San Francisco, CA.
- 2014 **Cheng SJ**, Steiner AL, Nadelhoffer, KJ. “Influence of cloud optical thickness on surface diffuse light and carbon uptake in forests and croplands.” American Geophysical Union Fall Meeting, 15-19 December, San Francisco, CA.
- 2014 Gough CM, **Cheng SJ**, Hardiman BS, Curtis PS, Bohrer G, Vogel CS, Nadelhoffer KJ, Morin T. “Ecological and environmental controls over fifteen-year forest net ecosystem production at the University of Michigan Biological Station.” American Geophysical Union Fall Meeting, 15-19 December, San Francisco, CA.
- 2010 Moskell C, Broussard-Allred S, Loria K, Lambert V, Brooks L, **Cheng S**, Ferenz G, Kudryavtsev A. “Residents’ attitudes toward street trees and trees in parks in New York City.” North American Association for Environmental Education Meeting, September 28-October 2, Buffalo-Niagara, NY.

PROFESSIONAL SERVICE

- 2021-Present Springer Nature US Research Advisory Council Member
- 2021-Present 500 Women Scientists Advisory Board Co-chair
- 2020-Present Constructs Working Group Co-chair for the Sloan Equity and Inclusion in STEM Introductory Courses (SEISMIC) project
- 2019-Present American Geophysical Union Education Section Leadership Committee Member
- 2016-Present Invited Journal Reviewer, including for *Agricultural & Forest Meteorology*, *Biogeosciences*, *Ecology and Evolution*, *Journal of Geophysical Research: Atmospheres*, *Journal of Geophysical Research: Biogeosciences*, *Trends in Ecology & Evolution*
- 2018-2020 500 Women Scientists Director of the Fellowship for the Future
- 2017-2018 Earth Science Women's Network "Science-A-Thon" Media Team Member
- 2015-2019 American Geophysical Union Publications Committee Member
- 2017 Ecological Society of America "Strategies for Education in Ecology, Diversity and Sustainability" Meeting Mentor
- 2017 Session Chair/Moderator, Ecological Society of America Annual Meeting for the session on "Ecology in a 400+ ppm CO₂ World: Which Processes Should Rise to the Forefront of Global Change Science?" Portland, OR, August 6-11

DEPARTMENT AND UNIVERSITY SERVICE

- 2017-2019 **Graduate School Diversity Advisory Council Member**
Cornell University
- 2012-2014 **First Year Graduate Student Mentoring Program Coordinator & Mentor**
Department of Ecology & Evolutionary Biology, University of Michigan
- 2013-2014 **Co-Editor-in-Chief & Reviewer**
- 2012-2013 **Founding Editorial Board Member & Reviewer**
Michigan Journal of Sustainability, Graham Sustainability Institute
- 2011-2013 **Undergraduate Affairs and Curriculum Committee Graduate Student Member**
Department of Ecology and Evolutionary Biology, University of Michigan
- 2016 **Diversity Reading Group Co-organizer**
Department of Ecology and Evolutionary Biology, University of Michigan
- 2015 **Panel Member**
University of Michigan Diversity Programs
- 2013 **National Science Foundation "Research Experience for Undergraduates" Co-advisor**
University of Michigan Biological Station
- 2011 **BioKIDS Mentor**
University of Michigan BioKIDS Program

PROFESSIONAL DEVELOPMENT & TRAINING

- 2018-2019 Cornell NextGen Professors Program
- 2016 University of Colorado Mountain Research Station Fluxcourse
- 2015 Michigan State Kellogg Biological Station "Enhancing Linkages between Mathematics & Ecology" course on Maximum Likelihood Analysis in Ecology
- 2014 National Center for Atmospheric Research Tutorial on the Community Land Model
- 2013 Association of Ecosystem Research Centers Annual Workshop on communicating science to media and decision-makers, co-hosted by the American Institute of Biological Sciences
- 2012 University of Utah Stable Isotope Biogeochemistry & Ecology Course (scholarship awarded)

FORMAL PEDAGOGICAL TRAINING

- 2018 **Cornell University Inclusive Teaching Institute**

Two-day workshop on developing personal strategies for incorporating inclusive teaching practices and philosophies into classrooms.

2016-2017

Cornell University Program for Scholarship of Teaching & Learning

Year-long fellowship with workshops on mixed-methods education research. Implemented a project examining student engagement with upper-level ecology course content.

2010-2016

University of Michigan Center for Research on Learning and Teaching Graduate Teacher Certificate Program

Professional development program with workshops in active learning strategies, inclusive teaching, and syllabus development.