

Jenny Marie Dauer

School of Natural Resources

University of Nebraska-Lincoln

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Professional Experience:

School of Natural Resources Associate Director for Undergraduate Education & Associate Professor in Science Literacy (25% administration, 35% teaching, 40% research)	2019- present
Assistant Professor in Science Literacy (60% teaching, 40% research) School of Natural Resources, University of Nebraska, Lincoln	2016- 2019
Assistant Professor of Practice in Science Literacy (75% teaching, 25% research) School of Natural Resources, University of Nebraska, Lincoln	2013- 2016
Discipline-Based Education Research Post-doc/ Carbon TIME Project Director Michigan State University Mentor: Dr. C.W. (Andy) Anderson, Department of Teacher Education	2011 - 2013
Assistant Director of Graduate Education The Franklin Institute Science Museum, Program Associate	2005 - 2006 2001 - 2002

Education:

Ph.D. in Ecosystem Ecology Oregon State University, Department of Forest Science Dissertation title: Calcium oxalate in sites of contrasting nutrient status in the Oregon Coast Range. Advisor: Dr. Steven Perakis, USGS	2006 - 2012
Masters in Ecology Penn State University Thesis title: Reasons for differential leaf calcium accumulation in forest trees. Advisor: Dr. David Eissenstat, Department of Horticulture	2002 - 2005
Bachelor of Science with Honors in Secondary Education PA Teacher Certification in Biology, Environmental Science, General Science Penn State University, The Schreyer Honors College Thesis title: Curriculum integration in the home school; possibilities for meaningful learning. Advisor: Dr. J. Daniel Marshall, Curriculum and Instruction Department	1995 - 2000

Grants:

Funded:

1. PI, NSF HER CORE BCSEER, *Bridging science education and psychology perspectives to support science literacy theory and instruction*, \$349,836
2. NSF RCN: *INFEWS/T3 Cultivating a National Collaborative for Research on Food, Energy and Water Education (NC-FEW)*. \$749,964
3. Co-PI, USDA-NIFA REEU, 2018: *Building Undergraduate Research and Science Communication Skills Through Beneficial Insects Protection Research and Extension Experiences (FACT)*, 1/2019-12/2022, \$362,150
4. PI, NSF IUSE, 2017: *"Decision-making about socioscientific issues in multidisciplinary postsecondary*

learning environments" Funded 9/2017 - 8/2020, \$299,969

5. Co-PI, University of Nebraska Collaboration Initiative Seed Grant: *Developing a MOOCocracy Prototype to Increase Public Understanding of Food Insecurity*, Funded 7/2017 - 6/2019, \$149,693
6. Co-PI, USDA-NIFA, 2016: *Excellence in Education for Food, Energy and Water (E²FEW)*. Funded 1/2017 - 12/2019, \$150,000
7. Co-PI, Nebraska Environmental Trust: *Working with rural post-secondary student to document swift fox on Nebraska Ranches*. Funded 6/2015 - 6/2018, \$210,757
8. Senior Personnel/Consultant, EPA Environmental Education: *Classrooms Take Charge*. Funded 11/2016 - 8/2018, \$121,675
9. Senior Personnel/Consultant, EPA Environmental Education: *Classrooms Take Charge*. Funded 7/2014 - 6/2016, \$334,536
10. IANR Faculty Travel Award, 2015 (\$500), 2016 (\$1000), 2018 (\$800)
11. Faculty Mentor, UCARE for Olivia Straka, 2015-2016 (\$2,400)
12. Faculty Mentor, UCARE for Jena Wilson, 2017-2018 (\$2,400)

Pending and in progress:

Co-PI, NSF REU, 2019: *Community Based Participatory Research*

Declined grants (last 5 years):

1. PI, NSF-CAREER, 2018: *Students' decision-making practices: supporting the use of evidence in community deliberation*
2. Co-PI, USDA-AFRI, SAS, 2018, *Optimizing water and nutrient management with climate resilience for sustainable agricultural intensification*, Letter of Intent.
3. Co-PI, Agronomy and Horticulture Department, UNL, Teaching Enhancement Funding, 2018, *Using games to teach and assess systems thinking in agronomy*.
4. Co-PI, USDA-NIFA REEU, 2017: *Streaming Science Electronic Field Trip Production for Engaging Undergraduates in Extension Entomology PK-12 Education and Outreach*, \$300,000
5. Co-PI, NSF IUSE/PFE:RED, 2017: *Civil Engineering Education for the Future - Breaking Barriers to Address Big Problems (CEE the Future)* \$1,999,406
6. Co-PI, Rural Futures Institute, 2017: *Community Engagement for Sustainable Communities: Food System Decision-Making* \$19,998
7. Co-PI, NSF IUSE, 2016: *Excellence in Education for Food, Energy and Water (E²FEW)*
8. PI, Academic Affairs - Grants for Scholarship of Teaching and Learning, 2016: "Science literacy through decision-making about complex socioscientific issues."
9. Co-PI, Academic Affairs - Grants for Scholarship of Teaching and Learning, 2016: "Shifting science communication courses to a project-based solutions-focused instructional design approach."
10. PI, NSF IUSE, 2016: *Making Decisions about Socioscientific Issues in Multidisciplinary Postsecondary Learning Environments*
11. Co-PI, NSF REU, 2014: *Immersion into the STEM Education Research Community*
12. Co-PI, USDA NIFA, 2014: *Building Resilient Organic Agroecosystems through Cover Crops and Science Literacy*
13. Co-PI, NE Teacher Quality, 2013: *Agroecosystems as Tools for Teaching*
14. Co-PI, NSF CORE, 2013: *Developing a Learning Progression for Learning From Scientific Evidence*

Publications:

1. Sommers, A., White, H., Alred, A., Dauer, J.M., Forbes, C. Instruction and learning in undergraduate food, energy, and water systems (FEWS) courses. (In Press: *Journal of National Colleges and Teachers of Agriculture*)

2. Alred A., Dauer J.M. Understanding factors related to undergraduate student decision-making about a complex socio-scientific issue: mountain lion management. (In Press: *Eurasia Journal of Mathematics, Science and Technology Education*)
3. Goralnik L., Dauer J.M., Lettero C., (2019) Communities Take Charge: Climate Learning and Changemaking in the Science Classroom. *The Science Teacher*, 87(1) 54-59.
4. Alred A., Hartley L.M., Doherty J.H., Harris C., Dauer J.M. (2019) Exploring student ideas about biological variation. *International Journal of Science Education*, 41(12), 1682-1700.
<https://doi.org/10.1080/09500693.2019.1635289>
5. Sutter A.M., Dauer J.M., Forbes C., Kreuziger T., Schubert J. (2019) Sixth grade students' problematization of and decision-making about a wind energy socioscientific issue. *International Research in Geographical and Environmental Education*, 1-15.
<https://doi.org/10.1080/10382046.2019.1613586>
6. VanWormer, E., Mlawa, J., Komba, E., Gustafson, C., Mrema, H., Dauer, J.M. (2018) Using art and story to explore how primary school students in rural Tanzania understand planetary health: a qualitative analysis. *Lancet: Planetary Health*, Vol 2, Special Issue, S18.
7. Sutter A.M., Dauer J.M., Forbes C. (2018) Application of construal level and value-belief-norm theories to undergraduate decision-making on a wildlife socio-scientific issue. *International Journal of Science Education*. 40, 1058-1075. DOI: 10.1080/09500693.2018.1467064
8. Sorensen, A.E., Corral, L., Dauer, J. M., Fontaine, J.J. (2018) Integrating authentic scientific research in a conservation course-based undergraduate research experience. *Natural Sciences Education*. 47(1), 1-10. doi:10.4195/nse2018.02.0004
9. Lynch L.I., Dauer J.M., Babchuck W.A., Heng-Moss T., Golick D. (2018) In Their Own Words: The Significance of Participant Perceptions in Assessing Entomology Citizen Science Learning Outcomes Using a Mixed Methods Approach. *Insects* 9(1), 16:1-15.
10. Golick D., Dauer J.M.*, Lynch L., Ingram E (2017) A framework for pollination systems thinking and conservation. *Environmental Education Research*. *joint first-authorship with Golick. DOI:10.1080/13504622.2017.1349878
11. Sabel J.L., Vo T., Alred A., Dauer J.M., Forbes C.T. (2017) Undergraduate students' scientifically-informed decision-making about socio-hydrological issues. *Journal of College Science Teaching*, 46(6), 64-72.
12. Covitt B.A., Dauer J.M., Anderson C.W. (2017) The Role of Practices in Scientific Literacy. In Schwarz, C., Passmore, C., & Reiser, B. (Eds.) *Helping Students Make Sense of the World Using Next Generation Science and Engineering Practices*. The National Science Teachers Association (NSTA) Press: Arlington, VA.
13. Dauer J.M., Lute M.L., Straka O. (2017) Indicators of informal and formal decision-making about a socioscientific issue. *International Journal of Education in Mathematics, Science and Technology*. 5(2), 124-138. DOI:10.18404/ijemst.05787
14. Dauer J.M. and Forbes C. (2016) Making decisions about complex socioscientific issues: a multidisciplinary science course. *Science Education and Civic Engagement: An International Journal*, 8:5-12.
15. Dauer J.T. and Dauer J.M. (2016) A framework for understanding the characteristics of complexity in biology. *International Journal of STEM Education*. 3:13
16. Dauer J.M., Doherty J.H., Freed A.L., Anderson C.W. (2014) Connections between student explanations and arguments from evidence about plant growth. *CBE-Life Science Education*, 13:397-409.
17. Dauer J.M., Miller H., & Anderson C.W. (2014). Conservation of energy: An analytical tool for student accounts of carbon-transforming processes. In R. Chen, A. Eisenkraft, D. Fortus, J. Krajcik, K. Neumann & A. Scheff (Eds.), *Teaching and Learning of Energy in K-12 Education*. New York: Springer.

18. Dauer J.M., Perakis S.S. (2014) Calcium oxalate contribution to calcium cycling in forests of contrasting nutrient status. *Forest Ecology and Management*, 334:64-73.
19. Dauer J.M., and Perakis S. (2013) Contribution of calcium oxalate to soil exchangeable calcium. *Soil Science*, 178:671-678.
20. Dauer J.M., Lettero C., Ocana M., (2011). A review of ethical concepts and moral reasoning integration into climate change curriculum. *Journal for Activism in Science & Technology Education* 3:131-175.
21. Dauer J.M., Withington J.M, Oleksyn J., Chorover J., Chadwick O.A., Reich P.B., Eissenstat D.M., (2009). A scanner-based approach to soil profile-wall mapping of root distribution. *Dendrobiology* 62:35-40
22. Dauer J.M., Chorover J., Chadwick O.A., Oleksyn J, Tjoelker M.G., Hobbie S.E., Reich P.B., Eissenstat D.M., (2007). Controls over leaf and litter calcium concentrations among temperate trees. *Biogeochemistry* 86: 175-187.
23. Johnathan Thompson & Jenny Edwards*, (2008). A landslide is a landslide is a landslide... or is it? Defining landslide potential across large landscapes. *Science Findings*, Issue 101, Pacific Northwest Research Station. *unmarried name
24. Butler, J. & McCreedy, D. (2007) *Science is everywhere: A resource guide*. Parent Partners In School Science. The Franklin Institute Science Museum. (contributor)

Publications in preparation or review, manuscripts available:

- Sorensen A.E., Alred A, Fontaine J.J., Dauer J.M. "Integrating Modeling in a Course Based Undergraduate Research Experience." (In review: *CBE Life Sciences*).
- Sorensen, A.E., Brown, B., Alred, A., Fontaine J.J., Dauer J.M. Students' discipline-specific NOS understanding and application of knowledge to a conservation biology issue in a CURE context. (In review: *International Journal of Science Education*)
- Dauer J.M., Sorensen A., Jimenez, J.C. Using a structured decision-making tool in the classroom to promote information literacy in the context of decision-making (In review: *College Teaching*).
- Sorensen A., Wilson J., Dauer J.M. (in preparation) Influence of socioscientific issues instruction on student civic engagement agency and attitudes.
- Romine, W., Dauer J.M., Sadler, T., (in preparation) Measurement of socio-scientific reasoning (SSR) and exploration of how students' SSR competencies improve over time.
- Lynch L., Babchuck W., Dauer J.M., Heng-Moss T., Golick D. (in preparation) Transference of citizen science program impacts: A theory grounded in public participation in scientific research.
- Bullen T, Dauer J.M., and Perakis S. (in preparation) Role of calcium oxalate in controlling Ca/Sr discrimination and $^{44}\text{Ca}/^{40}\text{Ca}$ fractionation in terrestrial ecosystems.
- Dauer JT., Alred A., Dauer J.M., Niosco N., (in preparation) Recognition of surface and deep features of a food web by undergraduates in introductory biology.
- Dauer J.M., Doherty J., Anderson C.W. (in preparation) Tracing matter and energy at ecosystem scales.

Presentations:

Invited presentations:

1. Dauer, J.M. "A framework for decision-making in a science classroom to promote science literacy" STEM Education Speaker Series, University North Carolina, Greensboro, NC, March, 2019.
2. Dauer, J.M. "Teaching decision-making in the science classroom to promote science literacy" Science Literacy Program at University of Oregon, Eugene, OR, February 2019.
3. Dauer, J.M. "(Science Literacy 101) Science and decision-making for a complex world: a classroom model to promote students' science literacy" IANR All Hands Meeting, January 2019.

4. Dauer, J.M. "A framework for decision-making in a science classroom to promote science literacy" Biological Sciences departmental seminar, Northern Illinois University, DeKalb, IL, Nov 8, 2018.
5. Dauer, J.M. "How to optimize decision making for personal and professional lives" Presentation for the UNL Doctorate of Plant Health program, Nov 1, 2018.
6. Environrun Sustainability Speaker Series, panelist for discussion on local community policy, advocacy, environmental literacy and engagement. Lincoln, NE, October 2018.
7. Dauer, J.M. "A framework for decision-making in a science classroom to promote science literacy" Departmental seminar for the School of Molecular Biosciences, Washington State University, Pullman, WA, April 26, 2018.
8. Dauer, J. M. "How to optimize decision making for personal and professional lives" Presentation for the UNL Applied Plant Sciences Experiential Learning Program, June 16, 2017 and July 27, 2018.
9. Dauer, J. M. "Definitions of science literacy and finding models for change" Presentation for the Agronomy & Horticulture Graduate Student Association and Scientific Communication and its Impacts on Policy, Literacy and Education (SCImPLE) Group, January 26, 2017.
10. Dauer, J. M. "Teaching and research in SCIL 101: Science and decision-making for a complex world." DBER seminar at UNL, Oct 6, 2016, Lincoln, NE
11. Dauer, J. M. "Teaching and research in SCIL 101: Science and decision-making for a complex world." Agronomy & Horticulture Seminar Series, Oct 14, 2016, Lincoln, NE.
12. Golick, D and Dauer, J. "Brain Buzz: A framework for exploring pollination systems knowledge of undergraduates." DBER meeting group at UNL, Nov 17, 2016, Lincoln, NE.
13. Dauer, J. "Science Literacy and Decision-making." Re-STEM Institute, University of Missouri, October, 2016.
14. Dauer, J. "Investigating students' ecosystem knowledge and science literacy practices." Ecology and Evolutionary Biology Departmental Seminar, C.U. Boulder, February 2016
15. Dauer, J., Doherty, J., Anderson C.W. "Student learning about tracing matter and energy in ecosystems" Ecology Society of America, Baltimore, MD August 2015.
16. Dauer, J. "Transformations in matter and energy: student learning and inquiry to inform teaching" DBER seminar at UNL, September 5th, 2013, Lincoln, NE.
17. Dauer, J. & Anderson C.W. "Developing a framework for inquiry and argumentation about carbon-transforming process" National Association for Research in Science Teaching (NARST), Puerto Rico, April 2013.
18. Dauer, J. & Anderson C.W. "An inquiry learning progression for carbon-transforming processes" Create 4 STEM seminar series, Michigan State University, March 2013, Lansing, MI.
19. Dauer, J. "Calcium: location, movement and chemical forms in forest ecosystems." Summer Institute, K-12 Science Teacher Workshop, Kellogg Biological Station, June 2012.
20. D'Avanzo, C., Doherty, J., Dauer, J., Hartley, L., Momsen, J. "Whole Course Transformation for Introductory Biology." Introductory Biology Program Conference, Washington, D.C., July 2012.
21. Dauer, J. "Differential leaf calcium accumulation in forest trees" University of Penn, Philadelphia PA, Sept 2004.
22. Dauer, J. "Calcium uptake in forest trees." Penn State Scranton-Worthington Campus, Scranton, PA, April 2005.

Presentations (2012 to present):

1. Jimenez, P.C., Dauer, J.M. "Decision-making about socioscientific issues in a large post-secondary STEM course: Describing students use of evidence." European Science Education Research Association, Bologna, Italy, September 2019.
2. Lynch, Babchuk, Dauer, Heng-Moss, Golick. Transference of Citizen Science Impacts. Entomological Society of America North Central Branch Meeting, 2019.

3. Jimenez, Golick, Couch and Dauer. Developing and Evaluating a Pollination Knowledge Assessment Instrument (PKAI) in a Multidisciplinary Undergraduate Course, Ecology Society of America, Louisville KY, 2019.
4. AE Sorensen, J Brown, A Alred, JJ Fontaine, JM Dauer. 2019. "How do students integrate social and ecological knowledge in a socio-ecological systems class?" Ecological Society of America, Louisville, KY.
5. Jimenez, P.C., Alred, A., Meyer, B., Dauer, J.M. "Quality decision-making about socioscientific issues: Developing frameworks describing students' use of evidence" American Education Research Association, Toronto, CA, April 2019.
6. Dauer, J.M, Wilson, J., Amanda S. "Civic engagement in an undergraduate science literacy course focused on socioscientific issues and decision-making" American Education Research Association, Toronto, CA, April 2019.
7. P.C. Jimenez, A. Alred, B. Meyer, J.M. Dauer. "Encouraging science literacy: Developing frameworks describing students' use of evidence when solving environmental issues." North American Association for Environmental Education, Spokane, WA, Oct, 2018.
8. A.E. Sorensen, L. Corral, J.J. Fontaine, J.M. Dauer. "Authentic scientific data collection in support of an integrative model-based class: A framework for student engagement in the classroom." Ecological Society of America, New Orleans, LA, Aug 2018. (organized oral session).
9. Sorensen, A.E., Corral, L., Dauer, J.M., Fontaine, J. "Student cognitive processes and argumentation during consensus modeling" Symposium on Forging Integrated Expertise in Graduate Education, Raleigh, NC, June 4-5, 2018.
10. VanWormer, L., Mlawa J., Komba, E., Gustafson, C., Mrema, H., Dauer, J.M. "Using art and story to explore how primary school students in rural Tanzania understand planetary health: a qualitative study." 2018 Planetary Health Annual Meeting, Edinburgh, Scotland, May 2018.
11. Wilson, J., Dauer, J.M. "Civic engagement in an undergraduate course focused on socioscientific issues." UNL Spring Research Fair, Lincoln, NE, April 2018. **Won top poster.
12. Eischen, M., Dauer, J.M. "Student argumentation, knowledge and values related to biofuels." UNL Spring Research Fair, Lincoln, NE, April 2018.
13. Lally, D., Forbes, C. T., Dauer, J.M. "Helping undergraduate students CREATE understanding of scientific and popular media articles about contemporary water issues." NARST, March 2018, Atlanta GA.
14. Jimenez, P.C., Dauer, J.M. "Applying scientific evidence to solving socioscientific issues using a science literacy decision-making tool." NARST, March 2018, Atlanta GA.
15. Dauer, J.M., Alred, A. "A framework for quality decision-making to promote science literacy in a post-secondary classroom." NARST, March 2018, Atlanta GA.
16. Sorensen, A.E., Dauer, J.M., Corral, L., Fontaine, J.J. "Authentic scientific data collection in support of an integrative model-based class." American Geophysical Union, December 2017, New Orleans, LA.
17. Wilson, J., Dauer, J.M. "Civic engagement in socioscientific issues." UNL RED talk, Lincoln, NE, Oct 2017.
18. Dauer, J.T., Alred, A., Dauer, J.M., Niosco, N. "Exploration of undergraduate students' knowledge of community dynamics." Ecology Society of America. Portland, OR, Aug 2017.
19. Jimenez, P.C., Dauer, J.M. "Students' decision-making process within socioscientific issues: the use of a decision-making tool." SABER, Minneapolis, MN, July 2017.
20. Wilson, J., Dauer, J.M. "Civic engagement in an undergraduate course focused on socioscientific issues." UNL Spring Research Fair, Lincoln, NE, April 2017.
21. Dauer, J., Jimenez, P.C. "Supporting students' decision-making about food, energy and water socioscientific issues" Food, Energy & Water Education Poster Symposium, Water for Food Conference, April 2017, Lincoln, NE.

22. Peterson, A. M., Dauer, J., Forbes, C. "Using construal theory to understand students' problemization of a prairie dog socioscientific issue." Food, Energy & Water Education Poster Symposium, Water for Food Conference, April 2017, Lincoln, NE.
23. Golick D, Dauer J, Lynch L, Ingram E . "Brain Buzz: A framework for exploring pollination systems knowledge of undergraduates." Food, Energy & Water Education Poster Symposium, Water for Food Conference, April 2017, Lincoln, NE.
24. Helmke, C., Corral, L., Lute, M., Dauer, J.M., Fontaine, J. J. "Using citizen science to monitor carnivores in Nebraska." Midwest Fish and Wildlife Conference, Feb 2017, Lincoln, NE.
25. Peterson, A. M., Dauer, J., Forbes, C. "Using construal theory to understand students' problemization of a prairie dog socioscientific issue." Midwest Fish and Wildlife Conference, Feb 2017, Lincoln, NE.
26. Peterson, A. M., Dauer, J., Forbes, C. "Student conceptualization of wind energy issues and their decision-making in wind energy education" NARST Annual International Conference, April 2017, San Antonio, TX.
27. Lally, D., Sabel, J., Forbes, C., Dauer, J.M. "Undergraduate Students' Use and Understanding of Scientific and Popular Media Articles" NARST Annual International Conference, April 2017, San Antonio, TX.
28. Alred, A., Dauer J. "Exploring how values influence undergraduate informal and formal decision-making about a wildlife conservation issue." SABER, Minneapolis MN, July 2016.
29. Dauer, J. Lute, M. Straka, O. "Supporting students' formal decision-making about biofuels." SABER, Minneapolis MN, July 2016.
30. Dauer, J. "Teaching tools for agricultural literacy and science-informed decision-making." North American Colleges and Teachers of Agriculture, June 2016, Honolulu, Hawaii.
31. Golick D, Dauer J, Lynch L, Ingram E . "Brain Buzz: A framework for exploring pollination systems knowledge of undergraduates." International Pollinator Conference, July 2016, State College, PA
32. Dauer, J. Lute, M. Straka, O. "Supporting students' formal decision-making about biofuels." STEM retreat Oct 2016, Lincoln, NE
33. Straka, O., Dauer, J. "Science-informed arguments in undergraduates' opinions about biofuels" Spring Research Fair, April 2016, Lincoln, NE.
34. Straka, O., Dauer, J. "Science-informed arguments in undergraduates' opinions about biofuels" School of Natural Resources Elevator Speech Contest, Winning Undergraduate Poster, Feb 2016, Lincoln, NE.
35. Sabel, J., Vo, T., Alred, A., Dauer, J., Forbes, C. "Undergraduate Students' Scientifically-Informed Decision-Making about Water-Based Socioscientific Issues." NARST, Baltimore, MD, April 2016.
36. Golick, D., Dauer, J., Lynch, L., Ingram, E. "Buzz Brains: A framework for exploring pollination knowledge of undergraduates." National Entomological Society of America Meeting, Minneapolis, MN Nov 2015.
37. Dauer, J., Forbes, C. "A socioscientific framework for teaching a general science literacy course." UNL STEM Retreat, Lincoln NE, Oct 2015
38. Golick, D., Dauer, J., Lynch, L., Ingram, E. "Exploring pollination knowledge of undergraduates through interviews." Entomological Society of America, Manhattan KS, June 2015
39. Dauer, J., Forbes, C. "A socioscientific framework for teaching a general science literacy course." SABER, Minneapolis MN, July 2015
40. Alred, A., Doherty, J., Hartley, L., Dauer, J. "Biodiversity literacy: using learning progression frameworks to explore student explanations of species conservation" SABER Minneapolis MN, July 2015.
41. Parker, J., Covitt, B., Dauer, J., & Anderson, C.W. "Student sense making about climate change-related data" NARST, Chicago IL, April 2015

42. Freed, A., Dauer, J., Tompkins, E., & Anderson, C.W. "Do students improve their inquiry practices after Carbon TIME instruction?" NARST, Chicago IL, April 2015.
43. Dauer, J., Doherty, J., Freed, A., & Anderson, C. W. "Connections between student explanations and arguments from evidence about plant growth" SABER, Minneapolis MN, July 2014.
44. Dauer, J., & Anderson, C. W. "Learning from evidence in the context of global climate change." NARST, Pittsburg PA, April 2014.
45. Freed, A., Dauer, J., Doherty, J., Johnson, W., & Anderson, C. W. "Connections between students' explanations and interpretations of arguments from evidence." NARST, Pittsburg PA, April 2014.
46. Dauer, J., & Anderson, C. W. "Learning from evidence in the context of global climate change." Geology Society of America, North-Central Section, Lincoln, NE, April 2014.
47. Dauer, J.M., Miller, H., & Anderson, C.W. "Inquiry and argumentation about carbon transforming processes." NARST, Rio Grande, Puerto Rico, April 2013.
48. Miller, H., Webster, A., Dauer, J.M., & Anderson, C.W. "Alternative Learning Trajectories Toward Understanding Matter and Energy in Socio-Ecological Systems." NARST, Rio Grande, Puerto Rico, April 2013.
49. Dauer, J., & Anderson, C. W. "Learning from evidence in the context of global climate change." Geology Society of America, Denver CO, Oct 2013.
50. Dauer, J. & Anderson C.W. "Student practices during inquiry about carbon-transforming processes" Ecology Society of America (ESA), Minneapolis, MN, Aug 2013
51. Dauer, J. & Perakis, S. "Role of Ca oxalate in controlling Ca/Sr discrimination and $^{44}\text{Ca}/^{40}\text{Ca}$ fractionation" ESA, Minneapolis, MN, Aug 2013
52. Dauer, J. & Anderson C.W. "Student learning about tracing matter and energy in ecosystems" SABER, Minneapolis MN, July 2013
53. Dauer, J. & Anderson C.W. "An inquiry learning progression for carbon-transforming processes" NARST, Puerto Rico, April 2013
54. Miller, H., Webster A., Dauer, J., Anderson C.W. "Alternative learning trajectories toward understanding matter and energy in socio-ecological systems" NARST, Puerto Rico, April 2013
55. Dauer, J. & Anderson C.W. "Carbon TIME Project: Inquiry Activities and Learning Progression" Ecological Society of America, Portland, Oregon, Aug 2012
56. Dauer, J. & Anderson C.W. "Carbon TIME Project: Inquiry Activities and Learning Progression" CREATE for STEM at MSU, May 2012.

Older presentations venues:

Ecological Society of America, Austin TX, 2011; Pittsburgh, PA, Aug 2010; Montréal, Canada, Aug 2005; Portland OR. Aug 2004; Savannah GA. Aug 2003
 Biogeomon International Symposium on Ecosystem Behavior, Helsinki, Finland, June 2009.
 Forest Science Symposium, Oregon State University, Corvallis, OR, May 2009, May 2007.
 Northeast Ecology and Evolution Conference, University Park, PA, March 2005.
 Penn State University Environmental Chemistry Symposium, University Park, PA. March 2004.
 Cornell University Plant and Soil Symposium, Ithaca NY. April 2003.

Mentoring:

Post-doc Mentoring:

Cody Smith, University of Nebraska-Lincoln, School of Natural Resources	2019
Amanda Sorensen, University of Nebraska-Lincoln, School of Natural Resources	2017- present
Michelle Lute, University of Nebraska-Lincoln, School of Natural Resources	2015-2016

Graduate Mentoring:

F. John Hay, PhD, University of Nebraska-Lincoln, SNR	2019
Iris McFarlin, MS, University of Nebraska-Lincoln, SNR	2019
P. Citlally Jimenez, PhD, University of Nebraska-Lincoln, SNR	2016-present
A. McKinzie (Peterson) Sutter, MS, University Nebraska-Lincoln, SNR	2015-2017
Ashley Alred, MS, University of Nebraska-Lincoln, School of Natural Resources	2014-2016

Committee member:

Ella Burnham, PhD, University of Nebraska-Lincoln, Statistics	2019
Brianne Wolf, MS, University of Nebraska-Lincoln, SNR	2019
Katie Patterson, PhD, University of Nebraska-Lincoln, Chemistry Department	2019
Annika Kraft, PhD, University of Nebraska-Lincoln, Chemistry Department	2019
Bridget Gross, MS, University of Nebraska-Lincoln, Entomology Dept	2018 – present
Shana Barnett, PhD, University of Nebraska-Lincoln, Animal Science Dept	2018 – present
Jordan Bader, PhD, University of New Hampshire	2018 – present
Diane Lally, PhD, University of Nebraska-Lincoln, SNR	2017 – present
Brooke Talbott, MAS, University of Nebraska-Lincoln, SNR	2016 – present
Erin Ingram, PhD, University of Nebraska-Lincoln, Entomology Dept	2014 – present
Louise Lynch, PhD, University of Nebraska-Lincoln, Entomology Dept	2013 – 2016

Undergraduate Mentoring - Independent Research Projects:

Blaine Meyer	2018
Alese Sanders	2018
Emily Hergenrader (honors thesis reader)	2018
Emily Reif (honors thesis reader)	2018
Jena Wilson, University of Nebraska-Lincoln UCARE student	2016 – present
Madeline Eischen (honors thesis)	2016 – present
Lexus Wellman	2016
Jessica Thompson, University of Nebraska-Lincoln	2015
Olivia Straka, University of Nebraska-Lincoln UCARE student	2014 – 2015
Courtney Lannen, Michigan State University	2011 – 2012
Danielle Heston, Oregon State University	2008 – 2009
Jonathan Kravitz, Penn State University	2003 – 2004
Steven Wysinger (Tuskegee University), Penn State University	2004 – 2005

Service, Leadership and Professional Activities (past 5 years):

Department:

SNR Graduate Student Association Faculty Advisor	2015 – present
Leader and founding member, Natural Resources Diversity and Inclusion	2015 – present
Faculty Search Committee, Assistant Professor Position, School of Natural Resources	2018
Faculty Search Committee, Professor of Practice Position, School of Biological Sciences	2018
SNR Seminar Committee	2014 – 2016
SNR Social Committee	2014 – 2016
Faculty Search Committee, Assistant Professor Position, School of Natural Resources	2015
Environmental Studies Poster Judge - 2014, 2015, 2018	2014 – present
Volunteer, UNL School of Natural Resources annual NaturePalooza outreach	2014, 2015
Outdoor Science Laboratory Development Committee	2013 – 2014

College:

Student Course Evaluations Advisory Committee, CASNR	2018
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Natural Resources Diversity Initiative Student Organization Faculty Advisor	2016 – present
Volunteer, STEM activities for K-12 Lincoln Public School teachers	2018
Volunteer, STEMMING into the Future K-12 outreach, NE State Fair	2015
Prairie Corridor on Haines Branch Committee	2014 – 2015

University:

Student Success Faculty Fellow, UNL	2019 – 2020
Student Course Evaluations Task Force, UNL	2018
UNL Chancellor’s Commission on the Status of Women	2017 – present
UNL Discipline-based Educational Research Organization Leadership	2013 – 2018
Imposter Syndrome Workshop Facilitator, UNL	2016
UNL Spring Research Fair Poster Judge	2016

National/International Community:

Ecosphere Editorial Board, Education subject track	2019
Board of Governors of the Center for Great Plains Studies, Academic Affairs Standing Committee	2019
NSF DRK-12 Review Panel	2018
Multistate Research Planning Committee USDA NCDC231 - Collaborative for Research On Food, Energy and Water Education	2017
Learning Progression for Place & Region, (NSF, RCN), Workshop in Manhattan KS	2016
Mentor, Community for Advancing Discovery Research in Education	2015 – 2016
Advisory board member, NSF IUSE, <i>Put up your dukes and everybody wins: Investigating deliberative argumentation in large lecture biology</i> , Washington State University	2018

Ad-hoc Journal Reviewer (last 5 years)

- CBE- Life Sciences Education
- Journal of Geosciences Education
- The Institute for Effective Education (TIEE)
- Eurasia Journal of Mathematics, Science and Technology Education
- International Journal of Education in Math, Science & Technology

Requests to serve as an expert (Advisory Board or Steering Committee) on federal grant proposals:

1. Advisory Board Member, USDA NIFA HEC, 2019, “Supporting Undergraduate Teaching and Learning about Socio-Hydrological Challenges through Data-Driven Modeling in the FANH Sciences.” PI’s at UNL and University of Louisiana.
2. Advisory Board Member, NSF IUSE, 2018, “Evo-Med-Ed: an integrative approach for teaching and learning human evolution in undergraduate biology.” PI’s at Michigan State University.
3. Advisory Board Member, USDA-NIFA CBG, 2018, “Training students in sustainable development of socioecological systems through problem-based and experiential learning.” PI at University of Arkansas at Pine Bluff.
4. Advisory Board Member, NSF IUSE, 2017, “Put up your dukes and everybody wins: Investigating deliberative argumentation in large lecture biology.” PI’s at Washington State University.
5. Collaborating Mentor, USDA-NIFA, 2017, Postdoctoral fellowship for Zhian Kamvar: *Developing a Reproducible Research Curriculum from Real-World Examples in Agriculture*.
6. Steering Committee and founding member, NSF Research Coordination Network-UBE, 2016: *RELATES: Research Establishing & Linking Argumentation to Education in Science*
7. Advisory Board Member, NSF REAL, 2013, “Bio-ENGARD: Experiential Navigation of Graphical And Reasoning Decisions in Biology.” PI’s at Purdue University.

8. Advisory Board Member, NSF DRK-12, 2013, "SPICE: Science Practices in Inquiry and Critique for Environmental Literacy." PI's at Cary Institute of Ecosystem Studies.

Undergraduate Teaching Experience:

University of Nebraska-Lincoln

Science and Decision-making for a Complex World (SCIL 101): 2 sections Fall 2016, Spring 2017, Spring 2018, 2 sections Fall 2018, Fall 2019. Under the title *Intro to Agriculture and Natural Resources (AGRI/NRES 103)*: Fall 2014, 2 sections Fall 2015, Spring 2016.

An interdisciplinary science course with ~120 students per section. Serving as the lead instructor responsible for curriculum development for all sections encompassing ~600 students per year.

Teaching Undergraduate Science (SCIL 488/888) 1-credit course Spring 2018, 2019

Nebraska Canid Project (NRES 498) 1-credit course Fall 2016

School of Natural Resources Seminar (NRES 891) Fall 2015

Fundamentals of Biology (LIFE 121) Evolution, Ecology and Organisms, 2 sections of ~120 in Spring 2014

Michigan State University

Biological Science, Organisms and Populations, 120 students. Fall 2011

Science for Elementary Schools, 20 students Fall 2012

Linn-Benton Community College

Introductory Soil Science, 12 students Fall 2009

Professional Fellowships, Awards & Recognition:

Faculty Fellows for Student Success, UNL 2019-2020

Gaining expertise on leading change at the university by reviewing research literature, studying data, and discussing university initiatives surrounding student success.

Holling Family Award for Teaching Excellence, UNL 2017

Recognizes exceptional teaching within the College of Agriculture Sciences and Natural Resources

Research Development Fellow Program, UNL 2016 -2017

Selected to participate from a candidate pool with a 50% acceptance rate. The RDFP is designed to help jumpstart research programs by providing access to information and resources to successfully pursue external grant funding.

Center for Great Plains Studies Faculty Fellow 2016 - present

Nominated for an Inspire Award, recognizing women leaders in Lincoln, NE 2016

Community for Advancing Discovery Research in Education (CADRE) Fellow 2012 - 2013

An NSF-funded program that is a capacity building experience for early career researchers to gain experience in STEM education research and grant finding. One of 10 Fellows selected from competitive national pool.

Scholar, Faculty Institutes for Reforming Science Teaching (FIRST IV) 2011 - 2013

An NSF-funded program that trains post-doctoral researchers in active learning pedagogy over the course of two years via 1) two 2-week intensive workshops 2) development of an introductory biology course with colleagues 3) teaching with active mentoring by experts in the field of undergraduate education.

Science Curriculum Development & Design:

Science and Decision-Making for a Complex World, UNL 2014 - present

Lead instructor developing innovative curriculum for a freshman level course required by all students in the College of Agriculture and Natural Resources at UNL.

Classrooms Take Charge 2014 - 2018

Wrote curriculum designed to support student understanding of matter and energy transformation in human energy systems and engagement in service learning around carbon dioxide emissions reductions behaviors for 20+ classrooms in the Pacific Northwest. Funded by EPA EE grant.

Carbon TIME (Transformations in Matter & Energy) Project Director 2011 - 2012

Wrote learning progression-based teaching units on carbon-transforming processes for 6th to 12th grade, including extensive revision and development based on research of students and teacher feedback. Available publicly: <http://ibis.colostate.edu/MSP/CTIME/Index.php>.

Curriculum Development Consultant, Climate Change and Behavior 2009 - 2010

Created and piloted a set of lesson plans for K-12. Published and distributed by Bonneville Environmental Foundation.

The Franklin Institute Science Museum, Program Associate 2001 - 2002

Developed and conducted inquiry-based science workshops for multi-generational audiences of 200+ participants. Liaison between the museum and three highly diverse inner-city elementary school science programs.

Women in Science and Engineering Girl's Camp 2004, 2005

An inquiry workshop independently developed and chosen from a campus-wide entry pool at Penn State.

BeyondBooks.com 2000

Managed a team of researchers that designed interactive educational programs and created lesson plans.

Facilitating Professional Development of Instructors:

Teaching decision-making in the science classroom to promote science literacy
faculty workshop at University of Oregon, Eugene, OR **Feb 2019**

Overview of the LA Model, UNL Century Club -UNL faculty with class size <100 **April 2018**

E2FEWs Workshop for faculty at UNL

Dec 2017, March 2018, May 2018

Classrooms Take Charge Workshop, 2 days w/ 12 middle school teachers, Corvallis, OR **June 2017**

“Teaching for the 21st Century” Postsecondary Faculty Workshop, UNL **April 2016**
Invited active learning workshop attended by ~15 UNL faculty, Love Library, Lincoln, NE

Classrooms Take Charge Workshop, 2 days with 17 high school teachers, Corvallis OR **Aug 2015**

Project Director for Carbon TIME (Transformations in Matter & Energy) Primary facilitator and developer of 10 professional development workshops with ~ 40 teachers to support their use of our curriculum, and data collection including training to perform clinical interviews. Workshops were 1 to 3 days and both face-to-face and long-distance between 2011-2013.

Kellogg Biological Station K-12 Partnership Facilitated and developed 5 professional development workshops for in-service teachers during one-day workshops and week-long summer institute between 2011-2013.

Scholarships and Awards:

R. Spaniol/H.J. Andrews Exper. Forest Writing Retreat Grant, June 2010
Harry and Mildred Fowells Fellowship, April 2010, OSU College of Forestry
Meier Education Fund Fellowship, April 2009, OSU College of Forestry
Waring Travel Award, April 2008, OSU College of Forestry
Cathy Bacon Fellowship, April 2007, OSU College of Forestry
Global Fund Award for travel to Costa Rica, Feb 2004, PSU
J. Brian Horton Memorial Award, March 2004, PSU Ecology
Root Biology Fellowship. Summer 1997. Penn State University

Professional Memberships:

National Association for Research on Science Teaching (NARST)
Society for the Advancement of Biology Education Research (SABER)
Ecological Society of America (ESA) Education and Biogeochemistry Sections

Diversity and International Experiences:

Worked in highly diverse inner-city schools in Philadelphia during 2001-2002. Taught at a community college with a diversity of age and cultural groups. Mentored undergraduate researcher through a program for racial minority groups. Some Spanish language skills. Traveled abroad extensively including several months of coursework in England, coursework and travel in Peru, ecology research in Poland and Costa Rica.