KARI BISBEE O'CONNELL

Associate Director and Program Lead of Authentic & Field-Based Learning, STEM Research Center, Oregon State University, Corvallis, OR 97331. Cell phone: (541) 231-1007, Email: kari.oconnell@oregonstate.edu

Education

2001 Ph.D. in Forestry; minor in Soil Science; Department of Forest Ecology and Management; University of Wisconsin-Madison; Madison, WI.
1995 B.A. in Biology, Magna Cum Laude; Gustavus Adolphus College; St. Peter, MN.
1993 Exchange student; Department of Environmental Sciences; Murdoch University; Perth, Western Australia.

Professional Experience

Senior Researcher and Program Lead of Authentic & Field-Based Learning for the *STEM Research Center*, and Graduate Faculty in the College of Education, and the Environmental Arts and Humanities Program, Oregon State University, May 2016- present.

Responsibilities include conducting applied, systems-level STEM learning research from design of research questions and methods, developing collaborations and grants, leading all aspects of research projects, including data collection and analysis, and presenting findings in peer-reviewed journals and at national conferences. PI or Co-PI and all the requisite responsibilities including management of budgets, and submissions of all required reports. Research areas of focus include: access, and inclusion in undergraduate field education, collaborative STEM education networks, public engagement in science, ecological data literacy of K-12 teachers and students, and art-science collaborations to science engagement. Lead of the broader impacts partnership with the H.J. Andrews Experimental Forest LTER program. As Program Lead, I have developed the area of authentic and field-based learning, with multiple NSF grants supporting this area and mentorship and support of other senior researchers to write grants and conduct research in this area.

Project Coordinator for the *Oregon Natural Resources Education Program (ONREP), Forestry & Natural Resources Extension, Oregon State University,* Aug. 2008 – April, 2016 (0.6 FTE position).

Responsibilities included development, coordination, facilitation, and evaluation of professional development for middle and high school teachers, including serving as course instructor for continuing education graduate courses; grant writing and grant management to support those activities and other ONREP activities; establishing and maintaining partnerships between the ONREP and OSU researchers to provide teachers with connections to current research and to support OSU researchers with broader impacts; serve as coordinator for ONREP's role as K-12 education partner with the H.J. Andrews Experimental Forest LTER program.

Forest Director of the *H.J. Andrews Experimental Forest (HJA) Long-Term Ecological Research (LTER) Site* in the *Department of Forest Science, Oregon State University,* 2003 – 2008.

Responsibilities included lead administration of internationally-recognized, 6,400 ha, 80-bed field station in the central Cascades of Oregon; coordination of research activities; development and coordination of HJA education programs; supervision of six permanent research and maintenance staff; coordination of partnerships among Oregon State University, U.S. Forest Service Pacific Northwest Research Station, and the Willamette National Forest; sharing results of HJA research to a wide audience (i.e., natural resource managers, policymakers, visiting scientists, K- graduate students, K-12 teachers, media, potential donors); lead administration of long-term climate program; Co-Principal Investigator of the HJA LTER program; supervision and support of HJA Research Experience for Undergraduates students. Research focused on carbon dynamics and fire ecology of Pacific Northwest forests.

Postdoctoral Research Associate in the *Department of Forest Science, Oregon State University,* and **Long-Term Ecological Research Scientist** at the *HJA LTER Site*, 2001 – 2003.

Served as Lead Scientist of the Permanent Study Plot (PSP) program, which monitors forest growth, mortality, and biodiversity in 150 permanent forest plots on federal lands of the Pacific Northwest. Also served as a Co-Principal Investigator of the HJA LTER program. Research focused on vegetation and carbon dynamics of Pacific Northwest forests.

Graduate Research Assistant in the *Department of Forest Ecology and Management, University of Wisconsin-Madison*, July 1996–Jan. 2001.

Ph.D. dissertation entitled *The influence of soil drainage and moss species composition on carbon budgets of contrasting boreal black spruce forest communities* in January 2001 (Advisers: S.T. Gower and J.M. Norman). Research focus areas were soil surface CO_2 flux, bryophyte ecology, net primary production, light use efficiency, and net ecosystem production.

Graduate Teaching Assistant in the *Department of Forest Ecology and Management, University of Wisconsin-Madison*, Sep. 1997-Dec. 1997 and Sep. 1999-Dec. 1999.

Program Manager in the *Department of Rangeland Ecosystem Sciences, Colorado State University* and *Shortgrass Steppe (SGS) Long-Term Ecological Research (LTER) Site*, Sep. 1995-June 1996.

Major responsibilities were to organize the 1996 annual SGS Symposium for researchers, natural resource managers, and ranchers; organize annual progress reports to the USDA-ARS and NSF LTER program; write news briefs about the SGS-LTER site; and write a summary of current research at the site for local ranchers and land managers.

Grants (In Review)

Giamellaro, M., K. Hunter-Thomson, K. O'Connell. Teacher Field Inquiry Experiences for Learning Data Sciences. Submitted to NSF's DRK-12 program for 2023 – 2027, $1,433,344.

Grants (Funded)

O'Connell, K., Shaulskiy, S. Collaborative Research: Sense of Belonging in Undergraduate Field Experiences - Supports, Barriers, and Implications for Faculty. Submitted to NSF's Improving Undergraduate STEM Education program for 2021 – 2024, $452,498.

Garlick, S., Besley, J., Downs, M., K. O'Connell, K. Peterman. Collaborative Research: Advancing Public Engagement with Science across the Long-Term Ecological Research Network. Submitted to NSF's Advancing Informal STEM Learning program for 2021 – 2024, $1,999,962.

Luke, C., Swain, H., O'Connell, K. RAPID: The Virtual Field: Educational mitigation for the Covid-19 Pandemic. Funded by NSF for 2020-2021, $199,041.

Shore, L., Gurton, S., O'Connell, K., Schatz, D. On-the-Spot Assessment to Improve Scientist Engagement with the Public. Funded by NSF AISL for 2018-2022, $2,724,675.

O'Connell, K., Berkowitz, A., Billick, I., Bowser, G., Branchaw, J. RCN-UBE: Building capacity for evidence-based undergraduate field experiences. Funded by NSF RCN UBE for 2017-2021, $499,620.

Segura, C., D. Warren, K. O'Connell. Assessing the influence of lithology on the temporal-spatial variability of sediment transport and its relation to primary production in mountain streams. Funded by NSF Hydrologic Sciences for 2016 – 2019, $411,897.

Giamellaro, M., K. O'Connell. Numbers in Nature, Math on the Mountain: A Teacher-Scientist Partnership to Contextualize STEM Instruction. Proposal funded by the University School Partnerships program, 2016-17, $164,117.

O'Connell, K.B., B. Goltry. *Connecting high school teachers and their students to the College of Forestry*. Proposal funded by the Oregon State University, College of Forestry, Dean's Investment Fund, 2015-2016, $26,839.

O'Connell, K.B., M. Schulze, A. Hadley, M. Betts. *Hummingbird Watch*. Proposal funded by the Gray Family Fund of the Oregon Community Foundation, 2015-16, $10,000.

Nelson, M., S. Johnson, J. Jones, H. Gosnell, M. Betts. *Long-Term Ecological Research at the H.J. Andrews Experimental Forest (LTER7).* Proposal funded by the National Science Foundation, 2015-2022, $6,762,000, Portion of the grant to K.B. O'Connell is $144,000 over 6 years.

O'Connell, K.B., S. Sahnow. *Connecting high school teachers and their students to the College of Forestry*. Proposal funded by the Oregon State University, College of Forestry, Dean's Investment Fund, 2014-2015, $47,957.

O'Connell, K.B., S. Sahnow. *School community partnerships for watershed restoration.* Proposal funded by the Oregon Watershed Enhancement Board, 2013-2015, $32,000.

O'Connell, K.B. *Bringing the College of Forestry into middle and high school classrooms in Oregon and beyond.* Proposal funded by the College of Forestry Board of Visitors, 2012-2013, $10,000.

O'Connell, K.B., B. Black, M. Harmon, N. Hunter, R. Kennedy, O. Krankina, S. Sahnow. *Researcher-Teacher Partnerships: Making global climate change relevant in the classroom.* Proposal funded by the NASA Global Climate Change Education Program, 2011-2013, $331,935.

O'Connell, K.B., S. Sahnow. *Teachers as Researchers*. Proposal funded by the Gray Family Fund of the Oregon Community Foundation, 2010-2011, $8,000.

O'Connell, K.B., S. Sahnow. *Teachers as Researchers*. Proposal funded by the Gray Family Fund of the Oregon Community Foundation, 2009-2010, $5,000.

O'Connell, K.B., S. Sahnow. *Teachers as Watershed Researchers*. Proposal funded by the Oregon Watershed Enhancement Board, 2009-2010, $35,168.

Bond, B.J., S.L. Johnson, K.B. O'Connell. *Enhancing physical and virtual access to research and education at the HJ Andrews Experimental Forest.* Proposal funded by the NSF Facilities and Marine Lab Improvements program, 2008-2009, $307,562.

O'Connell, K.B. *Long-term studies of vegetation dynamics in the Pacific Northwest Amendment #4.* Proposal funded by the U.S. Forest Service Pacific Northwest Research Station, $52,000.

O'Connell, K.B. *Long-term studies of vegetation dynamics in the Pacific Northwest Amendment #3.* Proposal funded by the U.S. Forest Service Pacific Northwest Research Station, $75,060.

O'Connell, K.B. *Long-term studies of vegetation dynamics in the Pacific Northwest Amendment #2.* Proposal funded by the U.S. Forest Service Pacific Northwest Research Station, $35,000.

O'Connell, K.B. *Cost reimbursable agreement for research support of the H.J. Andrews Experimental Forest Amendment #2.* Proposal funded by the U.S. Forest Service Pacific Northwest Research Station, $94,995.

Valentine, T., D. Henshaw, K. B. O'Connell. *Enhancement of H.J. Andrews Experimental Forest computer lab and classroom.* Proposal funded by the Oregon State University Technology Resource Fee, 2006, $15,531.

Tullos, D., J. Jones, T. Dietterich, E. Thomann, K. O'Connell. *Summer institute in Ecoinformatics.* Proposal funded by the NSF Engineering Research Centers program, 2006 - 2010, $581,291.

O'Connell, K.B. *Long-term studies of vegetation dynamics in the Pacific Northwest Amendment #1.* Proposal funded by the U.S. Forest Service Pacific Northwest Research Station, 2004-2009, $8,500.

O'Connell, K.B. *Planning proposal for the H.J. Andrews Experimental Forest.* Proposal funded by the NSF Facilities and Marine Lab Improvements program, 2006-2007, $24,730.

O'Connell, K.B. *Cost reimbursable agreement for research support of the H.J. Andrews Experimental Forest Amendment #1.* Proposal funded by the U.S. Forest Service Pacific Northwest Research Station, 2005 – 2009, $50,001.

O'Connell, K.B. *Effects of fire management on fuels along fire regime and forest productivity gradients in Oregon: Implications for long-term carbon dynamics.* Proposal funded by the NASA New Investigator Program, 2004 - 2007, $344,096.

O'Connell, K.B. *Climatic controls of tree mortality.* Proposal funded by the U.S. Geological Survey, 2004-2005, $7,999.

O'Connell, K.B. *Long-term studies of vegetation dynamics in the Pacific Northwest.* Proposal funded by the U.S. Forest Service Pacific Northwest Research Station, 2004-2009, $101,499.

O'Connell, K.B. *Cost reimbursable agreement for research support of the H.J. Andrews Experimental Forest.* Proposal funded by the U.S. Forest Service Pacific Northwest Research Station, 2004, $170,000.

O'Connell, K.B., S. Greene. *100,000 Trees Can't Be Wrong or How I Came to Love My D-Tape.* Proposal funded by the U.S. Forest Service Pacific Northwest Research Station, 2003, $10,000.

O'Connell, K.B. *Long-term studies of forest dynamics in the Pacific Northwest.* Proposal funded by the U.S. Forest Service Pacific Northwest Research Station, 2002-2003, $93,000.

Harmon, M.E., B. Bond, S. Johnson, J. Jones, F. Swanson. *Long-Term Ecological Research at the H.J. Andrews Experimental Forest (LTER5).* Proposal funded by the National Science Foundation, 2002-2007, $4,680,000. Portion of the grant to K.B. O'Connell was $300,000 over 6 years.

Bisbee, K.E. 1997. *Estimating net primary productivity along a resource availability gradient using NDVI in a black spruce forest.* Proposal funded by the NASA Earth System Science Fellowship program, 1997-2000, $66,000.

Publications (published)

Rosin, M., M. Storksdieck, **K. O'Connell**, B. Keys, K. Hoke, B. V. Lewenstein. *accepted.* Broadening Participation in Science through Arts-Facilitated Experiences at a Cultural Festival. PLOS ONE.

Giamellaro, M., **K. O'Connell**, K. Riedinger. *in press.* Achieving Desired Student Outcomes in Virtual Field Experiences through Attention to Design Considerations, A Delphi Study. Journal of College Science Teaching.

Markiewicz, J., L. Goralnik, and **K. B. O'Connell**. *in press*. Screens on Trail: Digital Environmental Science, Arts, and Humanities Learning for Biocultural Conservation. In R. Rozzi, A. Berkowitz, et al. (Eds.). Field Environmental Philosophy: Education for Biocultural Conservation, Springer. In press. Invited.

Shaulskiy, S., A. Jolley, **K. O'Connell**. 2022. Understanding the Benefits of Residential Field Courses: The Importance of Class Learning Goal Orientation and Class Belonging. CBE-Life Sciences, Published Online:28 Jun 2022. https://doi.org/10.1187/cbe.21-08-0201

O'Connell, K., Hoke, K., Giamellaro, M., Berkowitz, A., & Branchaw, J. (2022). Designing and Studying Student-Centered Undergraduate Field Experiences: The UFERN Model. *BioScience*, 72 (2), 189–200. https://doi.org/10.1093/biosci/biab112

Robin, A. N., Farmer, A. A., **O'Connell, K.,** Varty, A. K., Hewlett, J. A., & Lee, J. W. (2022). Community College Students in the Field: A review of a Community Conversation on Successful Programs and Strategies. *The Bulletin of the Ecological Society of America*, *103*(3), e01999. https://doi.org/10.1002/bes2.1999

Staus NL, **O'Connell K.** and Storksdieck M. (2021). Addressing the Ceiling Effect when Assessing STEM Out-Of-School Time Experiences. Front. Educ. 6:690431. Doi: 10.3389/feduc.2021.690431.

Shortlidge, E. E., Jolley, A., Shaulskiy, S., Geraghty Ward, E., Lorentz, C. N., & **O'Connell, K**. (2021). A resource for understanding and evaluating outcomes of undergraduate field experiences. *Ecology and Evolution*, 1–22. https://doi.org/10.1002/ece3.8241

Ward, E. G., **O'Connell, K. B.,** Race, A., Alwin, A., Alwin, A., Cortijo-Robles, K., Esparza, D., Jolley, A., McDevitt, A., Patel, M., Prevost, L. B., Shaulskiy, S., Shinbro, X. A., Treibergs, K., Alvaro, M., & Sea, W. (2021). Affective Learning Outcomes in the Field: A Review of the 2021 Undergraduate Field Experiences Research Network Meeting. *The Bulletin of the Ecological Society of America*, *102*(4), e01920. https://doi.org/10.1002/bes2.1920

Flowers, S. K., **O'Connell, K**., & McDermott, V. M. (2021). Crafting Field Station and Marine Lab Communities for Undergraduate Diversity, Equity, and Inclusion. *The Bulletin of the Ecological Society of America*, *102*(4), e01908. https://doi.org/10.1002/bes2.1908

Goralnik, L., Kelly, SM, **O'Connell, KB**, Nelson, MP, and Schulz, M. 2020. Forest Discovery: Place Relationships on an Environmental Science, Arts, and Humanities (eSAH) Field Trip. Australian Journal of Environmental Education. 1: 1-12. doi:https://doi.org/10.1017/aee.2020.28

Giamellaro, M., **O'Connell, K.,** & Knapp, M. 2020. Teachers as participant-narrators in authentic data stories. *International Journal of Science Education 42(3)*, 406-425. DOI: 10.1080/09500693.2020.1714093.

O'Connell, K. B., Keys, B., Storksdieck, M., Rosin, M. 2020. Context Matters: Using art-based science experiences to broaden participation beyond the choir. *Journal of International Science Education, Part B.* Published online Feb. 18, 2020. DOI: 10.1080/21548455.2020.1727587

O'Connell, K. B., K. Hoke, A. Berkowitz, J. Branchaw, & M. Storksdieck. 2020. Undergraduate learning in the field: Designing experiences, assessing outcomes, and exploring future opportunities, Journal of Geoscience Education, DOI: 10.1080/10899995.2020.1779567.

Morales, N., **O'Connell, K. B.,** McNulty, S., Berkowitz, A., Bowser, G., Giamellaro, M., & Miriti, M. N. 2020. Promoting inclusion in ecological field experiences: Examining and overcoming barriers to a professional rite of passage. *The Bulletin of the Ecological Society of America*, *n/a*(n/a), e01742. https://doi.org/10.1002/bes2.1742.

Hoke, K., **O'Connell, K.,** Semken, S., & Arora, V. 2020. Promoting a Sense of Place Virtually: A Review of the ESA Weekly Water Cooler Chat Focused on Virtual Sense of Place. *Bulletin of the Ecological Society of America, 101*(4), 1-5. doi:10.2307/26933710

Rosin, M., Wong, J., **O'Connell, K.,** Storksdieck, M., Keys, B. 2020. Guerilla Science: Mixing Science with Art, Music and Play in Unusual Settings. Leonardo. 54: 2 (forthcoming). https://doi.org/10.1162/leon_a_01793.

Giamellaro, M. and **K.B. O'Connell**. 2018. Numbers in nature, math on the mountain: A teacher–scientist partnership to tell stories of place through data. Connected Science Learning. Issue 6: 1-25.

Ellison, Aaron; LeRoy, Carri; Landesbergen, Kim; Bosanquet, Emily; Buckley Borden, David; CaraDonna, Paul; Cheney, Katherine; Crystal-Ornelas, Robert; DeFreece, Ardis; Goralnik, Lissy; Irons, Ellie; Garmaon Merkle, Bethann; **O'Connell, Kari;** Penick, Clint; Rustad, Lindsey; Schulze, Mark; Waser, Nickolas. 2018. Art/Science Collaborations: New Explorations of Ecological Systems, Values, and their Feedbacks. Bulletin of the Ecological Society of America, April 20, 2018. **https://doi.org/10.1002/bes2.1384**

Givot, R., **K. O'Connell**, M. Betts, A. Hadley. 2015. Hummingbird Citizen Science: Students contribute to hummingbird conservation research while connecting content standards to the natural world. The Science Teacher. November (8): 25-33.

Woolley, T.J., M. E. Harmon, **K.B. O'Connell**. 2015. Inter-annual variability and spatial coherence of Net Primary Productivity across a Western Oregon Cascades landscape. Forest Ecology and Management 335: 60 – 70.

O'Connell, K.B., P.D. Morrell. 2014. Making Global Climate Change Relevant in the Classroom: An Experiential Approach to Professional Development. The Oregon Science Teacher 55(3): 21-25.

Acker, S. A., J. Kertis, H. Bruner, **K. B. O'Connell**, and J. Sexton. 2013. Dynamics of Coarse Woody Debris Following Wildfire in a Mountain Hemlock (Tsuga mertensiana) Forest. Forest Ecology and Management 302: 231-239.

Mitchell, S.R., M.E. Harmon, **K. B. O'Connell**. 2012. Carbon Debt and Carbon Sequestration Parity in Forest Bioenergy Production. GCB Bioenergy 4(6): 818-827.

Stephenson, N.L., P.J. Van Mantgem, A.G. Bunn, H. Bruner, M.E. Harmon, **K.B. O'Connell**, D.L. Urban, J.F. Franklin. 2011. Causes and implications of the correlation between forest productivity and tree mortality rates. Ecological Monographs. 81(4): 527-555.

Mitchell, S.R., M.E. Harmon, **K.B. O'Connell**. 2009. Forest fuel reduction alters fire severity and long-term carbon storage in three Pacific Northwest Ecosystems. Ecological Applications Vol. 19 (3): 643-655.

Henshaw, D.L.; Bierlmaier, F.; Bond, B.J.; **O'Connell, K.B**. 2008. Building a "cyber forest" in complex terrain at the Andrews Experimental Forest. In: Environmental Information Management 2008; Albuquerque, NM.

Vogel, J.G., B. P. Bond-Lamberty, E.A. Schuur, S.T. Gower, M.C. Mack, **K.B. O'Connell**, D.W. Valentine, R.W. Ruess. 2008. Carbon allocation in boreal black spruce forests across regions varying in soil temperature and precipitation. Global Change Biology 14:1-14.

Woolley, T.J., M.E. Harmon, **K.B. O'Connell**. 2007. Estimating Annual Bole Biomass Production: Using Uncertainty Analysis. Forest Ecology and Management. 253: 202-210.

Greene, Sarah; Bruner, Howard; **O'Connell, Kari**. 2006. Permanent plots in natural stands in the Pacific Northwest. In: Irland, Lloyd C.; Camp, Ann E.; Brissette, John C.; Donohew, Zachary R., eds. Long-term silvicultural and ecological studies: results for science and management. GISF Res. Pap. 005. New Haven, CT: Yale University, School of Forestry and Environmental Studies, Global Institute of Sustainable Forestry: 176-181.

O'Connell, K.E. Bisbee, S.T. Gower, and J.M. Norman. 2003. Comparison of carbon and light use dynamics of two boreal black spruce forest communities. Ecosystems 6: 236-247.

O'Connell, K.E. Bisbee, S.T. Gower, and J.M. Norman. 2003. Net ecosystem production of two contrasting boreal black spruce forest communities. Ecosystems 6: 248-260.

Bisbee, K.E., S.T. Gower, J.M. Norman and E.V. Nordheim. 2001. Environmental controls on ground cover species composition and productivity in a boreal black spruce forest. Oecologia. 129(2): 261-270.

Conference Presentations and Workshops (selection)

Markiewicz, J., L. Goralnik, **K. O'Connell.** 2020. Forest Discovery: A Place-based Environmental Science, Arts, and Humanities Experience. Inspire session presentation at the Ecological Society of America virtual meeting, August 3 – 6, 2020. https://www.youtube.com/watch?v=8wNwHTDaeX0

O'Connell, K.B. 2020. The Undergraduate Field Experiences Research Network Meeting. Invited presentation at the Organization of Biological Field Stations Strategic Planning Board Meeting, June 27, 2020.

O'Connell, K.B., K. L. Hoke, M. Giamellaro, & A. R. Berkowitz. 2020. The nature of undergraduate field experiences: A framework to guide program design and research. Poster presented at the Earth Educator Rendezvous. July 13 - 17, 2020.

O'Connell, K.B., K. L. Hoke, M. Giamellaro, & A. R. Berkowitz. 2019. The nature of undergraduate field experiences: A framework to guide program design and research. Poster presented at the Organization of Biological Field Stations meeting. Hasselt, Belgium, Sep. 10 - 13, 2019.

O'Connell, K. B., A. Berkowitz, G. Bowser, M. Giamellaro, M. Miriti. 2019. The Field Work Experience: Rite of Passage or Barrier to Entry? Inspire Session at the 2019 Ecological Society of America meeting, Louisville, KY, August 11 - 16, 2019.

O'Connell, K.B., K. L. Hoke, M. Giamellaro, & A. R. Berkowitz. 2019. The nature of undergraduate field experiences: A framework to guide program design and research. Poster presented at the Ecological Society of America meeting, Louisville, KY, August 11-16, 2019.

Shore, L.; Gurton, S.; **O'Connell, K**.; Schatz, D. (2019). *On the Spot Assessment to Improve Scientist Engagement with the Public*. Poster presented at the NSF AISL Program PI Meeting, Alexandria, VA.

Keys, B., **O'Connell, K**., & Storksdieck, M. (2019). Reaching Beyond the Choir: Analyzing Encounters with Science in Cultural Spaces. Poster Presentation: American Association for the Advancement of Science.

Keys, B., **O'Connell, K.,** & Storksdieck, M. (2018). Following Guerilla Science: Evaluating Unexpected and Unusual Science Learning Encounters in the US & UK. Conference Presentation: Science Events Summit.

O'Connell, K.B., K. Hoke, A. Berkowitz, J. Branchaw, I. Billick, G. Bowser. 2019. The Undergraduate Field Experiences Research Network. Poster presented at the NSF REU BIO Site PI Meeting, April, 2019.

Hoke, K, and **K.B. O'Connell**, The Undergraduate Field Experiences Research Network: Opportunities for Future Environmental Education Research. Poster presented at the North American Association of Environmental Education Research Symposium, Spokane, WA, October 9-10, 2018.

O'Connell, K.B., K. Hoke, A. Berkowitz, J. Branchaw, I. Billick, G. Bowser. 2018. The Undergraduate Field Experiences Research Network. Poster presented at the Long-Term Ecological Research All Scientists Meeting, Pacific Grove, CA, Sep. 30 – Oct. 4, 2019.

Giamellaro, M., **O'Connell, K**., & Knapp, M. (2019, April). *Teachers becoming actors in authentic data stories*. Paper presented at the American Educational Research Association annual meeting, Toronto, ON, Canada.

Giamellaro, M., **O'Connell, K.,** Knapp, M., & Jaffe, D. (2018, December). *Supporting teachers to identify natural phenomena through the storylines embedded in online Earth Science datasets*. Paper presented at the American Geophysical Union Fall Meeting, Washington, D.C. Abstract ID: 420717.

O'Connell, K.B., K. Hoke, A. Berkowitz, J. Branchaw, I. Billick, G. Bowser. 2018. The Undergraduate Field Experiences Research Network. Poster presented at the Organization of Biological Field Stations meeting, Arcadia, Maine, September, 2018.

Billick, Ian, and **Kari O'Connell.** 2018. The Undergraduate Field Experiences Research Network. Concurrent session at the Organization of Biological Field Stations meeting, Arcadia, Maine, September, 2018.

O'Connell, K., R. Nilson, J. Branchaw, A. Berkowitz. 2018. Undergraduate Field Experiences Research Network. Presentation at the Society for Advancement of Biology Education Research Meeting, Minneapolis, MN, July, 2018.

O'Connell, K., R. Nilson, J. Branchaw, A. Berkowitz. 2018. Undergraduate Field Experiences Research Network. Presentation at the Biennial Council for Undergraduate Research Meeting, July 1 – 3, 2018, Arlington, VA.

Kelly, S.M., Goralnik, L., **O'Connell, K.B**., Schulze, M., Nelson, M.P. (2018, September). "A new era of discovery: Connecting students to place through arts, science, and technology," Presentation at the Environmental Education Association of Oregon Conference. Canby Grove, OR.

O'Connell, K.B., M. Giamellaro, M. Knapp. 2017. Numbers in Nature, Math on the Mountain: engaging teachers and students in understanding natural phenomenon using authentic ecological data. Meeting of the Ecological Society of America, August 6 – 11, 2017, Portland, OR.

Kjelvik, M.K., E.H. Schultheis, **K.B. O'Connell**, R. Esposito, A. Berkowitz. 2017. Data Nuggets and Data Jams: Strategies to Increase Your Broader Impacts and Student Quantitative Reasoning. Workshop at the meeting of the Ecological Society of America, August 6 – 11, 2017, Portland, OR.

Goralnik, L, M. Schulze, **K. O'Connell**. 2016. H.J. Andrews Forest Discovery: A conceptual framework for interdisciplinary interpretation and empathy development. Meeting of the Association for Environmental Studies and Sciences, June 8-11, 2016, Washington, DC.

Goralnik, L. **O'Connell, K.B.,** Schulze, M. & Nelson, M.P. 2015. "HJ Andrews Forest Discovery: A Conceptual Framework for Interdisciplinary Interpretation." 20-minute presentation at the Symposium for Experiential Education Research (SEER) in Portland, OR, October 21-25, 2015.

Goralnik, L. **O'Connell, K.B**., Schulze, M. & Nelson, M.P. 2015. "Forest Discovery: Crosscutting Concepts and Environmental Responsibility in the HJ Andrews Experimental Forest. An Interpretive Learning Trail Conceptual Framework." Poster presentation at the Association for Environmental Studies and Sciences (AESS) conference, San Diego, CA. June 2015.

Kalnin, Julie S., Patricia D. Morrell, and **Kari B. O'Connell**. 2015. Teachers as Scientists: Examining the Influence of a Long-Term Professional Development Model. Paper presented at the American Educational Research Association annual meeting, Chicago, IL April 16 – 20, 2015.

Morrell, P.D., **K. B. O'Connell**, and P. Nelson. 2015. Using a Scientist Teacher Partnerships Model to Provide Professional Development in Climate Change. Paper presented at the *Annual Meeting of the Association for Science Teacher Education*, Portland, OR, January 7 – 10, 2015.

Morrell, P.D., **K. B. O'Connell**, and P. Nelson. 2014. Preparing Teachers to Explore Global Climate Change with their Middle and High School Students. Paper presented at the *Annual Meeting of the Association for Science Teacher Education*.

O'Connell, K., P. D. Morrell. 2013. Teachers as Researchers: environmental science research experiences for middle and high school teachers in Oregon. 2013 American Geophysical Union Meeting in San Francisco, CA.

O'Connell, K., P. D. Morrell (2013). Researcher Teacher Partnerships: Making global climate change relevant in the classroom. *2013 National Science Teachers Association*

O'Connell, K. 2013. Researcher Teacher Partnerships: Making global climate change relevant in the classroom. 2013 Tri-agency (NSF, NOAA, NASA) climate change education P.I. meeting in Arlington, VA.

O'Connell, K. and E. Cullander. 2013. Researcher Teacher Partnerships: Improving climate literacy and the teaching of science in middle and high school classrooms. 2013 Pacific Northwest Climate Science Conference in Portland, OR.

Morrell, P.D. & **O'Connell, K**. 2013. Results of using a teacher as researcher PD model for climate change. *2013 Conference Proceedings of the Annual Meeting of the Association for Science Teacher Education*.

Morrell, P.D., & **O'Connell, K.** 2012. Helping Teachers with Climate Change. 2012 Conference Proceedings of the Annual Meeting for the Association for Science Teacher Education.

Morrell, P.D., & **O'Connell, K.** 2012. An experiential approach to climate change professional development. Paper presented at the 2012 Annual Conference of the National Association for Research in Science Teaching, Indianapolis, Indiana.

O'Connell, K. 2012. Researcher Teacher Partnerships: Making global climate change relevant in the classroom. 2012 Tri-agency (NSF, NOAA, NASA) climate change education P.I. meeting in Arlington, VA.

Morrell, P.D., Sahnow, S., & **O'Connell, K**. 2011. Research-teacher partnerships: Developing teachers' understanding of scientific inquiry. 2011 Conference Proceedings of the Annual Meeting of the Association for Science Teacher Education.

O'Connell, K.E.B., S. Sahnow, N. Dimeo-Ediger. 2009. Teachers as Researchers. The North American Association of Environmental Education Conference. Oct. 7 – 10, Portland, OR.

O'Connell, K.E.B., S. Sahnow, S. Bottoms, N. Dimeo-Ediger. 2009. Teachers as Researchers. LTER All Scientist Meeting. Sep. 13 - 17, Estes Park, CO.

Mitchell, S.R., M. E. Harmon, **K. E. B. O'Connell**, and F. Schneckenberger. 2009. Landscape-level fuel treatments alter pyrogenic carbon emissions but reduce long-term carbon storage. Ecological Society of America Meeting. Aug. 2 – 7, Albuquerque, NM.

O'Connell, K.E.B., S. Sahnow, S. Bottoms, N. Dimeo-Ediger. 2008. Teachers as Researchers. NSTA Area Conference. Nov. 20-22, Portland, OR.

Mitchell, S.R., M. E. Harmon and **K. E. B. O'Connell**. 2007. Effects of forest fuel reduction on fire severity and long-term carbon dynamics across three Pacific Northwest ecosystems.
Ecological Society of America Annual meeting. August 5-10, 2007, San Jose, California.

O'Connell, K.E.B., S. Bottoms, J. Jones, K. Keable, D. Tullos, T. Valentine. 2006. Andrews LTER Education Programs. LTER All Scientist Meeting. Sep. 21-23, Estes Park, CO.

Tullos, D., J. Jones, T. Dietterich, E. Thomann, **K. O'Connell**. 2006. The challenges and opportunities of educating and training multidisciplinary scientists in ecosystem informatics. International Conference on Ecological Informatics. Dec. 4 – 6, Santa Barbara, CA.

Woolley, T.J., Harmon, M.E., and **K.E. O'Connell**. 2005. Inter-annual variation and spatial coherence of Net Primary Productivity at multiple spatial scales in the central Cascades of Oregon. Ecological Society of America Annual meeting. August 7-12, 2005, Montreal, Quebec.

Woolley, T., M.E. Harmon, **K.B. O'Connell**. 2005. Interannual variation and spatial coherence of tree biomass production in a second-growth small watershed in the central Cascades of Oregon. Annual meeting of the Northwest Science Association, March 23 - 26, 2005, Corvallis, OR.

Shaw, D., H. Bruner, **K. O'Connell**, M. Elliot. 2005. Natural stand development influenced by laminated root rot: a 78-year record. Annual meeting of the Northwest Science Association, March 23 - 26, 2005, Corvallis, OR.

O'Connell, K.E.B., M.E. Harmon, H. Bruner, G. Spycher. 2004. Long-term aboveground carbon accumulation in Douglas-fir forests of the Pacific Northwest: a new approach. Annual meeting of the Ecological Society of America, August 1-6, 2004, Portland, OR.

Woolley, T., M.E. Harmon, **K.B. O'Connell.** 2004. Estimating annual stand productivity: Determining sampling methodology using uncertainty analysis. Annual meeting of the Ecological Society of America, August 1-6, 2004, Portland, OR.

Bruner, H., **K.B. O'Connell**, S. Acker, J. Kertis. 2003. The effects of wildfire on vegetation dynamics of a mountain hemlock forest in the western Oregon Cascades. North American Forest Ecology Workshop, June 16-20, 2003, Corvallis, OR.

Bisbee, K.E., S.T. Gower, and J.M. Norman. 2001. Net ecosystem production of two contrasting boreal black spruce ecosystems in central Saskatchewan. Annual meeting of the Ecological Society of America, August 5-10, 2001, Madison, Wisconsin.

Bisbee, K.E., S.T. Gower, and J.M. Norman. 2000. Moss species as indicators of carbon cycling in a boreal black spruce forest in central Saskatchewan, Canada. The Role of Boreal Forests and Forestry in the Global Carbon Budget, May 8-12, 2000, Edmonton, Alberta, Canada.

Bisbee, K.E., S.T. Gower, J.M. Norman, S.J. Steele. 1997. Controls of spatial variation in net primary production of black spruce forests in central Saskatchewan, Canada. Annual meeting of the Ecological Society of America, August 10-14, 1997, Albuquerque, New Mexico.

Bisbee, K.E., S.T. Gower, and J.M. Norman. 1997. Estimating net primary production across a resource-availability gradient using NDVI in a black spruce forest landscape. BOREAS (Boreal Ecosystem and Atmosphere Study) Workshop, April 18-21, Annapolis, MD.

Bisbee, K.E., I.C. Burke, and R.H. Kelly. 1995. Differential effects of increased output and decreased input due to cultivation on soil organic matter dynamics and nutrient availability in shortgrass steppe. Annual meeting of the Ecological Society of America, July 30-August 3, 1995, Snowbird, Utah.

Bisbee, K.E. and T.W. Sipe. 1995. Patterns of availability and use of browse by white-tailed deer in old-growth and successional stands in Nerstrand Big Woods State Park. Annual Gustavus Adolphus College Sigma Xi Symposium, May 8, 1995, St.Peter, MN.

Invited Lectures and Seminars

O'Connell, K.B. 2020. The nature of undergraduate field experiences: A framework to guide program design and research. Invited presentation at the University of Michigan Biological Field Station Annual Research Meeting, Ann Arbor, MI, Feb, 7-8, 2020.

O'Connell, K.B. 2020. Demonstrating and improving the value of undergraduate field education. Invited presentation at the Annual Meeting of the National Association of Marine Labs, virtual meeting, March 16, 2020.

O'Connell, K.B. 2017. Numbers in Nature, Math on the Mountain: engaging teachers and students in understanding natural phenomenon using authentic ecological data. Invited seminar speaker at the Cary Institute, MIlbrook, NY. November 17, 2018.

Knapp, Melinda, **Kari O'Connell,** Jennifer Williams. 2017. Invited plenary for the Ambitious Math Science Teaching Institute, June 27-30, 2017, Corvallis, OR.

Goralnik, L., **O'Connell, K.B**., Schulze, M. 2017. "Forest discovery: An arts, humanities, and environmental science experience of place," with 5-minute IGNITE presentation in *Art and Science Collaboration: Disciplinary Diversity as a Means of Exploring Ecological Systems and Value Structures. August 6 – 11, 2017,* Ecological Society of America annual meeting in Portland, OR.

O'Connell, K.E.B. 2013. Natural Resources Education for K-12 teachers and students in Oregon. Guest Lecture in 'Avian Conservation,' Fisheries and Wildlife Department, Oregon State University, November 7, 2013.

O'Connell, K.E.B. 2013. Translating the Environmental Sciences for K-12 teachers and students. *Guest Lecture in FW 489*, 'Effective Communications in Fisheries and Wildlife Science,' Oregon State University, May 16, 2013.

Ron, S. and K.E.B. O'Connell. 2013. Schoolyard LTER: an international collaboration. National Science Foundation LTER mini-symposium, Arlington, VA, February 28, 2013.

O'Connell, K.E.B. 2012. Research experience for teachers: connecting K-12 education to Andrews LTER research. *LTER All Scientists Meeting*, Estes Park, CO, September 9, 2012.

O'Connell, K.E.B. 2007. Stories from a hidden forest: the H.J. Andrews Experimental Forest. *Eugene Natural History Society*, Eugene, OR, March 16, 2007.

O'Connell, K.E.B. 2007. H.J. Andrews Experimental Forest education programs. *Guest lecture in Environmental Education in Theory and Practice*, Environmental Studies Program, University of Oregon, February 1, 2007.

O'Connell, K.E.B. 2003. The effects of wildfire on vegetation dynamics of a mountain hemlock forest in the western Oregon Cascades. *Society for Ecological Restoration Northwest Chapter Regional Conference*, Portland, OR, March 27, 2003.

O'Connell, K.B. 2002. Carbon dynamics of Douglas-fir forests with different succession rates after clear-cut harvest. *Department of Forest Science*, Oregon State University, 14 March 2002.

Bisbee, K.E. 2001. The influence of soil drainage and moss species composition on carbon budgets of contrasting boreal black spruce forest communities. *Department of Forest Science*, Oregon State University, 28 January 2001.

Evaluation and Technical Reports (selected)

O'Connell, K., K. Hoke, R. Nilson. 2018. Report from the Field on the Design, Outcomes, and Assessment of Undergraduate Field Experiences. Technical Report. Corvallis, OR: Oregon State University.

O'Connell, K., Keys, B., & Storksdieck, M. 2018: Getting to Know Guerilla Science Participants: Evaluating Unexpected and Unusual Science Encounters. Technical Report. Corvallis, OR: Oregon State University.

Staus, N.L., K. O'Connell, M. Storksdieck. 2018. STEM Beyond School Year 2: Accomplishments and Challenges. Technical Report. Corvallis, OR: Center for Research on Lifelong STEM Learning.

O'Connell, K.; Keys, B. Storksdieck, M. Staus, N. 2017. *Taking Stock of the STEM Beyond School Project: Accomplishments and Challenges.* Technical Report. Corvallis, OR: Center for Research on Lifelong STEM Learning.

O'Connell, K.; Keys, B. Storksdieck, M. 2017. *Taking Stock of the Oregon STEM Hubs: Accomplishments and Challenges.* Technical Report. Corvallis, OR: Center for Research on Lifelong STEM Learning.

Honors

Mary Rellegert Forestry Education Award, 2011
NASA New Investigator Award, 2004
NASA Earth System Science Graduate Fellow, 1997-2000, University of Wisconsin-Madison.
Magna Cum Laude, 1995, Gustavus Adolphus College.
Phi Beta Kappa, 1995, Gustavus Adolphus College.
Rupert Anderson Research Award, 1995, Gustavus Adolphus College.
National Science Foundation Research Experience for Undergraduates Fellow, 1994, Colorado State University.

Graduate Students

Past: Co-advisor for Travis Woolley, M.S. (2006), Stephen Mitchell, Ph.D. (2009).

Past: On the committees of Sarah Kelly, M.S., Environment Arts and Humanities Program at OSU, Katie Williams, M.S., Department of Forest Ecosystems and Society, OSU, Amy Hoffman, M.A., Sam Littlefield, M.S. and Amanda Devine, M.S. (Univ. of Vermont Field Naturalist program).

Professional Activities

Member of Long-Term Ecological Research Network Executive Board (2015-2018)
Reviewer for *Canadian Journal of Forest Research, Forest Ecology and Management, Tree Physiology, Journal of Arid Environment, CBE Life Sciences Education, Bioscience, Ecosphere*
Merit review panel member for *NASA Global Climate Change Education Program*
Ad hoc reviewer for proposals to *NSF Division of Environmental Biology and National Institute for Global Environmental Change*
Member of National Association of Geoscience Teachers, Ecological Society of America, Organization of Biological Field Stations
Chair of Professional Development Working Group, LTER Education Executive Committee (2012-2013)
Reviewer for Long-Term Ecological Research Digital Library (2013)
Chair of Organizational Development Committee, Organization of Biological Field Stations (2007)

Professional Development

Qualitative Research Summer Intensive, Research Talk, July 23-27, 2018
GLOBE (Global Observations to Benefit the Environment) Training, University of Alaska, June, 2012
Media Training, Oregon State University, October 18, 2007.
Development Training, Oregon State University Foundation, Jan. 24, 2007.
Policy Communications Training, Organization of Biological Field Stations, 2006.
Time Management Skills, Fred Pryor Seminar, Jan. 11, 2005.
Hiring Smart, Oregon State University, March 9, 2004.
Core Curriculum for Managers and Supervisors, Oregon State University, Feb. 16-19, 2004.

Development of STEM Resources (facilitated and reviewed by Kari O'Connell)

O'Connell, K. 2015. Lab Coats Optional. Series of videos for use by high school teachers to provide a window into the process of scientific inquiry as a field scientist. http://onrep.forestry.oregonstate.edu/lab-coats-optional.

Boyle, Leilagh. 2019. All washed up? The effect of floods on cutthroat trout. Data nugget published on the Data Nuggets website: http://datanuggets.org/tag/fish/.

Cain, Lee, and Nick Baisley. 2014. Using litter-fall to study carbon cycling. Published in Clearing Magazine on June 13, 2014. For retrieval, see: http://clearingmagazine.org/archives/10008.

Cameron, Joe. 2014. Using snowpack data for inquiry, graphing and analysis. Published in Clearing Magazine on June 12, 2014. For retrieval, see: http://clearingmagazine.org/archives/10040.

Charnes, Molly. 2013. H.J. Andrews Experimental Forest Tea Party. Published in the Long-Term Ecological Research Digital Library. For retrieval, see: http://educationlibrary.lternet.edu/node/8.

Quinn, Pad. 2014. SWEet! : Using Cascade Snowpack to Teach Climate Change. The Oregon Science Teacher 55(3): 26-30.

Continuing Education Graduate Courses taught by Kari O'Connell

Course Title	Course #	Year	Term	Credits	Institution
Teachers as Watershed Researchers	FS508	2009	Summer	1	Oregon State University
Teachers as Watershed Researchers	FS508	2009	Fall	1	Oregon State University
Teachers as Researchers	CI810	2010	Summer	1	Portland State University
Teachers as Researchers: Field-Based Science Inquiry	CI810	2010	Fall	1	Portland State University
Teachers as Watershed Researchers	FS508	2010	Fall	1	Oregon State University
Teachers as Researchers: Field-Based Science Inquiry	CI810	2011	Spring	1	Portland State University
Connecting Wildlife Research and Government Policy to Your Classroom	CI810	2011	Spring	1	Portland State University
Climate Change for Classroom Teachers	ED901	2011	Summer	4	University of Portland
Teachers as Researchers: Field-Based Science Inquiry	CI810	2012	Spring	1	Portland State University
Making global climate change relevant in the classroom	ED901	2012	Spring	2	University of Portland
Topics in Climate Science for Teachers	ED901	2012	Summer	4	University of Portland
Global Climate Change for Students	ED901	2013	Spring	2	University of Portland
Teacher as Researcher: Global Climate Change	ED901	2013	Summer	4	University of Portland
Dissemination of climate change teaching ideas to a broader audience	ED901	2014	Spring	2	University of Portland
Making a service-learning project plan	ED902-A	2014	Spring	1	University of Portland
Teachers as Researchers: Forest Field Investigations	ED903	2014	Summer	1	University of Portland
Engaging students in watershed restoration projects	ED902	2014	Summer	1	University of Portland
Teachers as Researchers: Forest Field Investigations and Data Analysis	ED904	2014	Fall	1	University of Portland