

KERRY M. BYRNE, PHD

Oregon Institute of Technology
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EDUCATION

Ph.D., Ecology, *Colorado State University*, Fort Collins, CO. 2007 - 2012

Bachelor of Science, with honors, *University of California, Davis*, Davis, CA. 2000 - 2004

Major: Environmental Biology and Management, Concentration: Environmental Biology

Tropical Ecology Study Abroad Program, *University of California*, Monteverde, Costa Rica, Fall 2004

PROFESSIONAL APPOINTMENTS

Assistant Professor, Department of Natural Sciences, *Oregon Institute of Technology*, Klamath Falls, OR. 2013 - present

Courtesy Research Associate, Soil and Crop Sciences Department, *Colorado State University*, Fort Collins, CO. 2013 – present

Courtesy Faculty, Department of Botany and Plant Pathology, *Oregon State University*, Corvallis, OR. 2015 - present

Post-doctoral Research Associate, *University of California, Davis*, Davis, CA. 2012 - 2013

Graduate Research Assistant, *Colorado State University*, Fort Collins, CO. 2007 – 2012

Ecologist, *CH2M Hill*, Sacramento, CA. 2005-2007

TEACHING EXPERIENCE

Oregon Institute of Technology: Careers in Environmental Science, Soil Science (lecture and lab), Field Methods/Advanced Field Methods in Environmental Science, Principles of Biology (lecture and lab), Environmental Science Research, Plant Ecology (lecture and lab), Botany (lecture and lab), General Ecology (lecture and lab), Evolutionary Biology, Sustainable Human Ecology (lecture and lab)

Colorado State University: Introduction to Grass Taxonomy (intense short course with lab), Rangeland Plants Ecogeography (lecture and lab)

RESEARCH ADVISING AND MENTORING

Graduate Committees: Laura Kentnesse (MS, Oregon State University)

Undergraduate mentoring: Liston Case, Nathan Connell, Michelle Dalton, Taylor Mays, Aaron Miller, William Natividad, Rizka Ongge, Kane Trobitz, Justin Willhite, and Allison Young (OIT); Christine Byrne, Kristina Halliman (NSF REU students, Colorado State University)

K-12 Teacher mentoring: Jennifer Parrish (NSF RET, Colorado State University)

Plant Identification Coach, Rangeland Ecology Club, Colorado State University, 2008

FUNDING

Miller, A. (undergraduate co-PI) and **K.M. Byrne** (PI). 2017. Phenological changes of important forb species in a changing climate. Oregon Institute of Technology, Resource Budget Commission Award. \$1062

Byrne, K.M. (PI). 2017. Multi-year inventory of *L. floccosa* ssp. *bellingariana* and its habitat. Bureau of Land Management, Lakeview Klamath Falls Office. \$10,238

Byrne, K.M. (PI) and Kaczynski, K.L. (co-PI; California State University, Chico). 2016 – 2020. Drought and sagebrush: management implications. Bureau of Land Management, Lakeview Klamath Falls Office. \$21,000, awarded, additional \$79,000 *pending*

FUNDING, CONT.

- Byrne, K.M.** (PI). 2015 – 2020. Demographic monitoring of a rare southern Oregon endemic, *Astragalus applegatei* M. Peck. US Fish and Wildlife Service, Pacific Southwest Region. \$58,749
- Byrne, K.M.** (PI). 2014 – 2016. Demographic Monitoring of Applegate's Milkvetch. US Fish and Wildlife Service, Pacific Southwest Region. \$13,278. Additional \$16,000 *pending* from Oregon Department of Agriculture to extend the study for an additional two years (2017 – 2018)
- Byrne, K.M.** (PI). 2015. Student research opportunities in Biology-Health Sciences and Environmental Science. Oregon Institute of Technology, Resource Budget Commission Award. \$5,000
- Ongge, R. (undergraduate co-PI) and **K.M. Byrne** (PI). 2015. Pollination study of the Federally Endangered flower, Applegate's milkvetch. Oregon Institute of Technology, Resource Budget Commission Award. \$692
- Dalton, M. (undergraduate co-PI), **K.M. Byrne** (co-PI), and K. Usher (PI). 2015. Identify the obligate symbionts of a Federally Endangered plant species. Oregon Institute of Technology, Resource Budget Commission Award. \$522
- Byrne, K.M.** (PI) and W.K. Lauenroth (co-PI). 2010. Predicting Impacts of Climate Change in Native Grasslands of the Great Plains. The Nature Conservancy, Nebraska Chapter. John E. Weaver Competitive Grant Program. \$1,000

BICYCLE ADVOCACY FUNDING

- Byrne, K.M.** (PI), S. Decker, and J. Yost (co-PIs). 2016. Klamath Falls' second annual National Bike to Work Day Breakfast. Sky Lakes Medical Center Charity Committee Grant. \$984
- Byrne, K.M.** (PI), S. Decker, and J. Yost (co-PIs). 2015. Klamath Falls' first annual National Bike to Work Day Breakfast. Sky Lakes Medical Center Charity Committee Grant. \$1,000
- Byrne, K.M.** (PI). 2009 – 2010. Colorado State University Bike Safety Advocacy Program. Colorado State University, Student Learning, Involvement, and Community Engagement Program Grant. \$1,800

PUBLICATIONS

*undergraduate advisee

Accepted Manuscripts

- Wilcox, K.R., Z. Shi, L.A. Gherardi, N.P. Lemoine, S.E. Koerner, D.L. Hoover, E. Bork, **K.M. Byrne**, J. Cahill, Jr., S.L. Collins, S. Evans, A.K. Gilgen, P. Holub, L. Jiang, A.K. Knapp, L. Yahdjian, D. LeCain, J. Liang, P. Garcia-Palacios, J. Peñuelas, W.T. Pockman, M.D. Smith, S.R. White, K. Zhu, and Y. Luo. 2017. Asymmetric responses of primary productivity to climate extremes: a synthesis of grassland precipitation manipulation experiments. *Global Change Biology*. DOI: 10.1111/gcb.13706

Manuscripts published

- Byrne, K.M.**, P.B. Adler, and W.K. Lauenroth. 2017. Contrasting effects of precipitation manipulations on plant communities within the Great Plains, U.S.A. *Journal of Vegetation Science* 28: 238-249.
- Adler, P. B., **K. Byrne**, and J. Leiker. 2013. Can the past predict the future? Experimental tests of historically-based population models. *Global Change Biology* 19: 1793-1803. Highlighted in *Nature Climate Change*
- Robinson T.M.P., K.J. La Pierre, M.A. Vadeboncoeur, **K.M. Byrne**, M.L. Thomey, and S.E. Colby. 2013. Seasonal, not annual precipitation drives community productivity across ecosystems. *Oikos*, 122: 727-738.
- Byrne, K.M.**, W.K. Lauenroth, and P.B. Adler. 2013. Contrasting effects of precipitation manipulations on production at two sites within the central grassland region, USA. *Ecosystems*, 16, 1039-1051.

PUBLICATIONS, CONT.

- Evans S.E., **K. M. Byrne**, W.K. Lauenroth, and I.C. Burke. 2011. Defining the limit to resistance in a drought-tolerant grassland: long-term severe drought significantly reduces the dominant species and increases ruderals. *Journal of Ecology*, **9**: 1500-1507.
Received Issue 6 (November 2011) Editor's Choice Award
- Byrne, K.M.**, W.K. Lauenroth, P.B. Adler, and C.M. Byrne*. 2011. Estimating Aboveground Net Primary Production in Grasslands: a Comparison of Non-Destructive Methods. *Rangeland Ecology and Management* **64**: 9-12.
- Buhnerkempe, M., N. Burch, S. Hamilton, **K.M. Byrne**, E. Childers, K.A. Holfelder, L. McManus, M.I. Pyne, G. Schroeder, and P.F. Doherty, Jr. 2011. The utility of transient sensitivity for wildlife management and conservation: Bison as a case study. *Biological Conservation* **144**: 1808-1815.
- Pyne, M.I., **K.M. Byrne**, P.F. Doherty, Jr., K.A. Holfelder, L. McManus, M. Buhnerkempe, N. Burch, E. Childers, S. Hamilton, G. Schroeder. 2010. Survival and Breeding Transitions for a Reintroduced Bison Population: a Multi-state Approach. *Journal of Wildlife Management* **74**: 1464-1471.
- Byrne, K.M.**, W.K. Lauenroth, and L. McManus. 2010. Non-native Plant Species Impacts on Production and Diversity in the Front Range of Colorado. *Western North American Naturalist* **70**: 288-295.

Manuscripts in prep

- Sudderth, E.A., **K.M. Byrne**, E. Dixon, L.G. Reichmann, L.A. Gherardi, H. Lim, E.B. Sudderth, C.V. Hawkes, P.B. Adler, E.L. Brodie, and O.E. Sala. Local and regional soil microbial and plant responses to changes in precipitation: a cross-site study in arid-subhumid U.S. grasslands. In prep for *Ecosystems*.
- Ongge, R.* and **K.M. Byrne**. Pollinators increase seed set in a self-compatible rare *Astragalus* species. In prep for *American Midland Naturalist*.

REPORTS (PEER REVIEWED)

- Hiss, A.E., **K. Byrne**, D. Bramlet, F.M. Roberts Jr., and S. White, on behalf of the Riverside County Transportation Commission. 2007. State Route 79 Realignment Project: Final Rare Plant Survey Report. District 8-RIV-79-KP R25.4/R54.4 (PM R15.78/R33.80) 08-494000.

INVITED TALKS AND SEMINARS

- Byrne, K.M.** A first look at the reproductive biology & demography of Applegate's milkvetch: Oregon's most imperiled plant. Brown Bag series, U.S. Fish and Wildlife Pacific Southwest Region, Klamath Falls office, July 2016.
- Byrne, K.M.** Climate change in rangelands: implications for management and conservation. Oregon State University, Master Naturalist Program, East Cascades Ecoregion Lecture series, Klamath Falls, OR, June 2016.
- Byrne, K.M.** Grasslands across scales: implications for management and conservation. Chico State University, Department of Geological and Environmental Sciences, February 2015.
- Byrne, K.M.** Flora of Patagonia. Oregon Native Plant Society, Klamath Basin Chapter. November, 2014.
- Byrne, K.M.** and W.K. Lauenroth. Planning for Climate Change in North American Grasslands. CH2M Hill, Englewood, CO, March 2012.
- Byrne, K.M.** and W.K. Lauenroth. Climate Change in North American Grasslands: Coupled Ecosystem and Human Consequences. American Association of Geographers Annual Meeting. Washington, DC, April 2010.

SELECTED PRESENTATIONS

*undergraduate advisee

- Lund, T. S. Anthony, and **K.M. Byrne**. The effects of concept mapping on student learning, attitudes towards chemistry, and metacognitive abilities. 24th Biennial Conference on Chemistry Education, Greeley, CO, August 2016.
- Anthony, S., **K.M. Byrne**, and T. Lund. Metacognitive monitoring judgements across diverse chemistry and STEM contexts. 24th Biennial Conference on Chemistry Education, Greeley, CO, August 2016.
- Decker, S., J. Yost, A. Igou, A., and **K. Byrne**. Two cycling interventions in Klamath Falls (poster). Oregon Academy of Family Physicians, Portland, OR, March 2016.
- Byrne, K.M.**, R. Ongge*, and J. Reid. A first look at the reproductive biology of *Astragalus applegatei*: Oregon's most imperiled plant (poster). Northern California Botanists Symposium, Chico, CA, January 2016.
- Adler, P.B., **K.M. Byrne** and J. Leiker. Can the past predict the future? Experimental tests of historically-based population models. Ecological Society of America, Minneapolis, MN, August 2013.
- Byrne, K.M.** and W.K. Lauenroth. Contrasting effects of precipitation manipulations on species composition and community structure at two sites within the central grassland region, USA. Ecological Society of America, Portland, OR, August 2012.
- Sudderth, E.A., **K.M. Byrne** et al. Microbial community, fungal hyphae, and plant productivity responses to altered rainfall in Western US grasslands. Ecological Society of America, Portland, OR, August 2012.
- Byrne, K.M.** and W.K. Lauenroth. Changes in soil water affect Net Primary Production in the Central Grassland Region. Ecological Society of America, Austin, TX, August 2011.
- Robinson, T.M.P., K.J. La Pierre, M.A. Vadeboncoeur, **K.M. Byrne**, S. Colby, and M.L. Thomey. Seasonal, not annual precipitation drives community productivity across ecosystems. Ecological Society of America, Austin, TX, August 2011.
- Byrne, K.M.** and W.K. Lauenroth. Changes in soil water affect Net Primary Production in the Central Grassland Region. Front Range Student Ecology Symposium, Fort Collins, CO, February 2011.
- Byrne, K.M.**, W.K. Lauenroth and P.B. Adler. Precipitation patterns affect soil water content and ecosystem water balance in grasslands in North America. Ecological Society of America, Pittsburgh, PA, August 2010.
- Byrne, K.M.**, W.K. Lauenroth and C.M. Byrne*. Estimating Aboveground Net Primary Production in Grasslands: a Comparison of Non-Destructive Methods. Society for Range Management Annual Meeting. Denver, CO, February 2010.
- Byrne, K.M.** et al. Modeling matters: Estimating Survival and Breeding Transitions for Bison using a multi-state approach (poster). NSF Integrative Graduate Education and Research Traineeship (IGERT) Project Meeting. Alexandria, VA, May 2009.
- Byrne, K.M.**, and W.K. Lauenroth. The Effect of Exotic Plant Species on Production in Ponderosa Pine Woodlands in the Front Range of Colorado (poster). Front Range Student Ecology Symposium. Fort Collins, CO, February 2008.

AWARDS AND FELLOWSHIPS

- Education Scholar, Ecological Society of America. 2016
- Travel Award, 2012 ESA Meeting. Strategic Environmental Research and Development Program (SERDP). \$500
- Best oral presentation, 2011. Front Range Student Ecology Symposium, Fort Collins, CO. \$200
- Editor's Choice Award for publication in *Journal of Ecology*, Issue 6. November 2011
- Integrative Graduate Education and Research Traineeship (IGERT), Program for Interdisciplinary Mathematics, Ecology, and Statistics at Colorado State University. 2007 – 2009. National Science Foundation. \$60,000+

SERVICE (PROFESSIONAL)

Ad hoc reviewer: *Ecology, Ecosphere, Functional Ecology, Global Change Biology, Journal of Arid Environments, Journal of Ecology, Oecologia, Pedosphere, Perspectives in Plant Ecology, Evolution, and Systematics, Western North American Naturalist*, 2011 - present
Secretary, Native Plant Society of Oregon, Klamath Basin Chapter, 2013 - 2015

SERVICE (OREGON INSTITUTE OF TECHNOLOGY)

Chair, Sustainability Committee, 2016 - present
Faculty Search Committee Member, Physics Positions (2) 2016, Microbiology position (1) 2017
International Committee member, 2015 – present
Assessment Coordinators Committee member, 2015 – present
Scholarship reader, Oregon Tech Foundation, 2015 – present
Honors Program mentor, 2014 - present
Student Assessment Coordinator, Environmental Science Program, 2014 - present
Sustainability Committee member, 2014 – present
Advisor, Biology minor, 2013 - present

PROFESSIONAL DEVELOPMENT

Workshops and Courses

“Scaling Up – Bringing research data into undergraduate classrooms” Data Discovery Faculty Mentoring Network participant, Ecological Society of America and Quantitative Undergraduate Biology Education Synthesis (QUBES), January – May 2016
Process Oriented Guided Inquiry Learning (POGIL) northwest workshop, Lewis and Clark College, Portland, OR, July 2015
Structural Equation Modeling workshop, Ecological Society of America Conference, Sacramento, CA, August 2014
Advanced Structural Equation Modeling workshop, Ecological Society of America Conference, Sacramento, CA, August 2014
Teaching T.A.L.K.S. II: faculty professional development conference on assessing quantitative literacy and communication, Portland State University, May 2014
Monitoring Grasslands, Shrubland and Savanna Ecosystems, Bureau of Land Management workshop, Susanville, CA, July 2013
Information-Theoretic Approaches to Formal Inference workshop, Colorado State University, Nov 2009
How to Communicate Research to the Public workshop, Colorado State University, Dec 2008
US Army Corps of Engineers Wetland Delineation course, Sacramento, CA, Dec 2006

Webinars

“Implementing Sustainable Transportation on Campus” Association for the Advancement of Sustainability in Higher Education (AASHE) webinar, September 2016
“Teaching about Soils as a Critical Resource: Materials and Activities for your Classroom” Science Education Resource Center (SERC) at Carleton College webinar, April 2016
“Engaging Across Boundaries: Campus Sustainability Month- Opportunities to Engage” Association for the Advancement of Sustainability in Higher Education (AASHE) webinar, August 2015

RELATED EXPERIENCE

Ecologist, *CH2M Hill*, Sacramento, CA, 2005 – 2007

Conducted wetland delineations, wetland restorations, vegetation monitoring, and floristic level surveys in numerous habitats throughout the west. Analyzed data and wrote technical reports.

Botany technician, *University of California, Davis*, Lake Tahoe, CA, 2004

Conducted floristic level surveys across sites of varying disturbance within the Lake Tahoe Basin.

Small mammal technician, *Pacific Southwest Research Station, USDA Forest Service*, Teakettle Experimental Forest, CA, 2003

Trapped, handled, and released small mammals using Sherman and Tomahawk live traps in a variety of forest management treatments. Conducted basic vegetation and truffle surveys. Collected fecal samples and analyzed spore content using a dissecting microscope.

Plant pathology technician, *University of California, Davis*, Coast Range, CA, 2002

Collected tissue samples from infected trees across the Northern California Coastal Range. Inoculated samples in the laboratory to identify the fungal pathogen responsible for “Sudden Oak Death”.

PROFESSIONAL SOCIETIES

California Native Plant Society, Ecological Society of America, Native Plant Society of Oregon, Northern California Botanists