

CURRICULUM VITÆ

Kristina E. Young, PhD
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EDUCATION

- Ph.D. **PhD in Ecology & Evolutionary Biology**
University of Texas at El Paso, El Paso, 2017 - 2021
- M.S. **Master of Science in Forestry**
Northern Arizona University, Flagstaff, AZ 2015-2017
- B.A. **Biological Sciences, Botany *cum laude***
Minor in Wildland Restoration
University of Montana, Missoula, MT 2006 – 2010

PEER REVIEWED PUBLICATIONS

- Young, K.E.**, Ferrenberg, S., Reibold, R. Reed, S.C., Swenson, T. Northen, T. Darrouzet-Nardi, A. 2021. Vertical movement of soluble carbon and nutrients from biocrusts to subsurface mineral soils. *Geoderma*. *In Review*
- Young, K.E.**, Reed, S.C., Ferrenberg, S., Faist, A., Winkler, D. Cort, C., Darrouzet-Nardi, A. 2020. Incorporating Biogeochemistry into Dryland Restoration. *BioScience*. doi.org/10.1093/biosci/biab043
- Antoninka, A., Faist, A., Rodriguez-Caballero, E., **Young, K.E.**, Chaudhary, V.B., Condon, L.A., Pyke, D.A. 2020. Biological soil crusts in ecological restoration: emerging research and perspectives. *Restoration Ecology*. doi.org/10.1111/rec.13201
- Young, K.E.**, Bowker M.A., Reed, S.C., Duniway, M., Belnap, J. 2019. Temporal and abiotic fluctuations may be preventing successful rehabilitation of soil-stabilizing biocrust communities. *Ecological Applications* doi:10.1002/eap.1908
- Rudgers, J.A., Dettweiler-Robinson, E., Belnap J., Green, L.E., Sinsabaugh, R.L., **Young, K.E.**, Cort, C.E., Darrouzet-Nardi, A. 2018. Are fungal networks key to dryland primary production? *American Journal of Botany*. doi.org/10.1002/ajb2.1184
- Winkler, D.E., Backer, D.M., Belnap, J., Bradford, J.B., Butterfield, B.J., Copeland, S.M., Duniway, M.C., Faist, A.M., Fick, S.E., Jensen, S.L., Kramer, A.T., Mann, R., Massatti, R.T., McCormick, M.L., Munson, S.M., Parr, S.D., Pfennigwerth, A.A., Pilmanis, A.M., Richardson, B.A., Samuel, E., See, K., **Young, K.E.**, Reed, S.C. 2018. Beyond traditional ecological restoration on the Colorado Plateau. *Restoration Ecology*. doi.org/10.1111/rec.12876
- Wertin, T., **Young, K.E.**, Reed, S.C. 2018. Spatially explicit patterns in a dryland soil respiration and their relationships with climate, whole plant photosynthesis, fine root biomass, and soil carbon and nitrogen pools. *Oikos*. doi.org/10.1111/oik.04935
- Hoover, D., Wilcox, K., **Young, K.E.** 2018. Are experimental trends and rainfall variability

influencing our understanding of ecological sensitivity to drought? Ecosphere.
doi.org/10.1002/ecs2.2088

Young, K.E., Reed, S.C. 2017. Spectrally monitoring the biocrust moss *Syntrichia caninervis*' response to altered precipitation regimes. Scientific Reports.doi.org/10.1038/srep41793

Young, K.E., Grover, H.S., Bowker, M.A. 2016. Altering Biocrusts for an Altered Climate, New Phytologist. doi.org/10.1111/nph.13910

OTHER PUBLICATIONS

2019 **Young, K.E.** Science contributor about dryland ecology for the Science Column at Forbes.com (forbes.com/sites/kristinayoung1)

2018 **Young, K.E.** Reconciling with a Drier Desert. Feature. *The Dust Magazine*

2018 **Young, K.E.** This Shutdown is Hurting Good Science. Commentary. *High Country News* (reprinted in *Mother Jones*)

2018 **Young, K.E.** Defunding science for the Colorado River has consequences. Commentary. *Salt Lake Tribune* (reprinted in the *Moab Times Independent*)

2017 **Young, K.E.** #MySciComm Series: Kristina Young on SciComm and founding the Science Moab radio show. *Ecological Society of America Science Communication Blog*

2017 **Young, K.E.**, Bowker, M.A. Field Guide to Biological Soil Crusts of Bandelier National Monument. View field guide [here](#)

2016 **Young, K.E.**, Antoninka, A., Chuckran P.F, Grover, H.S., Doherty, K.D., Bowker, M.A. Restoring the Living Skin of the Earth: Biocrusts in Dryland Restoration. *Society for Ecological Restoration Newsletter*. 30, 3

RESEARCH & PROFESSIONAL EXPERIENCE

Executive Director & Founder, **Science Moab Engagement Initiative**, a nonprofit science engagement organization, Moab, UT. February 2019 – April 2021 (sciencemoab.org)

Graduate Research Assistant, **Dr. Anthony Darrouzet-Nardi Lab**, University of Texas at El Paso, El Paso, TX. September 2017-present

Affiliate, **Southwest Biological Science Center Canyonlands Research Station**, United States Geological Survey, Moab, UT. May 2017-September 2019

Wyss Scholar, **Utah Forest Program of the Grand Canyon Trust**, Moab, UT. Part time, May 2017-June 2019

Graduate Research Assistant, **Dr. Matthew Bowker Forest-Rangeland Soil Ecology Lab**, Northern Arizona University, Flagstaff, AZ. January 2015-May 2017

Biological Science Technician, **Southwest Biological Science Center Canyonlands Field Station**, United States Geological Survey, Moab, UT. February 2011-December 2014

Biological Monitoring Technician, **Sonoran Desert Inventory and Monitoring Network**, National Park Service, Tucson, AZ. August 2010-January 2011

Laboratory Technician, **Ragan Callaway Plant Community Ecology Laboratory**, University of Montana, Missoula, MT. August 2009-July 2010

AmeriCorps Restoration Intern, **National Park Service Vegetation Department**, Grand Canyon National Park, AZ. February 2009-July 2009

Organic Farm Intern, **Common Ground Organic Farm**, Arlee, Montana. April-September 2005

COMMUNITY-FOCUSED SCIENCE OUTREACH and ENGAGEMENT GRANTS

- 2021 *Recipient*, Society for Science, STEM Action Grant, a grant to feature and monetarily compensate Indigenous scientists and knowledge-holders to appear on the Science Moab radio show, \$5,000
- 2021 *Recipient*, American Society for Cell Biology, Public Engagement Grant, a grant for the Science Certification program that gives outdoor recreation guides trainings in place-based science, \$35,000
- 2020 *Recipient*, Alfred P. Sloan Foundation. A grant for the *Science on Screen*® program that enables participating organizations to host live community events that pair scientists with popular movies. \$8,500
- 2020 *Recipient*, Bjorkman Foundation. A grant to develop the School to Science program, connecting Grand County High School students with scientists for job training opportunities. \$3,000
- 2020 *Recipient*, Grand County Economic Development Grant. A grant to develop the Science Certification program to help diversify tourist offerings in Grand County, UT. \$2,000
- 2020 *Recipient*, Community Foundation of Utah's Social Investors Forum. A grant to develop the School to Science program, connecting Grand County High School students with scientists for job training opportunities. \$35,000
- 2019 *Recipient*, BYU Redd Center for Western Studies Public Programming Award, an award for increasing science access on the Colorado Plateau through the radio show Science Moab. \$1,500
- 2018 *Recipient*, BYU Redd Center for Western Studies Public Programming Award, an award for increasing science access on the Colorado Plateau through the radio show Science Moab. \$2,000

ACADEMIC AWARDS and HONORS

- 2020 *Selected*, COMPASS Scientist Sentinel, a nine-month program to support emerging leaders at the intersection of science, communication, and policy
- 2018 *Selected*, Wyss Scholar Spotlight, selected as a spotlighted scholar for achievement two-

- years after becoming a Wyss Scholar
- 2018 *Recipient*, Society of Ecological Restoration Southwest Chapter Student Registration Scholarship, a scholarship to attend the 2018 SER SW meeting \$100
- 2018 *Recipient*, BLM UT Youth Program, an award from the Utah Bureau of Land Management to attend the Colorado Plateau Native Plant Program meeting \$300
- 2017 *Recipient*, Wally Covington Travel Award, a travel award from the Northern Arizona University School of Forestry \$800
- 2016 *Recipient*, Kay and Irene Hafen Scholarship, academic scholarship from the Northern Arizona University School of Forestry \$1500
- 2016 *Selected*, Wyss Scholar, Program for Conservation Leaders in the American West \$48,000
- 2012 *Recipient*, Star Award, for outstanding work in the Department of Interior \$300
- 2011 *Recipient*, AmeriCorps Education Award, for service with AmeriCorps \$1000
- 2009 *Nominee*, Expanding Horizons International Program, nominated by the University of Montana to explore climate change and indigenous culture in Tromso Norway
- 2006 *Selected*, Davidson Honors College, chosen for academic excellence
- 2006 *Recipient*, Cal Murphy Academic Merit Scholarship, received from the University of Montana for academic achievement \$1000

TEACHING EXPERIENCE

Guest lecturer for the University of Texas's *Plant Ecology* undergraduate course. September 2019

Instructor for the Bureau of Land Management biological soil crust workshop, a 3 day workshop for BLM employees to learn about biocrust ecology and management. June 2017 & March 2019

Instructor for USU's Utah Master Naturalist Program. Presented identification and ecological information on biocrusts in a course on natural history of canyon country. September 2018

Instructor for the Natural History Museum of Utah, a course on biological soil crust for K-12 teachers who teach in biological disciplines. June 2015 & October 2018

Co-Creator of a 2-day course on biological soil crust ecology for high school students at the Canyonlands Research Center. March 2018

Instructor at the Mushroom Cultivation & Application Course on biological soil crust rehabilitation. August 2017

Mentor for an undergraduate student through a research project that resulted in a poster presentation at the undergraduate research symposium at Northern Arizona University. February 2016-May 2017

Guest lecturer for Northern Arizona University's *Intro to Soil Science* undergraduate course. April 2016

Instructor "Biological Soil Crust 101". A course covering the biology, ecology, and taxonomy of biological soil crusts to USGS co-works, supervisors, post-Doctorates, and Bureau of Land Management employees. September 2011

Instructor for the Student Conservation Association Alternative Spring Break Program instructed college students on dryland restoration techniques. April 2009

OUTREACH & SYNERGISTIC ACTIVITIES

Invited Scientist by the Natural History Museum of Utah for the Research Quest Live Q & A. May 2020

Invited Presenter for the Grand Staircase Escalante Partnership Community Lecture Series presenting on dryland research relevant to southern Utah. July 2019

Contractor for Inclusive Community Consulting, a team that educates and advocates for equity in organizations. May 2019

Lead Organizer & Moderator for Science for Guides, an event with informal science talks aimed at informing recreation guides in Moab, UT about science relevant to guiding professions. May 2019

Invited Presenter at the Youth Garden Project Grand County High School field trip about pursuing a career in science. March 2019.

Co-Creator & Co-Lead of the Southwest Chapter of the Society of Ecological Restoration Canyonlands Working Group. A regional group of restoration practitioners that meet to discuss restoration challenges. February 2019

Co-Lead of the Union of Concerned Scientists Local Leaders Program. A leadership development initiative focused on strengthening science advocacy skills. January – November 2019

Creator & Organizer of Science Moab on Tap, informal science communication and outreach events held at a local bar in Moab, UT. Aimed at engaging those often not involved with science. November 2018 - present

Presenter at the Moab Bureau of Land Management Field Office Brown Bag Lecture Series "How do plants get the nutrients they need in our nutrient poor soils?" March 2018

Co-Founder of 500 Women Scientists Moab Pod, a chapter of a national organization that promotes science literacy, outreach, and women's roles in STEM. January 2018-present. Selected as the #podoftheweek September 2018

Co-Founder of Moab, Utah's Use-Rs Group, a group that meets to discuss current topics and techniques in statistics and the statistical software R. February 2017-present

Creator, Producer & Host of KZMU's Science Moab, a weekly science outreach radio show exploring research and management occurring on the Colorado Plateau. January 2017-present

Co-Organizer for the annual Moab Festival of Science. A festival celebrating science and engaging the community with science in Moab, Utah. October 2016-present

Webinar Co-Presenter for the Society of Ecological Restoration "Restoring The Living Skin of the Earth: Biocrusts in Dryland Restoration at Northern Arizona University." August 2016

Presenter at the New Mexico State Office Bureau of Land Management Brown Bag Lecture Series, "Can biological soil crusts be a tool to aid land managers in dryland restoration?" July 2016

Volunteer for endangered fish monitoring trips with the Utah Division of Wildlife Moab Field Office. October 2013.

Volunteer for Beacon After School Program, teaching elementary school children about biological soil crust. September 2012 & April 2013

Volunteer for Grand Canyon National Park revegetating native plants & removing invasive tamarisk trees. August 2010, November 2010, & December 2012

CONTRIBUTED PRESENTATIONS (*denotes an invited talk, †denotes mentees, ° denotes poster)

- 2021 ***Kristina E. Young**, Sasha C. Reed, Scott Ferrenberg, Akasha Faist, Daniel Winkler, Catherine Cort, Anthony Darrouzet-Nardi. "Using biogeochemical insights to restore drylands now and into the future." Ecological Society of America, Virtual (August)
- 2020 Anthony Darrouzet-Nardi, Eva Stricker, Catherine Cort, **Kristina E. Young**, Jennifer Rudgers, Jayne Belnap, Laura Green, Robert Sinsabaugh. "Plant, soil, and biocrust processes controlling nitrogen movement in dryland soils." Ecological Society of America, Virtual (August)
- 2020 Matthew A. Bowker, Chaudhary V. B, Antoninka, A. J., **Kristina E. Young**, et al. "Biocrusts are the most influential soil surface stabilizing force in drylands." Ecological Society of America, Virtual (August)

- 2019 **Kristina E. Young**^o & Hannah Russel. “Expanding the Mission of Rural Science: The role of the 500 Women Science Pod in Southeast Utah.” American Geophysicists Union, San Francisco, CA (December)
- 2019 **Kristina E. Young**^o, Scott Ferrenberg, Robin Reibold, Anthony Darrouzet-Nardi, Sasha Reed. “Determining the contribution of surface soil organisms to subsurface soil fertility and CO₂ efflux in a semi-arid desert.” American Geophysicists Union, San Francisco, CA (December)
- 2019 Daniel E. Winkler^o, Dana M. Backer, Jayne Belnap, John B. Bradford, Bradley J. Butterfield, Stella M. Copeland, Michael C. Duniway, Akasha M. Faist, Stephen E. Fick, Scott L. Jensen, Andrea T. Kramer, Rebecca Mann, Robert T. Massatti, Molly L. McCormick, Seth M. Munson, Steve D. Parr, Alix A. Pfennigwerth, Adrienne M. Pilmanis, Bryce A. Richardson, Ella Samuel, Kathy See, **Kristina E. Young**, Sasha C. Reed. “Opportunities for success: the future of ecological restoration on the Colorado Plateau.” SER2019: 8th World Conference on Ecological Restoration. Cape Town, South Africa (September)
- 2019 Megan Starbuck⁺, **Kristina E. Young**, Osvaldo Sala, Anthony Darrouzet-Nardi, Sasha Reed. “Biocrust optimization of net carbon to varied precipitation pulses”. Colorado Plateau Biennial Conference of Science & Management, Flagstaff, AZ (September)
- 2019 Maddison Casillas, Elannah Venhaus, Mariah Patton, Catherine Cort, **Kristina E. Young**, Jayne Belnap, Jennifer Rudgers, Anthony Darrouzet-Nardi, Eva Stricker. “How do plants affect soil microbial communities across drylands?” Colorado Plateau Biennial Conference of Science & Management, Flagstaff, AZ (September)
- 2019 **Kristina E. Young**, Scott Ferrenberg, Robin Reibold, Anthony Darrouzet-Nardi, Sasha Reed. “Examining the contribution of biological soil crusts to subsurface soil fertility”. Biocrust 4, Melbourne Australia (August)
- 2019 Anthony Darrouzet-Nardi, Eva Dettweiler-Robinson, Catherine E. Cort, **Kristina E. Young**, Grace M. Crain, Laura E. Green, Robert L. Sinsabaugh, Jayne Belnap, Jennifer A. Rudgers. “Testing the fungal loop hypothesis for nitrogen movement from biocrusts to plants in dryland ecosystems.” Ecological Society of America, Louisville, KY (August)
- 2019 Anita Antoninka, Peter Chuckran, **Kristina E. Young**, Root Heather, Kyle Doherty, Matthew Bowker. “Biocrust assemblages and restoration potential in Organ Pipe Cactus National Monument”. Botanical Society of America, Botany 2019. Tucson, Arizona (July)
- 2019 Mikaeala Hoellrich⁺, **Kristina E. Young**, Anthony Darrouzet-Nardi. “Nitrogen fixation in biological soil crust”. Research Experiences for Undergraduates presentation. El Paso, TX (June)
- 2019 Anthony Darrouzet-Nardi, Eva Dettweiler-Robinson, Catherine E. Cort, **Kristina E. Young**, Grace M. Crain, Laura E. Green, Robert L. Sinsabaugh, Jayne Belnap, Jennifer A. Rudgers. “The fungal loop hypothesis for nitrogen movement from biocrusts to plants in dryland ecosystems.” Soil Ecology Society Meeting, Toledo, OH (March)
- 2018 **Kristina E. Young**, Anita Antoninka, Colin Tucker, Matthew A. Bowker. “Restoring With the Right Species: Testing How Species Assemblage Influences Functional.” Society of Ecological Restoration – Southwest Chapter, Flagstaff AZ (September)
- 2018 Matthew A. Bowker, Anita Antoninka, Kyle Doherty, Rebecca Durham, Colin Tucker,

- Lydia Bailey, Henry Grover, **Kristina Young**, Sasha Reed. "Restoring biocrusts: a general strategy and an overview of emerging results." Society of Ecological Restoration-European Conference, Reykjavik, Iceland (September)
- 2018 Daniel E. Winkler, Dana M. Backer, Jayne Belnap, John B. Bradford, Bradley J. Butterfield, Stella M. Copeland, Michael C. Duniway, Akasha M. Faist, Stephen E. Fick, Scott L. Jensen, Andrea T. Kramer, Rebecca Mann, Robert T. Massatti, Molly L. McCormick, Seth M. Munson, Steve D. Parr, Alix A. Pfennigwerth, Adrienne M. Pilmanis, Bryce A. Richardson, Ella Samuel, Kathy See, **Kristina E. Young**, Sasha C. Reed. "Beyond traditional ecological restoration on the Colorado Plateau." Ecological Society of America, New Orleans, LA (August)
- 2018 ***Kristina E. Young**, Anthony Darrouzet-Nardi. "The trouble with putting it back together: Research gaps in dryland restoration." Ecological Society of America, New Orleans, LA (August)
- 2018 David L. Hoover, Melinda D. Smith, Alan K. Knapp, Kevin R. Wilcox, **Kristina E. Young**, Meghan L. Avolio, Sally E. Koerner, Kimberly J. La Pierre. "Ecological responses to extreme climatic events: Linking theory, observations, and experiments." Ecological Society of America, New Orleans, LA (August)
- 2018 Eva Dettweiler-Robinson, Robert L. Sinsabaugh, Jayne Belnap, Jennifer Rudgers, Grace Crain, Cat Cort, **Kristina Young**, Laura Green, Anthony Darrouzet-Nardi. "N transfer from biocrusts to dryland plants driven by water and N availability." European Geophysicist Union, Vienna, Austria (April)
- 2017 Michael Morton[†], **Kristina E. Young**, Matthew A. Bowker (Poster), "Maximizing cyanobacterial filament depth for biocrust cultivation." Northern Arizona University Undergraduate Symposium. Flagstaff, AZ (April)
- 2017 **Kristina E. Young**, Matthew A. Bowker. "Interactions between soil texture, water, and nutrients control patterns of biocrust species assemblage." European Geophysicist Union Vienna, Austria (April)
- 2017 **Kristina E. Young**, Matthew A. Bowker, Sasha C. Reed, Michael Duniway, Jayne Belnap. "Attempts to restore biological soil crust and stabilizing eroding soils in Bandelier National Monument, NM." Colorado Plateau Native Plant Program, Monticello, UT (March)
- 2016 **Kristina E. Young**, Matthew A. Bowker, Sasha C. Reed, Michael Duniway, Jayne Belnap. "Rehabilitating biocrusts and understanding the influence of seasonality on the actively eroding Pinyon-Juniper mesa-top soils in Bandelier National Monument, NM." Soil Science Society of America, Phoenix, Arizona (October)
- 2016 **Kristina E. Young**, Henry S. Grover, Matthew A. Bowker (Early Career Showcase), "Can and should we merge our biocrust rehabilitation efforts with the assisted migration of biocrust." 3rd International Workshop on Biological Soil Crust, Moab, UT (September)
- 2016 **Kristina E. Young**, Matthew A. Bowker, Sasha C. Reed, Michael Duniway, Jayne Belnap. "Rehabilitating biocrusts and understanding the influence of seasonality on the actively eroding Pinyon-Juniper mesa-top soils in Bandelier National Monument, NM." Ecological Society of America, Fort Lauderdale, FL (August)

- 2015 **Kristina E. Young**, Matthew A. Bowker, Sasha C. Reed, Michael Duniway, Jayne Belnap. "Using Biological Soil Crust for Soil Stabilization and Restoration in Bandelier National Monument." Biennial Conference of Science and Management on the Colorado Plateau and Southwest Region, Flagstaff, AZ (October)
- 2015 **Kristina E. Young**, Sasha C Reed. "Biological soil crusts and global change: Spectrally monitoring moss responses to future climate change scenarios." Ecological Society of America, Baltimore, MD (August)
- 2015 **Kristina E. Young**, Matthew A. Bowker, Sasha C. Reed, Michael Duniway, Jayne Belnap. "Focusing on systems for biocrust restoration; A National Monument case study." Colorado Plateau Native Plant Program Retreat, Rio Mesa Field Station, UT (May)

MEETINGS and WORKSHOPS

- 2018 *Co-Organizer & Moderator* - Ecological Society of America INSPIRE Session, "Over The Top Or Over-Reaction? The Science And Management Of Extreme Events In Dry Systems". New Orleans, LA
- 2016 *Lead Organizer & Moderator* - Ecological Society of America IGNITE Session, "The Heartbeat of Drylands: Broad scale changes to a pulse dynamic system". Fort Lauderdale, FL
- 2015 *Co-Organizer* - Biennial Conference of Science and Management on the Colorado Plateau and Southwest Region, Biological Soil Crust Special Session. Flagstaff, AZ

PROFESSIONAL SERVICES

Review Editor Frontiers in Environmental Science | Drylands

Reviewer Ecology, Biogeosciences, New Phytologist, Remote Sensing of Environment, Ecosphere, Science of Total Environment, Aeolian Research, PeerJ, Plant and Soil, Kansas Academy of Science

Service Southwest Chapter of Ecological Society of America Webmaster 2018

Membership Ecological Society of American, Society for Ecological Restoration, American Geophysicist Union