Zoe Amie Pierrat

NASA Postdoctoral Program Fellow, Jet Propulsion Laboratory



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Experience

NASA Postdoctoral Program Fellow, Jet Propulsion Laboratory Graduate Research Fellow, University of California Los Angeles	2023-Present 2018-2023
REU Student, Laboratory for Atmospheric and Space Physics	2016
Education	
Ph.D in Atmospheric and Oceanic Science	2023
University of California Los Angeles	
M.S. in Atmospheric and Oceanic Science	2020
University of California Los Angeles	
B.A. in Physics: Environmental Emphasis, Minor in Chemistry	2017
Colorado College	
Research Fellowships	

NASA Postdoctoral Program Fellow	2023-Present
Jet Propulsion Laboratory, California Institute of Technology	
"Understanding water use efficiency across scales with remote sensing"	
National Science Foundation Graduate Research Fellow Program	2020-2023
University of California Los Angeles	
"Physical and ecophysiological drivers of solar-induced	
chlorophyll fluorescence in the Boreal Forest"	
Center for Diverse Leadership in Science Early Career Fellow	2019-2023
University of California Los Angeles	
Eugene V. Cota-Robles Fellowship	2018-2023
University of California Los Angeles	
Future Investigators in NASA Earth and Space Science and Technology	2020
University of California Los Angeles	
Declined due to conflict with GRFP	

Small Grants for Workshops, Travel, and Service

FLUXNET Co-op Workshop Funding (\$19,000) To host "Linking Optical and Energy Fluxes Workshop"	2023
NASA SCoPE AGU SciAct Affiliate (\$1,670)	2023
Society for Gender Equity in Science University Support (\$6,000) University of California Los Angeles	2019-2023
La Kretz Center + Stunt Ranch Research Grant* (\$2,000)	2023
University of California Los Angeles *Awarded to research mentee Alannah Linden	
Fluxcourse NEON Scholar (\$2,850)	2022
Canadian Studies Graduate Research Award (\$1,000)	2022
University of California Los Angeles International Institute	2022
Departmental Service Grant (\$1,000)	2021
University of California Los Angeles Atmospheric and Ocean Sciences	
Across the STEMverse: An Industry Career Conference Funding	2019
University of California Los Angeles Atmospheric and Ocean Sciences	
Undergraduate Leadership Workshop Attendance	2017
National Center for Atmospheric Research	
Awards	
Awards Journal of Geophysical Research: Biogeosciences Top Cited Article	2023
	2023 2022
Journal of Geophysical Research: Biogeosciences Top Cited Article	
Journal of Geophysical Research: Biogeosciences Top Cited Article Journal of Geophysical Research: Biogeosciences Top Downloaded Article Journal of Geophysical Research: Biogeosciences Top Cited Article WELocal Award for Outstanding Professional Development Event	2022 2021 2021
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Pierrat, Z. A., Magney, T. S., Maguire, A., Brissette, L., Doughty, R., Bowling, D. R., Logan, B., Parazoo, N., Frankenberg, C., Stutz, J. (2024). Seasonal timing of fluorescence and photosynthetic yields at needle and canopy scales in evergreen needleleaf forests.

Ecology, e4402. https://doi.org/10.1002/ecy.4402

Publications (*mentee)

- Pierrat, Z. A., Magney, T. S., Cheng, R., Maguire, A. J., Wong, C. Y. S., Nehemy, M. F., Rao, M., *Nelson, S. E., *Williams, A. F., *Grosvenor, J. A. H., Smith, K. R., Reblin, J. S., Stutz, J., Richardson, A. D., Logan, B. A., & Bowling, D. R. (2024). The biological basis for using optical signals to track evergreen needleleaf photosynthesis. *BioScience*, biad116. https://doi.org/10.1093/biosci/biad116
- **Pierrat, Z.,** Magney, T., Yang, X., Khan, A., Albert, L. (2023). Ecosystem observations from every angle, Eos, 104, https://doi.org/10.1029/2023E0230483. Published on 14 December 2023.
- Nehemy, M. F., **Pierrat, Z.,** Maillet, J., Richardson, A. D., Stutz, J., Johnson, B., Helgason, W., Barr, A. G., Laroque, C. P., & McDonnell, J. J. (2023). Phenological assessment of transpiration: The stem-temp approach for determining start and end of season. *Agricultural and Forest Meteorology*, 331, 109319. https://doi.org/10.1016/j.agrformet.2023.109319
- Poulter, B., Currey, B., Calle, L., Shiklomanov, A. N., Amaral, C. H., Brookshire, E. N. J., Campbell, P., Chlus, A., Cawse-Nicholson, K., Huemmrich, F., Miller, C. E., Miner, K., **Pierrat, Z.,** Raiho, A. M., Schimel, D., Serbin, S., Smith, W. K., Stavros, N., Stutz, J., ... Zhang, Z. (2023). Simulating Global Dynamic Surface Reflectances for Imaging Spectroscopy Spaceborne Missions: LPJ-PROSAIL. *Journal of Geophysical Research: Biogeosciences*, *128*(1), e2022JG006935. https://doi.org/10.1029/2022JG006935
- Pierrat, Z. A., Bortnik, J., Johnson, B., Barr, A., Magney, T., Bowling, D. R., Parazoo, N., Frankenberg, C., Seibt, U., & Stutz, J. (2022). Forests for forests: Combining vegetation indices with solar-induced chlorophyll fluorescence in random forest models improves gross primary productivity prediction in the boreal forest. *Environmental Research Letters*, 17(12), 125006. https://doi.org/10.1088/1748-9326/aca5a0
- Cheng, R., Magney, T. S., Orcutt, E. L., **Pierrat, Z.,** Köhler, P., Bowling, D. R., Bret-Harte, M. S., Euskirchen, E. S., Jung, M., Kobayashi, H., Rocha, A. V., Sonnentag, O., Stutz, J., Walther, S., Zona, D., & Frankenberg, C. (2022). Evaluating photosynthetic activity across Arctic-Boreal land cover types using solar-induced fluorescence. *Environmental Research Letters*, *17*(11), 115009. https://doi.org/10.1088/1748-9326/ac9dae
- Pierrat, Z., Magney, T., Parazoo, N. C., Grossmann, K., Bowling, D. R., Seibt, U., Johnson, B., Helgason, W., Barr, A., Bortnik, J., Norton, A., Maguire, A., Frankenberg, C., & Stutz, J. (2022). Diurnal and Seasonal Dynamics of Solar-Induced Chlorophyll Fluorescence, Vegetation Indices, and Gross Primary Productivity in the Boreal Forest. *Journal of Geophysical Research: Biogeosciences*, 127(2), e2021JG006588. https://doi.org/10.1029/2021JG006588
- Nelson, P. R., Maguire, A. J., Pierrat, Z., Orcutt, E. L., Yang, D., Serbin, S., Frost, G. V., Macander, M. J., Magney, T. S., Thompson, D. R., Wang, J. A., Oberbauer, S. F., Zesati, S. V., Davidson, S. J., Epstein, H. E., Unger, S., Campbell, P. K. E., Carmon, N., Velez-Reyes, M., & Huemmrich, K. F. (2022). Remote Sensing of Tundra Ecosystems Using High Spectral Resolution Reflectance: Opportunities and Challenges. *Journal of Geophysical Research: Biogeosciences*, 127(2). https://doi.org/10.1029/2021JG006697
- Maguire, A. J., Eitel, J. U. H., Magney, T. S., Frankenberg, C., Köhler, P., Orcutt, E. L., Parazoo, N. C., Pavlick, R., & **Pierrat, Z. A.** (2021). Spatial covariation between solar-induced

- fluorescence and vegetation indices from Arctic-Boreal landscapes. *Environmental Research Letters*, *16*(9), 095002. https://doi.org/10.1088/1748-9326/ac188a
- Pierrat, Z., Nehemy, M. F., Roy, A., Magney, T., Parazoo, N. C., Laroque, C., Pappas, C., Sonnentag, O., Grossmann, K., Bowling, D. R., Seibt, U., *Ramirez, A., Johnson, B., Helgason, W., Barr, A., & Stutz, J. (2021). Tower-Based Remote Sensing Reveals Mechanisms Behind a Two-phased Spring Transition in a Mixed-Species Boreal Forest. *Journal of Geophysical Research: Biogeosciences*, 126(5), e2020JG006191. https://doi.org/10.1029/2020JG006191

Data Published

- **Pierrat, Z.** (2023). Evergreen needleleaf forest pigment, MONI-PAM, eddy-covariance, and tower-scale remote sensing data across four different sites [Data set]. In BioScience. Zenodo. https://doi.org/10.5281/zenodo.10048770
- **Pierrat, Z.,** Troy Magney, David R. Bowling, Bruce Johnson, Alan Barr, & Jochen Stutz. (2022). Boreal forest tower-based remote sensing data (solar-induced fluorescence and reflectance-based vegetation indices) [Data set]. Zenodo. https://doi.org/10.5281/zenodo.7231157
- **Pierrat, Z.,** & Jochen Stutz. (2022). Tower-based solar-induced fluorescence and vegetation index data for Southern Old Black Spruce forest (Version 2) [Data set]. Zenodo. https://doi.org/10.5281/zenodo.7596931
- **Pierrat, Z.,** Johnson, B., Helgason, W., Barr, A., Stutz, J. (2022). Gross primary production and environmental observations for a mature black spruce site located in central Saskatchewan, Canada, for the period Sep-2018 to Dec-2020. Federated Research Data Repository. https://doi.org/10.20383/102.0550
- **Pierrat, Z.,** Troy Magney, & Jochen Stutz. (2021). Tower-based remote sensing data for understory vegetation at Delta Junction, Alaska 2019-2020 [Data set]. Zenodo. https://doi.org/10.5281/zenodo.5806488
- **Pierrat, Z.,** Johnson, B., Helgason, W., Barr, A., Stutz, J. (2021). Environmental and gross primary production observations for a mature black spruce site located in central Saskatchewan, Canada. Federated Research Data Repository. https://doi.org/10.20383/101.0300
- **Pierrat, Z.,** & Stutz, J. (2021). Tower-based remote sensing data for mixed-species boreal forest spring transition 2019 and 2020 [Data set]. Zenodo. https://doi.org/10.5281/zenodo.4637567

Teaching Experience

Visiting Instructor, Physics Department, Colorado College
PC 242: Physics for the Physical Sciences II

Teaching Assistant, Atmospheric and Oceanic Sciences Department, UCLA
AOS 90: Introduction to Undergraduate Research in Atmospheric and Oceanic Science

AOS 2: Air Pollution	
Graduate Bridge Program	
Tutor, Graduate Writing Center, UCLA	2020-2023
Garden Educator, Mildred E. Mathias Botanical Gardens, UCLA	2020-2023
Paraprofessional, Physics Department, Colorado College	2017-2018
PC 141: Physics for the Life Sciences I	
PC 142: Physics for the Life Sciences II	
PC 241: Physics for the Physical Sciences I	
PC 242: Physics for the Physical Sciences II	
Tutor, Quantitative Reasoning Center, Colorado College	2015-2017
Undergraduate physics, calculus, chemistry	
Grader, Physics Department, Colorado College	2015-2017

Mentoring

Jet Propulsion Laboratory, California Institute of Technology Summer Intern Mentees

Greta Schultz: Comparison of NEON Biological Temperature with ECOSTRESS Land Surface Temperature

University of California Los Angeles Undergraduate Research Mentees

Alannah Linden: Tracking changes in photosynthetic activity of native California plants during the summer drought

Jason Jewik: Automated Phenocam Snow Flagging with Deep Learning:

https://pypi.org/project/phenocam-snow/

Lea Baskin Monk: Modeling boreal forest photosynthesis using the Soil Canopy Observation, Photochemistry and Energy Fluxes radiative transfer model.

Alexandra Ramirez: Evaluating the impact of snow cover on remotely sensed images of a Boreal conifer forest

Bowdoin College Undergraduate Honors Thesis Research Mentees

Sara Nelson: Tracking photosynthetic seasonality at needle and forest scales in pines experiencing mild winters

Jeremy A. Hoyne Grosvenor: Photosynthetic phenology of a boreal spruce forest observed at stand and needle scales

Anneka Williams: Conifer forest photosynthetic seasonality: Exploring the effect of winter severity and the efficacy of different remote sensing methodologies.

Presentations

Oral (*invited)

• *From leaf to orbit: how multi-scale remote sensing observations can advance global ecology. (2024). American Geophysical Union Fall Conference, Washington DC.

- *Proximal Remote Sensing: An essential tool for bridging the gap in ecosystem monitoring and global ecology. (2024). American Geophysical Union Fall Conference, Washington DC.
- Evaluation of ECOSTRESS Collection 2 Evapotranspiration, diurnal dynamics of carbon and water cycling, implications for Surface Biology and Geology Mission. (2024). Surface Biology and Geology Technical Interchange Meeting, Washington DC.
- *What the color red can tell us about plant health in a changing climate. (2024). Colorado College Physics Department Symposium, Colorado Springs, CO.
- *Seasonal timing of fluorescence and photosynthetic yields at needle and canopy scales in evergreen needleleaf forests. (2024). EARSeL Workshop on Imaging Spectroscopy, Valencia, Spain.
- Exploring Diurnal and Seasonal Dynamics of Water Use Efficiency Using Solar Induced Chlorophyll Fluorescence and Thermal Infrared Radiation. (2023). American Geophysical Union Fall Conference, San Francisco, CA.
- *Near-surface remote sensing for an improved understanding of ecosystem flux dynamics. (2023). Center for Climate Science Seminar, Virtual.
- Exploring Diurnal and Seasonal Dynamics of Water Use Efficiency Using Solar Induced Chlorophyll Fluorescence and Thermal Infrared Radiation. (2023). NASA Postdoctoral Program Symposium, Virtual.
- Spatiotemporal dynamics of water-use-efficiency with thermal infrared radiation and solar-induced chlorophyll fluorescence. (2023). OCO Science Team Meeting, Virtual.
- Spatiotemporal dynamics of water-use-efficiency with thermal infrared radiation and solar-induced chlorophyll fluorescence. (2023). ECOSTRESS Science Team Meeting, Ventura, CA.
- Outcomes of the community workshop on linking optical and energy fluxes:
 Opportunities, challenges, and a path forward. (2023). Ecological Society of America, Portland. OR.
- *The biological basis for using optical signals to track evergreen needleleaf photosynthesis. (2023). Northern Arizona University, Flagstaff, AZ.
- *The biological basis for using optical signals to track evergreen needleleaf photosynthesis. (2023). NASA Carbon Club, Jet Propulsion Laboratory, Los Angeles, CA.
- *The biological basis for using optical signals to track evergreen needleleaf photosynthesis. (2023). CPEO Workshop, National Centre for Earth Observation, UK.
- Forests for forests: combining vegetation indices with solar-induced chlorophyll fluorescence in random forest models improves gross primary productivity prediction in the boreal forest. (2022). American Geophysical Union Fall Conference, Chicago, IL.
- *Remote sensing and stem-radius measurements for understanding boreal forest spring rehydration, transpiration, and photosynthesis. (2022). NASA OCO-2/3 Science Team Meeting, Virtual.
- Forests for forests: combining vegetation indices with solar-induced chlorophyll fluorescence in random forest models improves gross primary productivity prediction in the boreal forest. (2022). AmeriFlux Annual Meeting, University of Michigan Biological Station, MI.
- *Linking NEON data with remote sensing and plant ancillary data to monitor, evaluate, and scale photosynthesis in evergreen needle-leaf forests. (2022). NEON Science PALOOZA, Virtual.

- Tower-based remote sensing for understanding boreal forest carbon dynamics. (2022).
 Department of Atmospheric and Oceanic Sciences Seminar, University of California Los Angeles.
- Tower-based remote sensing for understanding boreal forest carbon dynamics. (2022).
 NASA Carbon Club, Virtual
- Tower-based measurements of SIF and GPP lead to an improved understanding of boreal forest dynamics and can inform modeling efforts. (2022). NASA OCO-2 Science Team Meeting, Virtual.
- *Radiative transfer and viewing geometry considerations for remote sensing as a proxy for carbon uptake in boreal ecosystems. (2021). American Geophysical Union Fall Conference, New Orleans, LA. https://doi.org/10.1002/essoar.10509278.1
- Physical and ecophysiological controls on the relationship between solar-induced chlorophyll fluorescence and gross primary productivity across diurnal and seasonal scales in the boreal forest. (2021). American Geophysical Union Fall Conference, New Orleans, LA. https://doi.org/10.1002/essoar.10509279.1
- *The use of tower-based spectrometers to explore the physical and ecophysiological drivers of SIF in evergreen ecosystems. (2021). SpecNet Community Meeting, Virtual.
- A mechanistic explanation for linearity and non-linearity between SIF and GPP at varying temporal scales. (2021). NASA Arctic-Boreal Vulnerability Experiment Science Team Meeting, Virtual. ABoVE SciComm challenge winner.
- Annual cycle of Solar-Induced Chlorophyll Fluorescence in the Canadian Boreal Forest.
 (2019). American Geophysical Union Fall Conference, San Francisco, CA.
- Estimating exospheric hydrogen density using Lyman-alpha irradiance measurements from SOLSTICE. (2017). Young Student Symposium on Atmospheric Research, Colorado State University, CO.
- Estimating exospheric hydrogen density using Lyman-alpha irradiance measurements from SOLSTICE. (2017). Colorado College Physics Senior Seminar, Colorado Springs, CO.

Poster

- Scaling Diurnal and Seasonal Dynamics of Water Use Efficiency from the Site to the Globe. (2024). International Carbon Dioxide Conference, Manaus, Brazil.
- Scaling Diurnal and Seasonal Dynamics of Water Use Efficiency from the Site to the Globe. (2024). GEWEX Open Science Conference, Sapporo, Japan.
- Fluxes in the Spotlight: Advancing Earth System Science with Proximal Remote Sensing.
 (2024). EARSeL Workshop on Imaging Spectroscopy, Valencia, Spain.
- Linking thermal infrared radiation and solar-induced chlorophyll fluorescence data to water-use-efficiency. (2023). JPL Poster Day, Pasadena, CA.
- The biological basis for using optical signals to track evergreen needleleaf photosynthesis. (2023). ABoVE Science Team Meeting, San Diego, CA.
- Remote sensing proxies of fluorescence yield for tracking the start- and end of winter dormancy in evergreen forests. (2022). NASA Arctic-Boreal Vulnerability Experiment Science Team Meeting, Fairbanks, AK.
- Radiative transfer and viewing geometry considerations for the SIF/GPP relationship. (2020). American Geophysical Union Fall Conference, Virtual. https://doi.org/10.1002/essoar.10506244.1 Outstanding Student Presentation Award Winner.
- Remote Sensing of the Onset of Spring Photosynthesis in the Canadian Boreal Forest. (2020). NASA Arctic-Boreal Vulnerability Experiment Science Team Meeting, Virtual Meeting. ABoVE SciComm challenge winner.

- One year of PhotoSpec Solar-Induced Chlorophyll Fluorescence observations in the Canadian Boreal Forest. (2019). NASA Terrestrial Ecology Science Team Meeting, University of Maryland College Park, MD.
- Estimating exospheric hydrogen density using Lyman-alpha irradiance measurements from SOLSTICE. (2016). American Geophysical Union Fall Conference, San Francisco, CA
- Wintertime Boundary Layer Climate of Flea Bay, Banks Peninsula. (2015). Frontiers Abroad Research Colloquium, University of Canterbury, New Zealand.

Public Outreach and Media

- Podcast Guest on Further Together the ORAU Podcast. Episode "Of rugrats, plant water usage and climate change: A conversation with Zoe Pierrat, Ph.D., NASA Postdoctoral Fellow" (2024)
- Public response on the <u>Federal Strategy to Advance Measurement and Monitoring</u>
 <u>Greenhouse Gas Measurement and Monitoring for the Agriculture and Forest Sectors</u>
 (2023)
- UCLA College Women's History Month Spotlight (2023)
- Ameriflux Year of Remote Sensing Tutorial Series, "Remote Sensing Fundamentals" (2023)
- Feature on Equity and Empowerment for UCLA College Magazine (2022)
- Invited contributor to the DendroHub blog, "<u>Linking Dendrometers with Remote Sensing for Assessing Forest Phenology</u>" (2022)
- Garden Educator for 'Festival of Trees' at UCLA's Botanical Gardens (2022)
- Guest lecture on "Creating Effective Figures", UCLA (2022)
- Interviewee for "Sensing Change in the Tundra" Press Release (2022)
- Guest lecture for "Earth From Space", University of California Davis (2022)
- Lesson Educator for "Earth's mysterious red glow" <u>TED-Ed Lesson</u> (2021)
- Student Spotlight in <u>UCLA's Atmospheric and Oceanic Sciences Newsletter</u> (2021)
- Guest Lecture "Physical and Ecophysiological Drivers of Solar-Induced Chlorophyll Fluorescence in the Boreal Forest." for Organization for Cultural Diversity in Science Graduate Research Outreach, UCLA (2021)
- Invited interviewee for Sustaining US Episode 106 The Climate Protest (2020)
- Invited Lecture "Plants and Climate" at Explore Your Universe, UCLA (2020)
- Lecture on "The use of Solar-Induced Chlorophyll Fluorescence to study plant productivity in the Canadian Boreal Forest." Plant Sciences Seminar Series, UCLA (2020)
- Booth Leader, Explore Your Universe, UCLA (2020)
- Panelist on Women in STEM for Equity Inclusion & Diversity Day, UCLA (2020)
- Guest Lecture on "The use of Solar-Induced Chlorophyll Fluorescence to study plant productivity and change." Center for Diverse Leadership in Science Fall Research and Outreach Symposium, University of California Los Angeles, CA. (2019)
- Volunteer, Skype-A-Scientist (2018, 2019)
- Booth Leader, Explore Your Universe, UCLA (2019)
- Event Organizer, Project Scientist visit to Society of Women Geoscientists, UCLA (2019)
- Panelist on Women in STEM for Equity Inclusion & Diversity Day, UCLA (2019)
- Volunteer, City of STEM, Los Angeles, CA (2018)
- Volunteer, Cool Science, Colorado Springs, CO (2016-2018)

Service

Peer Review (Web of Science Profile)

Agricultural and Forest Meteorology (1), Biogeosciences (3), Current Climate Change Reports (1), Ecology (1), Environmental Research Letters (1), Geophysical Research Letters (2), Global Change Biology (3), Global Ecology and Biogeography (2), Journal of Geophysical Research Atmospheres (1), Journal of Hydrology (1), New Phytologist (2), Remote Sensing of Environment (2)

Committees and Leadership

JPL Earth Science Section Postdoc Liaison	2024-Present
Session Organizer for AGU Session on	2024
"Constraining Greenhouse Gas Exchange Processes	
Using Remote Sensing and In Situ Observations"	
Lead Organizer for Linking Optical and Energy Fluxes Workshop	2023
Organizing Committee Member, AmeriFlux Year of Remote Sensing	2022-2023
Student Faculty Representative, AOS Department, UCLA	2021-2022
AOS Faculty Search Committee Member, UCLA	2021-2022
Head of Mentorship, Women in STEM: Breaking Barriers, UCLA	2019-2022
Member, Queers in STEM, UCLA	2019-2022
Co-Founder, Chief Operations Officer, Society for Gender	2019-2022
Equity in Geoscience, UCLA	
Session Moderator, ABoVE Science Team meeting, Virtual	2021
AOS Awards Committee Member, UCLA	2020-2021
AOS Space Physics Faculty Search Committee Member, UCLA	2020-2021
Planning Committee Member,	2020-2021
Women in STEM: Breaking Barriers, UCLA	
Outreach Chair, Society for Gender Equity in Geoscience, UCLA	2019-2020
Vice President, Chi Epsilon Pi	2019-2020
Atmospheric Science Honor Society, UCLA	
Media Director, Chi Epsilon Pi	2018-2019
Atmospheric Science Honor Society, UCLA	
Co-Founder and Senior Advisor, Women in STEM, Colorado College	2017
Chief Operations Officer, Kappa Alpha Theta, Colorado College	2015-2016
Resident Advisor, Residential Life and Housing, Colorado College	2014-2016
Facility Management Director, Kappa Alpha Theta, Colorado College	2014-2015
Rho Lambda, Kappa Alpha Theta, Colorado College	2014

Additional Training

Science/Research	
NASA Transform to Open Science (TOPS) 101	2024
NASA Summer School on Satellite Observations and Climate Models,	2023
JPL Center for Climate Sciences and the Keck Institute for Space Studies,	
California Institute of Technology, Pasadena, CA	

Fluxcourse, Niwot Ridge, Colorado	2022
New Advances in Land Carbon Cycle Modeling Training Course, Virtual through Northern Arizona University	2022
Undergraduate Leadership Workshop,	2017
National Center for Atmospheric Research, Boulder, CO	
Frontiers Abroad Field Program and Study Abroad in Earth Systems Science,	2015
University of Canterbury, Christchurch, New Zealand	
Tooching/Montoring/Communications	
Teaching/Mentoring/Communications	
Research Mentor Training Summer Course, CIRTL	2021
Tips for TAs Suddenly Supporting Synchronous Online Learning, CIRTL	2020
Reclaiming STEM: A diverse and inclusive science	2019, 2020
communication workshop	
Environmental Leadership Program:	2019
Emerging Leaders for the Emerging Future, UCLA	
Across the STEMverse: An Industry Career Conference	2019
Communicating Science Effectively in Today's World, workshop, UCLA	2019

References

Dr. Kerry Cawse-Nicholson

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