Christian Lee John, Ph.D.

Postdoctoral scholar
Burkepile Lab
University of California, Santa Barbara

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Education

University of California, Davis – Ph.D. Ecology – September 2022
The Pennsylvania State University – M.Sc. Ecology – December 2016
The Pennsylvania State University – B.S. Biology – December 2013

Professional Experience

Research

University of California, Santa Barbara Marine Science Institute — Oct 2022 – Present
Postdoctoral scholar; exploring land-sea connections in a tropical island/coral reef system under dynamic land use and precipitation regimes. PI: Deron Burkepile, UCSB MSI.

University of California, Davis Department of Wildlife, Fish, and Cons. Biol. — Sep 2017 – Sep 2022
Graduate student; evaluating drivers and outcomes of migration in Sierra Nevada bighorn sheep. Combining multiple levels of remote sensing to explore factors affecting abiotic and biotic landscape phenology, and relationships among snowmelt and vegetation phenology, and sheep movement, reproduction timing, and reproductive success. PI: Eric Post, UC Davis WFCB.

Proyecto La Paleohidrología del Valle de Teotihuacán — Jul, Dec 2017
Remote sensing specialist for Mesoamerican paleohydrology and archeology project investigating water management and retention practices of ancient societies, using structure-from-motion multispectral mapping of the Teotihuacan archaeological zone, ejido land, and private farms. PI's: Christian John and Andrés Mejía-Ramon; UC Davis WFCB and PSU Dept. of Geography.

Penn State Mobile Geospatial Systems Group — Jan 2017 – July 2017
Remote sensing specialist; trained new remote pilots to build and pilot unmanned aerial systems. Compared multiple remote sensing approaches to fine resolution surface relief modeling. PI: Doug Miller, Department of Geography.

Penn State Department of Biology and Polar Center — Aug 2014 – Dec 2016
Graduate student; studied impacts of climate on Arctic caribou migration. Monitored plant phenology at multiple scales including species-level observations, a homemade unmanned aerial system, a time-lapse camera network, and multispectral regional satellite data. PI: Eric Post, Dept. of Biology.

Teaching

Instructor
R-DAVIS (UC Davis): Intro to Data Analysis and VISualization; lab — Fall 2020

Teaching Assistant

R-DAVIS (UC Davis): Intro to Data Analysis and VISualization; lab	Winter 2019, 2020
ENT 117 (UC Davis): Longevity; lecture	Summer 2018
PLS 147 (UC Davis): California Plant Communities; lecture	Spring 2018
WFC 198 (UC Davis): Climate Change Ecology; discussion	Winter 2018
BIOL 415 (Penn State): Ecotoxicology; lecture	Spring 2014, 2017
BIOL 220 (Penn State): Population and Community Biology; lab	Spring 2015, 2017
BIOL 110 (Penn State): Basic Concepts and Biodiversity; lab	Summer, Fall 2013

Outreach

Audubon Society (Central Sierra chapter) March 2022
Presentation and community discussion on ecology and conservation of Sierra Nevada bighorn sheep.

APPLES – Arctic Plant Phenology Learning through Engaged Science Summer 2016, '18, '21
Led week-long field training in southwest Greenland study site. Guided teachers through ecological field data collection. Contributed in workshop to help K-12 teachers develop lesson plans focused on Arctic ecological research.

Community Café: Understanding the Science of Climate Change Feb 2017
Organized and moderated climate science discussion through Central PA Community Housing, focused on understanding the scientific approaches to climate change.

Photography in Biology High School Curriculum Development and Instruction Oct 2015
Designed and taught daylong classroom activity for high school biology and photography students to practice applications of time-lapse and aerial photography in biological research.

Peer-Reviewed Publications

John, C., Avgar, T., Rittger, K., Smith, J.A., Stephenson, L.W., Stephenson, T.R., and Post, E. 2024. Pursuit and escape drive fine-scale movement variation during migration in a temperate alpine ungulate. *Scientific Reports*. 14(15068). [article]

Post, E., and 11 others (incl. **John, C.**). 2023. Large herbivore diversity slows sea ice–associated decline in arctic tundra diversity. *Science*. 380(6651). [article]

John, C., Kerby, J., Stephenson, T.R., and Post, E. 2023. Fine-scale landscape phenology revealed through time-lapse imagery: implications for conservation and management of an endangered migratory herbivore. *Remote Sensing in Ecology and Conservation*. 9(5) 628-640. [article]

John, C. and Post, E. 2022. Projected distribution of Nearctic Bovidae signals the potential for reduced overlap with protected area. *Ecology and Evolution*. 12(8):e9189. [article]

Strong, D. and **John, C**. 2022. Moisture and Distribution of a Keratophagous Moth, *Tinea occidentella*. *Ecological Entomology*. 47(5) 822-830. [abstract; contact for article]

Berger, D., German, D.W., **John, C.**, Hart, R., Stephenson, T.R., and Avgar, T. 2022. Seeing is be-Leaving: Perception informs migratory decisions in Sierra Nevada Bighorn Sheep (*Ovis canadensis sierrae*). *Frontiers in Ecology and Evolution*. 10:742275. [article]

John, C. and Post, E. 2022. Seasonality, niche management, and vertical migration in landscapes of relief. *Ecography*. E05774. [article]

Vuorinen, K. and 41 others (incl. **John, C.**) 2022. Growth rings show limited evidence for ungulates' potential to suppress shrubs across the Arctic. *Environmental Research Letters*. 17(3) 034013. [article]

John, C., Shilling, S., and Post, E. 2021. drpToolkit: An automated workflow for aligning and analyzing vegetation and ground surface time series imagery. *Methods in Ecology and Evolution*. 13(1) 54-59. [article]

Eikelenboom, M., Higgins, R.C., **John, C.**, Kerby, J., Forchhammer, M.C., and Post, E. 2021. Contrasting dynamical responses of sympatric caribou and muskoxen to winter weather and earlier spring green-up in the Arctic. *Food Webs*. 27 e00196. [abstract; contact for article]

John, C. Miller, D., and Post, E. 2020. Regional variation in green-up timing along a caribou migratory corridor: Spatial associations with snowmelt and temperature. *Arctic, Antarctic, and Alpine Research*. 52(1) 416-423. [article]

Myers-Smith, I.H., Kerby, J.T., Phoenix, G.K., Bjerke, J.W., Epstein, H.E., Assmann, J.A., **John, C.**, et al. 2020. Complexity revealed in the greening of the Arctic. *Nature Climate Change*. 10(2) 106-117. [article]

Post, E., Beyen, E., Bøving, P., Higgins, R.C., **John, C.**, Kerby, J., Pedersen, C., and Watts, D. 2019. Unusual late July observation of a fledgling Lapland longspur in low arctic Greenland following the late spring of 2018. *Arctic Science*. 5(3) 161-166. [article]

Blazanin, N., Son, J., Craig-Lucas, A., **John, C.**, Breech, K., Son, J., Podolsky, M., and Glick, A.B. 2017. ER Stress and Distinct Outputs of the IRE1α RNase Control Proliferation and Senescence in Response to Oncogenic Ras. *Proceedings of the National Academy of Sciences*. 114(37) 9900-9905. [article]

Van den Bogaard, E.H., Podolsky, M.A., Smits, J.P., Cui, X., **John, C.**, et al. 2015. Genetic and Pharmacological Analysis Identifies a Physiological Role for the AHR in Epidermal Differentiation. *Journal of Investigative Dermatology*. 135(5) 1320-28. [article]

Other Publications

Book chapters

John, C. 2024. North American tundras: Imperiled landscapes at a continent's latitudinal and altitudinal extremes. In *Global Biome Conservation and Global Warming: Impacts on Ecology and Biodiversity*. G. L. Demolin-Leite Sr., P. Török, and J. C. B. Barrionuevo Sr. Editors. Elsevier. In press.

Theses and dissertations

John, C. 2022. Multi-scale spatial ecology of an endangered alpine migrant, Sierra Nevada bighorn sheep. Ph.D. Dissertation, University of California, Davis.

John, C. 2016. Against the Spring Wave: Ungulate Migration Phenology in a Changing Arctic. M.Sc. Thesis, Penn State University. [thesis]

Technical reports

Mejía-Ramón, A.G. and **John, C.** 2017. Informe Preliminar sobre las Actividades de Teledetección Aérea en la Zona Monumental Arqueológica de Teotihuacan, Verano 2017. Technical report submitted to the Consejo de Arquelogía, October 2017, Instituto Nacional de Antropología e Historia, México D.F.

Software

John, C. Shilling, F., and Post, E. 2021. drpToolkit: Digital repeat photography imagery management and analysis. Python package version 1.0.0. <https://github.com/JepsonNomad/drpToolkit>.

John, C. Bolas, E., and Laca, E. 2020. ggeAdmit: Streamlining the holistic review process. R package version 0.0.1. <https://github.com/ggeDCAA/ggeAdmit>.

John, C. 2017. phenomap: Projecting satellite-derived phenology in space. R package version 1.0.1. <https://CRAN.R-project.org/package=phenomap>.

Presentations

Listed in order of recency.
IO = Invited oral presentation; CO = Contributed oral presentation; CL = Contributed lightning talk;
IP = In-person poster presentation; VP = Virtual poster presentation

Ecological Society of America Summer 2023 Meeting [CO] Aug 2023
John, C., Neumann, K., Adam, T., Donovan, M., and Burkepile, D. *Land use change, nutrient pollution, and sedimentation seasonality in a South Pacific coral reef island system*

UC Santa Barbara Dept of Ecology, Evolution, and Marine Biol. [IO] Oct 2022
John, C. *Seasonality and predictability of community response to anthropogenic change*

Aarhus Universitet Department of Biology [IO] Mar 2022
John, C. *Linking food on the ground to a satellite pixel: Phenological insights from a time-lapse camera network*

American Geophysical Union Fall 2021 Meeting [IP] Dec 2021
John, C., Stephenson, T.R., and Post, E. *Detecting Plant Phenological Response to Snowmelt on "Barren" Alpine Landscapes*

American Geophysical Union Fall 2020 Meeting [VP] Dec 2020
John, C., Stephenson, T., and Post, E. *Associations among topography, snowmelt, and plant green-up phenology, revealed through a time-lapse camera network*

UC Davis Polar Forum Mini Symposium [CO] Nov 2019
John, C. and Post, E. *Spatial disparity in drivers of landscape phenology regulates regional green-up dynamics*

American Geophysical Union Fall 2018 Meeting [CO] Dec 2018
John, C., Stephenson, T., and Post, E. *Long-term projections for migration phenology in Sierra Nevada bighorn sheep*

Ecological Society of America Summer 2017 Meeting [CO] Aug 2017
John, C. and Post, E. *Arctic green wave dynamicity and its implications for migration phenology*

American Geophysical Union Fall 2016 Meeting [CO] Dec 2016
John, C. and Post, E. *Dissecting drivers of Arctic plant phenology across scales in time and space*

GIS Day at Penn State, State College, PA [CL] Nov 2015
John, C. *Using UAV remote sensing in Arctic ecological research*

The Polar Center at Penn State, State College, PA [CO] Feb 2015
John, C. and Post, E. *Climate change, the green wave, and Arctic ungulate migratory timing*

Peer Reviews

Peer reviews provided for manuscripts in the following publications (listed alphabetically):

Animal Migration; Arctic, Antarctic, and Alpine Research; Biological Conservation; Ecography; Ecology; Ecology Letters; Remote Sensing in Ecology and Conservation; Scientific Data; Scientific Reports

Other Professional Service

Guest Lecturer

WFC 168 (UC Davis): *Snow, plant, and wild sheep phenol. in CA mtns*	Feb 2022
WFC 168 (UC Davis): *The future of phenology for Sierra bighorn*	Feb 2021
WFC 010 (UC Davis): *Movement ecology*	Mar 2019
WFC 198 (UC Davis): *Resources, reproduction, and trophic mismatch*	Feb 2019
WFC 010 (UC Davis): *Animal migration*	Nov 2017, Feb 2020
WFS 585 (Penn State): *Phenoscape: Analyzing the green wave in R*	Mar 2017
GEOG 455 (Penn State): *Remote sensing in migration ecology*	Apr 2016

Statistical Support Group co-coordinator — Spring 2022

Providing advice and leading discussion about experimental design, statistics, and related issues in an informal weekly graduate student meet-up.

Admissions Planning Committee student representative — Fall 2021 – 2022

Revising and implementing holistic review for graduate admissions in the UC Davis Graduate Group in Ecology.

Admissions and Awards Subcommittee student member — Spring 2019 – 2022

Analyses of utility and effects of holistic review on graduate admissions; developed admissions reviewer assignment software; organized online-format admissions and reviewer training for remote learning during COVID-19 pandemic. Formally, graduate student researcher in Fall 2019.

Open Lab Meeting co-coordinator — Fall 2020 – 2022

Graduate student led- and attended "lab meeting" of weekly seminars within the graduate group community. No professors, relaxed atmosphere for candid presentation feedback from peers.

Davis R Users' Group co-coordinator — Fall 2020 – 2022

Weekly working group of R coding enthusiasts across undergraduate, graduate, and post-doc levels of training. Troubleshooting, workshops, and R-related discussion.

Other university speaking forums

UC Davis Wildlife, Fish and Conservation Biology departmental seminar
UC Davis R Users' Group working group
#MapTimeDavis mapping workshop

Grants and Scholarships

Ecological Society of America 2023 Meeting Registration Grant (ESA; $242)	Jun 2023
Graduate Student Travel Award (UC Davis Grad Studies; $1000)	Dec 2021
FINNEST Future Investigator (NASA; $135,000)	Jun 2019
Jastro Research Fellowship (UC Davis GGE; $1000)	Jun 2018
Student Travel Grant (PSU IGDP; $200)	Dec 2016
AINA Grant-In-Aid (Arctic Institute of North America; $1000)	Apr 2016

Graduate Research Award (PSU Center for Landscape Dynamics; $1000)	Dec 2015
Braddock Scholarship (PSU Eberly College of Science; $3000)	Aug 2014