

## Christian Lee John

Ph.D. Candidate  
Graduate Group in Ecology  
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## Education

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The Pennsylvania State University – M.Sc. Ecology – December 2016  
The Pennsylvania State University – B.S. Biology – December 2013

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## Professional Experience

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### Research

University of California, Davis Department of Wildlife, Fish, and Cons. Biol. Sep 2017 – Present  
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.

Penn State Department of Toxicology and Carcinogenesis Sep 2011 – May 2014  
Undergraduate research assistant; explored effects of dioxin on molecular signaling pathways of skin cancer tumor progression. PI: Adam Glick, Dept. of Toxicology and Carcinogenesis.

## Teaching and Outreach

### 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	Jul – Dec 2013

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.

APPLES – Arctic Plant Phenology Learning through Engaged Science      Jul 2016, Jun 2018  
Led week-long field training in southwest Greenland study site. Guided teachers through collection of plant phenology data, monitoring of herbivore demographics, and remote sensing methodology. Contributed in workshop to help K-12 teachers develop lesson plans focused on Arctic ecological research.

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.

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## Peer-Reviewed Publications

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**John, C.** and Post, E. 2021. Seasonality, niche management, and vertical migration in landscapes of relief. *Ecography*. In press. [[article](#)]

Eikelenboom, M., Higgings, 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 IRE1 $\alpha$  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. [\[article\]](#)

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### Other Publications

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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 Arqueología, October 2017, Instituto Nacional de Antropología e Historia, México D.F.

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

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### Software

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**John, C.** 2021. drpToolkit: Digital repeat photography imagery management and analysis. Python package version 0.0.0.9000. <<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>>.

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### Oral Presentations

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American Geophysical Union Fall 2018 Meeting 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 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 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 Aug 2017  
**John, C.** and Post, E. *Arctic green wave dynamicity and its implications for migration phenology*

American Geophysical Union Fall 2016 Meeting <b>John, C.</b> and Post, E. <i>Dissecting drivers of Arctic plant phenology across scales in time and space</i>	Dec 2016
GIS Day at Penn State, State College, PA <b>John, C.</b> <i>Using UAV remote sensing in Arctic ecological research</i>	Nov 2015
The Polar Center at Penn State, State College, PA <b>John, C.</b> and Post, E. <i>Climate change, the green wave, and Arctic ungulate migratory timing</i>	Feb 2015

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### Other Professional Service

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#### Guest Lecturer

WFC 168 (UC Davis): <i>The future of phenology for Sierra bighorn</i>	Feb 2021
WFC 010 (UC Davis): <i>Movement ecology</i>	Mar 2019
WFC 198 (UC Davis): <i>Resources, reproduction, and trophic mismatch</i>	Feb 2019
WFC 010 (UC Davis): <i>Animal migration</i>	Nov 2017, Feb 2020
WFS 585 (Penn State): <i>Phenoscape: Analyzing the green wave in R</i>	Mar 2017
GEOG 455 (Penn State): <i>Remote sensing in migration ecology</i>	Apr 2016

Open Lab Meeting co-coordinator Fall 2020 – Spring 2021  
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 – Spring 2021  
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

#### Reviewer

*Ecography*  
*Ecology Letters*

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### Grants and Scholarships

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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