

CONNOR NOLAN

CURRICULUM VITAE

Stanford University
Woods Institute for the Environment
Jerry Yang & Akiko Yamazaki Environment & Energy Building - MC 4205
473 Via Ortega
Stanford, CA 94305
email: connorjnolan@gmail.com / cjn@stanford.edu
phone: 520-365-8358

EMPLOYMENT

7/2019 - present: Postdoctoral Fellow, Stanford University, Woods Institute for the Environment
8/2012-7/2019: Graduate Assistant, University of Arizona, Geosciences

EDUCATION

University of Arizona

Ph.D. Geosciences - minor: Global Change
Advisor: Dr. Stephen T. Jackson
August 2019 (Degree requirements completed on 5 June 2019)

Iowa State University

B.S. Mathematics
B.S. Biology - minors: Statistics and English
May 2012

PEER-REVIEWED PUBLICATIONS

Google Scholar profile: <https://scholar.google.com/citations?user=8D1VI3YAAAAJ&hl=en>

2019 Tipton J, Hooten MB, **Nolan C**, Booth RK, McLachlan J. Predicting paleoclimate from compositional data using multivariate Gaussian inverse prediction. *Annals of Applied Statistics*, <https://projecteuclid.org/euclid.aos/1574910048>

2019 **Nolan C**, Tipton J, Booth RK, Hooten MB, Jackson ST. Comparing and improving transfer functions for peatland water-table depth reconstructions based on testate amoebae. *The Holocene*, <https://doi.org/10.1177/0959683619846969>

2018 **Nolan C**, Overpeck JT, Allen JRM, Anderson PM, Betancourt JL, Binney HA, Brewer

S, Bush MB, Chase BM, Cheddadi R, Djamali M, Dodson J, Edwards ME, Gosling WD, Haberle S, Hotchkiss SC, Huntley B, Ivory SJ, Kershaw AP, Kim S-H, Latorre C, Leydet M, Lézine A-M, Liu K-B, Liu Y, Lozhkin AV, McGlone MS, Marchant RA, Momohara A, Moreno PI, Müller S, Otto-Bliesner BL, Shen C, Stevenson J, Takahara H, Tarasov PE, Tipton J, Vincens A, Weng C, Xu Q, Zheng Z, and Jackson ST: Global transformation of terrestrial ecosystems past and future. *Science* 361 (6045), 920-923.
<https://doi.org/10.1126/science.aan5360>

2018 Shuman BN, Routsom C, McKay N, Fritz S, Kaufman D, Kirby ME, **Nolan C**, Pederson GT, and St-Jacques J-M.: Placing the Common Era in a Holocene Context: Millennial-to-centennial patterns and trends in the hydroclimate of North America over the past 2000 years, *Climate of the Past*, <https://doi.org/10.5194/cp-14-665-2018>

2017 Marlon JR, Pederson N, **Nolan C**, Goring S, Shuman B, Robertson A, Booth R, Bartlein PJ, Berke MA, Clifford M, Cook E, Dieffenbacher-Krall A, Dietze MC, Hessler A, Hubeny JB, Jackson ST, Marsicek J, McLachlan J, Mock CJ, Moore DJP, Nichols J, Peteet D, Schaefer K, Trouet V, Umbanhowar C, Williams JW, and Yu Z: Climatic history of the northeastern United States during the past 3000 years, *Climate of the Past*, 13, 1355-1379, <https://doi.org/10.5194/cp-13-1355-2017>, 2017.

2010 Li X, Nielsen L, **Nolan C**, Halverson L: Transient alginate gene expression by *Pseudomonas putida* biofilm residents under water-limiting conditions reflects adaptation to local environment. *Environmental Microbiology*. 12(6): 1578-1590.
<https://doi.org/10.1111/j.1462-2920.2010.02186.x>

In Review **Nolan C**, Field CB, Mach, KJ. Constraints and enablers for increasing carbon storage in the terrestrial biosphere. *Submitted to Nature Climate Change*.

In Revision Chevalier, M, et al. (including **Nolan, C**, among 28 authors) Pollen-based climate reconstruction techniques for late Quaternary studies. *In Revision at Earth Science Reviews*

In Prep **Nolan C**, Jackson ST, Shuman BN, Booth RK. Using co-located lake-level and bog water-table depth records to understand Holocene climate and vegetation changes in Maine

In Prep **Nolan C**, Shuman BN, Booth RK, Jackson ST. Coherent mid-to-late Holocene hydrologic variability cross temporal scales in mid-latitude eastern North America

In Prep Jensen B, Davies L, **Nolan C**, Monteath A, Plunkett G, Booth RK, Ponomoreva V,

Portnyagin M, Cook E, Pyne-O'Donnell S, Hughes P. A latest Pleistocene and Holocene composite tephrostratigraphic framework for paleoenvironmental records from eastern North America.

RESEARCH INTERESTS

- Understanding past, present, and future ecosystem change
- Quantifying the feasibility, scale, and risks of natural climate solutions based on carbon storage in the terrestrial biosphere
- Optimizing portfolios of negative emissions technologies
- Developing new records of paleoclimate and paleoecology from lakes and bogs
- Improving inferences from data via statistical and mechanistic modeling
- Synthesizing regional and global networks of climate and ecological records
- Interrogating patterns and processes of climate and ecological change
- Connecting paleo data to modern observations and future projections

TEACHING EXPERIENCE

University of Arizona - Department of Geosciences

Spring 2016: Teaching Assistant, Geos 212 Intro to Oceanography

Spring 2019: Teaching Assistant, Geos 212 Intro to Oceanography

Paleoecological Observatory Network (PaleON)

Summer 2016: Course Instructor. Summer Course on paleoecological data, ecosystem models, and Bayesian statistics (a.k.a. Camp PaleON)

RELEVANT SKILLS

Field expedition planning, lake and bog coring, laboratory processing of sediment cores, pollen identification, testate amoebae identification, tree coring, basic dendrochronology (cross-dating, ring measurement, etc.), R and Matlab programming, age-depth modeling, Bayesian statistics, basic manipulation of earth system model output, climate dynamics, systematic reviews, climate-policy interactions

SELECTED PRESENTATIONS (first author only)

2018 Joint meeting of the Canadian/American Quaternary Associations. Nolan C, Booth RK, Shuman BN Jackson ST. A new multi-archive record of Holocene vegetation and climate in Maine: droughts, declines, and disturbance

2017 American Geophysical Union. Poster: Nolan C, Tipton J, Booth RK, Jackson ST, Hooten M. Comparing and improving reconstruction methods for proxies based on compositional data

2017 PAGES Open Science Meeting and Young Scientists Meeting. Poster: Nolan C. Tipton J, Booth RK, Shuman B, Jackson ST. Using co-located lake and bog paleohydrologic records to improve proxy-climate interpretations

2016 American Quaternary Association. Poster: Comparing paleohydrologic reconstructions based on lake levels and testate amoebae-inferred water table depth

2015 American Geophysical Union. Oral: Nolan C, Booth RK, Shuman B, Jackson ST. Multiscale hydroclimate reconstruction using co-located lake and bog records from Maine

2014 Graduate Climate Conference. Poster: Nolan C. Integrating multiple sources of data to understand pattern and process in paleoclimate

2013 American Geophysical Union. Poster: Nolan C, Jackson ST, Overpeck JT, Betancourt JL. Future implications of climate-driven vegetation change in North America since the last glacial maximum

2013 Graduate Climate Conference. Oral: Nolan C, Jackson ST, Overpeck JT. Climate-driven vegetation change: LGM to modern

SUPPLEMENTARY EDUCATIONAL EXPERIENCE

2019 Sixth International Geoenvironmental Governance Summer School. Banff, Alberta, Canada.

2015 CESM tutorial. National Center for Atmospheric Research, Boulder, CO

2014 Paleoecological Observatory Network Summer Course on Paleoecological Data, Ecosystem Models, and Bayesian Statistics (a.k.a. Camp PalEON). University of Notre Dame Environmental Research Center, Land o' Lakes, WI

2014 Graduate Workshop on Environmental Data Analytics. National Center for Atmospheric Research, Boulder, CO

2009 Undergraduate workshop on Space-Time Analysis for Environmental Mapping, Epidemiology, and Climate Change. Statistical and Applied Mathematical Sciences Institute (SAMSI), Durham, NC

WORKSHOPS / WORKING GROUPS

2019 Prospects for Carbon Removal Policy in the United States. Davis, CA.

2019 How to Talk About Carbon Removal. Boston, MA.

2017 Last Millennium Reanalysis: Climate Dynamics. Boulder, CO

2016 PAGES North America 2k low frequency hydroclimate proxies. Laramie, WY

2015 PAGES North America 2k phase 2 Powell Center Working Group. Fort Collins, CO

2015 Last Millennium Reanalysis: Proxy System Modeling. Catalina Island, CA 2015

2014 PAGES Holocene: Past as Prologue meeting. Mt Hood, OR

2013 Neotoma chronology workshop. Belfast, Northern Ireland

SERVICE

Journal Reviewer

Geophysical Research Letters; Ecosphere; PLoS ONE; Journal of Vegetation Science; Nature Scientific Data; Nature Scientific Reports; Ecological Indicators

Proposal/Grant Reviewer

NSERC Discovery Grant

Sessions organized

2014 Primary convener. “Understanding uncertainties in paleoclimate and paleoecology: age models, proxy processes, and beyond” (with Jack Williams, Deborah Khider, and Lorraine Lisiecki). AGU Fall Meeting (PP41D, PP44B).

Departmental

2017-2018 Search committee member. University of Arizona Geosciences open rank position in Paleoclimatology, Paleoceanography, or Paleoecology

2014-2015 GeoClub -Geosciences Graduate Student Organization. Executive committee

2013-2015 GeoDaze - Geosciences Graduate Student Symposium organizing committee member

Community

2019 Bay Area Science Festival - Stanford Earth Volunteer

2014-2017 Tucson Festival of Books Geosciences Education/Outreach volunteer

2014 Tucson Gem and Mineral Show Geosciences Education

MEDIA COVERAGE

Nolan, et al. 2018 *Science*

The Washington Post: [Climate change could render many of Earth’s ecosystems unrecognizable](#)

The Atlantic: [No ecosystem on Earth is safe from climate change](#)

National Public Radio: [To predict effects of climate change, scientists looked back 20,000 years](#)

Newsweek: [Climate change is about to transform Earth into an unrecognizable, alien landscape](#)

Australian Broadcasting Company News: [Fossil record points to ‘major transformation’ of Australian ecosystems in the next 100 years](#)

Arizona Daily Star: [Stellar column: Tucson’s familiar natural landscapes may disappear, UA study says](#)

UANews: [Prehistoric vegetation helps predict future ecosystems](#)

[Summary on Altmetric](#)