Daniel A Bishop

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Summary

- Detail-oriented environmental scientist with a passion for data analytics, problem solving and risk assessment, broad research interests bridging forest science and climatology, and proven technical writing and project management skills through *19 peer-reviewed publications and 2 successful grant proposals*
- Comprehensive computer programming, statistics, and data analytics background, with proficiency in MATLAB and R and experience in Python, IDL, Fortran, GIS, and SAS
- Driven to improve societal decision-making and preparedness in response to natural hazards through our understanding of historical and future water resource availability, flood, and drought risk

Education

Ph.D. | *Columbia University, New York, NY* **May 2021 (exp.)**
Earth and Environmental Sciences, GPA: 3.9

  Awards: NASA Earth and Environmental Science Fellowship, Columbia Dean's Fellowship

M.Sc. | *SUNY-ESF, Syracuse, NY* **2013**
Forest and Natural Resources Management, GPA: 3.9

  Awards: Northeastern States Research Cooperative Grant

B.Sc. | *Cornell University, Ithaca, NY* **2010**
Atmospheric Science

Continuing: Machine Learning Certificate through Stanford University (Coursera) **2019**
               Likelihood Methods in Ecology through Cary Institute **2012**

Relevant Experience

Graduate Research Assistant | *Columbia University, New York, NY* **2016-present**

- Investigated causes of trends and variability in Southeast US precipitation and contiguous US soil moisture using observations, reanalyses, model simulations, hydrologic models, and environmental proxy data
- Published 2 dissertation chapters (and 2 in prep.), wrote successful NASA fellowship proposal, research highlighted in press release, and served 2 years on BPE Division Seminar Committee

Research Assistant | *Harvard Forest, Petersham, MA* **2014-2016**

- Modeled precipitation, forest composition, and terrestrial carbon sequestration using tree-ring proxy data and evaluated changing frequency of rainfall events in eastern US
- Developed & maintained a tree-ring width database, worked with supervisor to manage tree-ring lab, co-advised two undergraduate projects, and co-led research field campaigns

Graduate Research Assistant | *SUNY-ESF, Syracuse, NY* **2011-2013**

- Explored the impacts of climate and acid rain on forests of the northeastern US
- Quantified uncertainty in gridded temperature products using weather station data
- Research highlighted in numerous media communications, worked with advisor to co-mentor undergraduate summer research project, wrote a successful graduate research grant, and published 2 thesis chapters

Skills & Expertise

Climate Impacts · Hydroclimatology · Drought & Flood Risk · Meteorology · Bioclimatology · Global Change

Data Analytics · MATLAB · R · Python · SAS · Fortran · ArcGIS · Jupyter · LaTeX · Unix Shell · Git

Microsoft Office · Statistics · Regressions · Machine Learning · Analysis of Variance · Nonlinear Models

Discriminant Analysis · Data Visualization · Project Management · Technical Writing · Collaboration

Selected Publications (of 19)

- **Bishop DA**, Williams AP, Seager R. 2019. Increased fall precipitation in the southeastern United States driven by higher-intensity, frontal precipitation. *Geophysical Research Letters* 46(14):8300-8309.
  - *Media Coverage:* AGU, Phys.org.

- **Bishop DA**, Williams AP, Seager R, Fiore AM, Cook BI, Mankin JS, Singh D, Smerdon JE, Rao MP. 2019. Investigating the causes of increased twentieth-century fall precipitation over the southeastern United States. *Journal of Climate* 32(2):575-590.

- **Bishop DA**, Beier CM, Pederson N, Lawrence GB, Stella JC, Sullivan TJ. 2015. Regional growth decline of sugar maple (Acer saccharum) and potential causes. *Ecosphere* 6: art179.
  - *Media Coverage:* WAMC Northeast Public Radio, Inside Science, Smithsonian Magazine, Popular Science, Albany Times Union, Syracuse Post-Standard, Modern Farmer.

- **Bishop DA**, Pederson N. 2015. Regional variation of transient precipitation and rainless-day frequency across a subcontinental hydroclimate gradient. *Journal of Extreme Events* 2(02):1550007.

Selected Conference Presentations (* = talk)

- ***** **Bishop DA**, Williams AP, Seager R, Bolles K, Cook ER, Peteet DM, Cook BI, Rao MP. December 2020. *Placing the east-west United States aridity gradient in a millennial context*. 2020 AGU Fall Meeting.

- **Bishop DA**, Williams AP, Miller RL, Cook BI, Seager R. December 2019. *Quantifying the drivers of regional hydroclimate change from the fall-season North Atlantic Subtropical High*. 2019 AGU Fall Meeting, San Francisco, CA.

- **Bishop DA**, Williams AP, Seager R. December 2018. *Fall wetting in the southeastern US driven by higher-intensity frontal precipitation*. 2018 AGU Fall Meeting, Washington, DC.

- ***** **Bishop DA**, Williams AP, Seager R, Fiore AM, Cook BI, Mankin JS, Singh D, Smerdon JE, Rao MP. December 2017. *Assessing the causes of 20th century wetting in the eastern United States*. 2017 AGU Fall Meeting, New Orleans, LA.

- ***** **Bishop DA**. March 2016. *Regional growth decline in sugar maple and its potential causes*. Green Mountain Division, Society of American Foresters, 2016 Winter Meeting, Fairlee, VT. **[Invited]**

Teaching Experience

Columbia University

Regional Climate and Climate Impacts (Spring 2020), Dynamics of Climate (Spring 2019), Quantitative Models of Climate-Sensitive Natural and Human Systems (Fall 2017)

Service

Manuscript Reviews (8)

Journal of Climate (2), Bulletin of the American Meteorological Society, Global Change Biology, Journal of Hydrometeorology, Journal of Climate, Canadian Journal of Forest Research, Tree-Ring Research

Leadership & Outreach

Organizing Committee for Lamont-Doherty Biology & Paleo Environment Division Weekly Seminar Series (2017-2019), Lamont-Doherty Open House Volunteer (2016-2017), Earth2Class Workshop Volunteer Speaker (2017), Led Tree-Ring Tours and Workshops for Students and Educators (2016-present)