

Nathan Mietkiewicz, Ph. D.

Postdoctoral Research Fellow, Earth Lab and CIRES

University of Colorado · Boulder · 4001 Discovery Dr.

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Professional Summary

I am a geospatial scientist and ecologist seeking a research position in a dynamic and broad-thinking lab that allows me to pursue high-caliber science relevant to pressing human-environmental issues. My current research aims to examine how global environmental change, including changed climate and fire cycles, alters ecosystem function and human vulnerability. Specifically, I lead cutting-edge research in wildfire ecology, with particular focus on quantifying, modeling, and predicting the consequences of human-started wildfires to the vulnerability of communities throughout the United States. I work at multiple scales, across disciplines, and with an international community of scientists.

Academic Background

Clark University, Ph.D. Geography	2016
Clark University, M.A., Geography,	2015
Clark University, M.S., GIS for Development and Environment,	2013
University of Maine, Orono, ME, B.S., Earth Science,	2009

Recent Professional Background

Postdoctoral Research Fellow 2016–present

Earth Lab and the Cooperative Institute for Research in Environmental Sciences, University of Colorado at Boulder

- Deploying geospatial, reproducible workflows in a salable, cloud-compute environments via Amazon Web Services (AWS) via Docker Hub and GitHub to build stable, collaborative work environments across platforms
- Writing clean, efficient, reproducible code to analyze big geospatial data
- Building out and optimizing statistical models using a variety of techniques, with focus on machine learning algorithms.
- Mentoring/managing undergraduate and graduate level interns and research assistants.
- Authored and co-authored 7 peer-review publications
- Co-authored over \$5 million in research grant proposals

Adjunct Faculty 2012–2016

Graduate School of Geography, Clark University, Worcester, MA

- Taught the undergraduate Forest Ecology seminar
- Developed all course materials, syllabi, laboratories, and testing materials
- Overall effectiveness based on student evaluations was 92%

Teaching Assistant 2012–2016

Graduate School of Geography, Clark University, Worcester, MA

- Taught technical laboratories for graduate and undergraduate class, including Advanced Topics in GIS: Raster GIS (3 semesters), Introduction to Remote Sensing (1 semester), Forest Ecology (1 semester), and Earth System Science (1 semester).
- Overall effectiveness based on student evaluations ranging from 92%-99%, with an average evaluation of 96% over 6 semesters.

Graduate School of Geography, Clark University, Worcester, MA

- Developed and deployed a successful field campaign located in the back-country of the Colorado Rockies.
- Managed a team of 4 undergraduate and graduate students in remote, mountainous areas for 18 weeks over the course of 2 summers.
- Collected over 2,000 tree cores, 1,000 seedling/sampling samples, and data ranging over 3 projects, resulting in 4 peer-reviewed publications and my dissertation.
- Managed the Forest Ecology Lab, where duties included maintaining, ordering, inventorying, and supporting both computer and field equipment for the research and classroom laboratories.

Selected peer-reviewed Publications

Balch, J. K., T. Schoennagel, A. Williams, J. Abatzoglou, M. Cattau, **N. Mietkiewicz**, and L. St. Denis. 2018. *Switching on the Big Burn of 2017*. Fire 1.

Mietkiewicz, N., D. Kulakowski, and T. T. Veblen 2018. *Pre-outbreak forest conditions mediate the effects of spruce beetle outbreaks on fuels in subalpine forests of Colorado*. Ecological Applications 28:457-472.

Mietkiewicz, N., D. Kulakowski, D. Rogan, and P. Bebi. 2017. *Long-term change in sub-alpine forest cover, tree line and species composition in the Swiss Alps*. Journal of Vegetation Science. 28:951-964. DOI: 10.1111/jvs.12561

Schoennagel, T., J. K. Balch, H. Brenkert-Smith, P. E. Dennison, B. J. Harvey, M. A. Krawchuk, **N. Mietkiewicz**, P. Morgan, M. A. Moritz, R. Rasker, M. G. Turner, and C. Whitlock. 2017. *Adapt to more wildfire in western North American forests as climate changes*. Proceedings of the National Academy of Sciences. 114:4582-4590.

Mietkiewicz, N. and D. Kulakowski. 2016. *Relative importance of climate and mountain pine beetle outbreaks on the occurrence of large wildfires in the western US*. Ecological Applications:10.1002/eap.1400

Language Competencies and Computer Skills

Applications: RStudio, Jupyter Notebooks, Amazon Web Services (S3, EC2), ArcGIS 9.3-10.6x, QGIS, IDRISI/Terrset, Adobe CS6 Illustrator,

Programming: R (expert), Python (general understanding), R Markdown, Docker, GitHub, UNIX Shell Programming (general understanding)