

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.

Language Competencies and Technical 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)

Recent Professional Background

Postdoctoral Research Fellow

2016–present

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

- Deployed geospatial, reproducible workflows in a salable, cloud-compute environment via Amazon Web Services (AWS) leveraging Docker and GitHub to build stable, collaborative work environments across platforms
- Wrote clean, efficient, reproducible code to analyze big geospatial data
- Built out and optimizing statistical models using a variety of techniques, with focus on machine learning algorithms.
- Mentored/managed 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.

Research Assistant

2013-2016

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.

Academic Background

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

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