Nathan Mietkiewicz, Ph. D.

Postdoctoral Reserach Fellow, Earth Lab
University of Colorado · Boulder · 4001 Discovery Dr.
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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. I work at multiple scales, across disciplines, and with an international community of scientists.

Education

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

Employment

Postdoctoral Research Fellow   2016–present

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

Leading cutting edge research in wildfire ecology, with particular focus on understanding the consequences of human-started wildfire across the conterminous USA, specifically in and around the wildland-urban interface (WUI). Some of my daily tasks include:

- Integrating GitHub into a collaborative workflow
- Deploying workflows in a salable, cloud-compute environments via Amazon Web Services (AWS)
- Building reproducible workflows using Docker Hub to build stable work environments across platforms
- Writing clean, efficient code to download, process, and analyze big geospatial data ranging, but not limited to, satellite imagery, satellite derived products, governmental records, and climate time-series at local to national scales to answer landscape and continental scale questions
- Building out and optimizing statistical models using a variety of techniques, including generalized linear mixed models, random forests, supervised and unsupervised classifications, neural networks, and other machine learning algorithms.
- Mentoring graduate level interns and research assistants.

Research Assistant   2013-2016

Graduate School of Geography, Clark University, Worcester, MA

Selected peer-reviewed Publications

N. Mietkiewicz, J. K. Balch, T. Schoennagel, S. Leyk, L. St. Denis, B. Bradley. (submitted) Consequences of human-ignited wildfires in the US : from the Wildland-Urban Interface to wildlands. Nature Sustainability.

Balch, J. K.a, 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

Selected outreach, Synergistic Activities, and Professional Development

2017 **Professional presentation** at the Fire Prediction Across Scales Conference, Columbia University, New York City, NY, USA entitled *Drivers of historic and future wildfire occurrence across the United States: the relative contribution of human ignitions vs climate to fire size and probability.*

2017 **Professional presentation** at the Ecological Society of America Portland, OR, USA entitled *Human-ignited fires at the wildland-urban interface: consequences and costs.*

2017 **Invited Speaker** in an undergraduate class, Introduction to Physical Geography, University of Colorado, Boulder, CO.

2017 **Participant** at the Rocky Mountain Advanced Computing Consortium 2017, University of Colorado, Boulder, CO.

2017 **Invited Speaker** at the Wildfire Information Development Workshop, Boulder, CO, USA. Entitled: Human-ignited fires at the wildland-urban interface: case study for using ICS-209s.

2017 **Participant** at the NASA Wildland Fire Applications 2017 Team Meeting, University of Colorado, Boulder, CO.

2017 **Invited Speaker** at the Earth Science & Observation Center Colloquium, University of Colorado, Boulder, CO. Entitled: Earth Lab: Accelerating discovery with advanced earth analytics.

Skills

Applications: QGis, ArcGIS, IDRISI, Adobe Illustrator/Photoshop, RStudio, Jupyter Notebooks, RMarkdown, Docker, GitHub, Amazon Web Services (S3, EC2)

Programming: R (expert), Python (general understanding)

References

Available upon request