

# Nathan Mietkiewicz, Ph. D.

Postdoctoral Reserach Fellow, Earth Lab

University of Colorado · Boulder · 4001 Discovery Dr.

✉ Nathan.Mietkiewicz@Colorado.edu ☎ 508 797 2940 📧 NateMietk 🌐 nathanmietkiewicz.com

## Education

### Clark University, Worcester, MA

**Ph. D.**, Geography, 2012 - 2016

*Dissertation Title:* Interactions of spruce beetle outbreak and wildland fire in Colorado: legacies and future projections under a changing climate.

*Advisor:* Dr. Dominik Kulakowski

**M.A.**, Geography, 2015

**M.S.**, GIS for Development and Environment, 2010-2013

*Thesis:* A century of ecological change in a subalpine forest of the Swiss Alps.

*Advisors:* Dr. Dominik Kulakowski, Dr. John Rogan, Dr. Peter Bebi **University of Maine, Orono, ME**

**B.S.**, Earth Science, 2009

## Peer-reviewed Publications

**Mietkiewicz, N.**, J. K. Balch, T. Schoennagel, L. St. Denis, B. Bradley. *Costs of human-ignited wildfires in the U.S. (2001-2015)-from the Wildland-Urban Interface to wildlands*. In review. Proceedings of the National Academy of Sciences

**Mietkiewicz, N.**, D. Kulakowski, and T.T. Veblen. *Spruce beetle legacies on fire behavior under a varying climate in CO, USA*. In preparation.

**Mietkiewicz, N.**, D. Kulakowski, and T.T. Veblen. *Disturbance legacies and forest fuel loads in the southern Rocky Mountains, CO, USA*. In press. Ecological Applications.

**Mietkiewicz, N.**, D. Kulakowski, D. Rogan, and P. Bebi. *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

Bakaj, F., **N. Mietkiewicz**, T. T. Veblen, and D. Kulakowski. 2016. *The relative importance of tree and stand properties in susceptibility to spruce beetle outbreak in the mid-20th century*. Ecosphere 7(10):e01485. 10.1002/ecs2.1485

Hart, S. J., T. T. Veblen, **N. Mietkiewicz**, and D. Kulakowski. 2015. *Negative Feedbacks on Bark Beetle Outbreaks: Widespread and Severe Spruce Beetle Infestation Restricts Subsequent Infestation*. PLoS ONE 10:e0127975.

## Book Chapters

Rogan, J., and **N. Mietkiewicz**. 2015. *Land Cover Change Detection* in A. Aranganathan, editor. Land Resources Monitoring, Modeling, and Mapping with Remote Sensing.

## Grants, Awards, and Fellowships

- 2018 \$250,000 - Co-PI, Submitted - USGS Powell Center Working Group  
One fire: Defining modern U.S. fire regimes by synthesizing existing data  
\$1,600,000 - Senior Personnel, Submitted - National Science Foundation: Coupled Natural-Human Systems  
Human settlements in flammable U.S. landscapes: How will people coexist with wildfire?
- 2017 \$1,852,683 - Co-PI, Submitted - National Science Foundation: Macrosystems  
Macroscale Resilience: Understanding how forests recover after beetle-kill, fire, and drought  
by linking observations—from single trees to the western U.S.  
\$1200 - Fire Prediction Across Scales conference travel award - Columbia University
- 2015 \$700 - Clark University's Outstanding Teaching Assistant Award  
\$300 - Marion I. Wright '46 Travel Award, Fall 2015  
\$250 - Pruser Dissertation Enhancement Award  
\$300 - Graduate Student Council Travel Award, Spring 2016
- 2013 \$600 - Marion I. Wright '46 Travel Award, Spring/Fall 2013  
\$750 - Pruser Dissertation Enhancement Award
- 2012 \$4,000 - Libbey Enhancement Award  
\$55,000 - Full tuition remission and stipend (5 years, approx. per year)
- 2010 \$15,980 - Awarded scholarship towards Master's degree (2 years, approx. per year)

## Research Appointments

- 2016 - Postdoctoral Research Fellow, Earth Lab, University of Colorado, Boulder
- 2013 - 2016 Research Assistant, Forest Ecology Research Laboratory, Clark University  
Forest Ecology Research Laboratory Manager, Clark University
- 2012 Research and Development, Clark Labs, Worcester, MA
- 2011 GIS Consultant, Department of Public Works, Ashland, MA  
GIS Analyst, United States Department of Agriculture: National Resource Conservation Service
- 2008 Field Researcher, Scott Glacier, Antarctica via University of Maine, Orono
- 2007 Field Researcher, Marine Sediments Laboratory, University of Maine, Orono
- 2006 Laboratory Technician, Climate Change Institute, University of Maine, Orono  
Numerical Modeling Technician, Numerical Modeling Laboratory, University of Maine, Orono

## Teaching Appointments

### Faculty Positions

Clark University

2015 Forest Ecology (GEOG 116); Overall Effectiveness = 4.6/5

### Teaching Assistant Positions

Clark University

2015 Advanced Topics in GIS: Raster GIS (GEOG 397); Overall Effectiveness = 4.94/5

2014 Introduction to Remote Sensing (GEOG 383); Overall Effectiveness = 4.89/5  
Advanced Topics in GIS: Raster GIS (GEOG 397); Overall Effectiveness = 4.74/5

2013 Forest Ecology (GEOG 116); Overall Effectiveness = 4.62/5  
Advanced Topics in GIS: Raster GIS (GEOG 397); Overall Effectiveness = 4.74/5

2012 Earth System Science (GEOG 104); Overall Effectiveness = 4.97/5

## Professional Presentations

2017 **Mietkiewicz, N.**, Balch, J., St. Denis, L., Schoennagel, T. *United States: the relative contribution of human ignitions vs climate to fire size and probability*. Presentation at the Fire Prediction Across Scales Conference, Columbia University, New York City, NY, USA.

2017 **Mietkiewicz, N.**, Balch, J., St. Denis, L., *Human-ignited fires at the wildland-urban interface: consequences and costs*. Presentation at the Ecological Society of America Portland, OR, USA.

2016 **Mietkiewicz, N.**, D. Kulakowski, and T.T. Veblen. *Spruce beetle legacies on fire behavior under a varying climate in CO, USA*. Paper presentation at the Association of American Geographers, San Francisco, CA.

2016 **Mietkiewicz, N.**, D. Kulakowski, and T.T. Veblen. *Spruce beetle legacies on fire behavior under a varying climate in CO, USA*. Poster presentation at the 5th International Fire Behavior and Fuels Conference, Portland, OR

2014 **Mietkiewicz, N.**, Kulakowski, D. *How do spruce beetle outbreaks affect fuel loads in the southern Rocky Mountains, CO*. Paper presented at the Association of American Geographers, Tampa, FL.

2013 **Mietkiewicz, N.**, Kulakowski, D., and Rogan, J. *Identifying sub-continental drivers of wildland fire under a varying climate*. Paper presented at New England-St. Lawrence Valley Geographical Society (NESTVAL), Worcester, MA.

2013 **Mietkiewicz, N.**, Kulakowski, D., and Rogan, J. *What are the landscape requirements preceding wildland fire occurrence?* Paper presented and Biogeography session chaired at the Annual Conference of the Association of American Geographers, Los Angeles, CA.

2012 **Mietkiewicz, N.**, Kulakowski, D., and Rogan, J. *A century of ecological change in a subalpine forest of the Swiss Alps*. Paper presented at the Annual Conference of the Association of American Geographers, New York, NY.

## Outreach, Synergistic Activities, and Professional Development

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.

2014 **Participant** in a Seminar in College Teaching, Certificate in College Teaching. Colleges of Worcester Consortium, Inc.

2014 **Professional exhibitor** representing Clark Labs at the Annual Conference of the Association of American Geographers, Tampa, FL.

2014 **Professional exhibitor** representing Clark Labs at the American Society for Photogrammetry and Remote Sensing, Baltimore, MD.

2013 **Professional exhibitor** representing Clark Labs at the Annual Conference of the Association of American Geographers, Los Angeles, CA.

Peer-reviewed for the following journals: Ecology and Evolution, International Journal of Wildfire, Open Access Forests

## **Skills**

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

**Programming:** R