

## CURRICULUM VITAE

University of Idaho

**NAME:** Crystal A. Kolden

**DATE:** 11/1/2017

**RANK OR TITLE:** Associate Professor

**DEPARTMENT:** Forest, Rangeland, and Fire Sciences

**OFFICE LOCATION AND CAMPUS ZIP:** CNR 204D, 83844-1133

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**DATE OF FIRST EMPLOYMENT AT UI:** August 22, 2010

**DATE OF TENURE:** March 7, 2017

**DATE OF PRESENT RANK OR TITLE:** July 1, 2017

### **EDUCATION BEYOND HIGH SCHOOL:**

Ph.D., Clark University, Worcester, MA, 2010, Geography

M.S., University of Nevada, Reno, 2005, Geography

A.B. *cum laude*, Cornell University, Ithaca, NY, 1999, History

### **EXPERIENCE:**

#### **Teaching, Extension and Research Appointments:**

Associate Professor, College of Natural Resources, University of Idaho (2017 – present)

Affiliate Faculty, Department of Geography, University of Idaho (2017 – present)

Assistant Professor, Department of Geography, University of Idaho (2011 – 2016)

Affiliate Faculty, Wildland Fire Program, University of Idaho (2012 – 2016)

Assistant Research Professor, University of Idaho (2010-2011)

Research Associate, Desert Research Institute (2005 – 2012)

Instructor, Truckee Meadows Community College, Reno, Nevada (2005-2006, 2008)

Graduate Research Assistant, Clark University (2006-2007)

Instructor, University of Nevada, Reno (2005-2006)

Graduate Research Assistant, Desert Research Institute (2003-2005)

Graduate Teaching Assistant, University of Nevada, Reno (2002-2003)

#### **Non-Academic/Governmental Appointments:**

Landscape Ecologist, US Geological Survey, Anchorage, Alaska (2007-2010)

Fire Ecologist, US Forest Service, Nevada City, California (2003-2005)

Field Technician, Synergy Resource Solutions, Inc. (2002)

Environmental Technician, Jones and Stokes Environmental Consultants, Inc. (2000-2001)

Seasonal wildland firefighter/forestry technician (Summer/Fall only, 1998 – 2000)

#### **Consulting:**

GeoElements, LLC, Fire Risk Mapping for Community Wildfire Protection Plans (2012-present)

USFS, Fire Behavior Analysis for Nevada Test and Training Range (2007-2008)

USFS, Fire Risk and Invasive Species Assessment of Vandenberg Air Force Base (2006-2007)  
 USFS, Fire Behavior Analysis for Grand Canyon National Park (2006)  
 USFS, Fire Behavior Analysis for Bell Canyon, California (2006)

**TEACHING ACCOMPLISHMENTS:** (Academic and Extension teaching)

**Areas of Specialization:**

Wildland Fire Science and Policy  
 Remote Sensing and Geospatial Science  
 Landscape Ecology and Disturbance  
 Human-Environment Interactions  
 Global Climate Change Impacts  
 Natural History of the Western United States

**Courses Taught:**

As the World Burns: Fire on Earth, CORS 235 (FA17)  
 Introduction to Spatial Analysis for Natural Resource Management, FOR 375 (SP17)  
 GIS for Fire Ecology and Management, REM 510 (SP17)  
 Physical Geography, GEOG 100 (FA10, SP12)  
 Physical Geography (online course), GEOG 100 (SP14)  
 Capstone Seminar, GEOG 493 (SP14, FA14, SP15)  
 Professional Development Seminar, GEOG 504/592 (SP12)  
 DS: Instruction in Geography/Higher Education, GEOG 502, (SP12, FA12, SP13)  
 Seminar: Ecosystem Vulnerability (SP15)  
 Advanced Remote Sensing, GEOG 587 (FA12)  
 Introduction to Physical Geography, GEOG 103 (Truckee Meadows Community College; SP06, SP08)  
 Mapping and Measuring the Earth Surface, GEOG 210 (University of Nevada, Reno; FA05, SP06)

**Students Advised:**

Undergraduate Students Graduated:

William Mathews, Geography  
 Liangzi Zhang, Geography

Undergraduate Research Assistants:

Kyle Behrens, Geography, 2011-2012  
 William Mathews, Geography, 2012-2013

Graduate Students (as major or co-major professor):

Current:

Vincent Jansen, Ph.D. Natural Resources (expected 2018)  
 Carrie Minerich, M.S. Natural Resources (expected 2018)  
 Silas Whitley, M.S. Natural Resources (expected 2019)  
 Anthony Martinez, M.S. Natural Resources (expected 2019)

Completed:

Aaron Sparks, Ph.D., Natural Resources (University of Idaho, 2017)  
 Devin Yeatman, M.S. Natural Resources (University of Idaho, 2017)  
 Ryan McCarley, M.S. Geography (University of Idaho, 2016)  
 John Kannady, M.S. Geography (University of Idaho, 2016)  
 Tyler Bleeker, M.S. Geography (University of Idaho, 2015)  
 Vincent Jansen, M.S. Environmental Science (University of Idaho, 2014)

Katherine Morrison, M.S. Geography (University of Idaho, 2014)  
 Patrick Olsen, M.S. Geography (University of Idaho, 2014)  
 Forrest Bowlick, M.S. Geography (University of Idaho, 2012)

Graduate committee member:

Bingbing Xu, M.S. Environmental Science (expected 2017)  
 Eloise Zimbleman, Ph.D. Natural Resources (expected 2018)  
 Raquel Partelli Feltrin, Ph.D. Natural Resources (expected 2019)  
 Seth Gorelik, M.S. Geography (University of Idaho, 2017)  
 Donovan Birch, M.S. Forest Resources (University of Idaho, 2013)  
 Christine Droske, M.S. Forest Resources (University of Idaho, 2012)  
 Benoit Parmentier, Ph.D. Geography (Clark University, 2011)

Postdoctoral Fellows mentored:

Aaron Sparks (2017-present)  
 Arjan Meddens (2013-2016)  
 R. Justin Hougham (2012-2013)

**Curriculum Materials Developed:**

University of Idaho Physical Geography Online Course Website  
 University of Idaho Physical Geography Laboratory Manual  
 University of Nevada, Reno Physical Geography Lab Exercises  
 Climate Science Matrix and associated resources ([www.icenetmatrix.com](http://www.icenetmatrix.com))

**Courses Developed:**

CORS 235 – As the World Burns: Fire on Earth (new core science course)  
 GEOG 100 – Introduction to Physical Geography (online version)  
 GEOG 493 – Capstone Course (redevelopment of existing course)  
 GEOG 587 – Advanced Remote Sensing  
 GEOG 592 – Professional Development Seminar  
 GEOG 210 (University of Nevada, Reno) – Mapping and Measuring the Earth Surface (currently titled ‘Geospatial Technologies’)

**Non-credit Classes, Workshops, Seminars, Invited Lectures, etc.:**

**2017:**

- Guest lecture, Integrated Seminar (ISEM 301), University of Idaho, December 2017
- Guest lecture, Society and Natural Resources (FOR 235), University of Idaho, November 2017
- Invited keynote presentation, Restoring the West Conference 2017, Logan, UT, October 2017
- Invited national speaker seminar, Northern Arizona University School of Forestry seminar series, Flagstaff, AZ, October 2017
- Invited keynote presentation, Wildland Fire Workshop – 41<sup>st</sup> Intertribal Timber Council Annual Symposium, Yakima, WA, June 2017
- Co-organizer and overview lecture, Big Wood River Valley Fire Resilience Workshop (co-hosted by UI and the Sun Valley Institute for Resilience), Hailey, ID, June 6-8, 2017

▪ **2016:**

- Invited seminar/outreach, High Desert Museum of Natural History, Bend, OR, November 2016
- Guest lecture, Society and Natural Resources (FOR 235), University of Idaho, November 2016
- Invited presentation, Upper Columbia United Tribes Climate Resiliency Workshop, Spokane, WA, October 2016
- Invited seminar, School of Environment, Washington State University, October 2016
- Invited seminar, Department of Natural Resources and Environmental Sciences, University of Nevada,

Reno, March 2016 (declined)

▪ **2015:**

- Guest lecture, Society and Natural Resources (FOR 235), University of Idaho, November 2015
- Invited seminar, Department of Forest, Range, and Fire Sciences, University of Idaho, October 2015
- Invited seminar, Northern Arizona University College of Forestry (declined due to maternity leave)

**2014:**

- PHOENIX: The Fire STC; Identifying Grand Challenges in Fire Science and Education (Co-organizer and Presenter), Workshop at University of Idaho, Moscow, ID, April 17-18, 2014
- Invited Distinguished Lecture, University of Montana Plum Creek Distinguished Lecture Series, Missoula, MT, March 26-28, 2014
- Fire as a Teacher, Invited Outreach Seminar, Malcolm M. Renfrew Interdisciplinary Colloquium, University of Idaho, Moscow, ID February 4, 2014

**2013:**

- Integrating Climate Science and Climate Change into Your Courses, Seminar at College of Western Idaho, Nampa, ID, April 26, 2013
- Invited seminar, Moscow Science on Tap, Moscow, ID, May 21, 2013

**2012:**

- Workshop on Integrating climate change into fuels management (Organizer and Presenter), Association for Fire Ecology 5<sup>th</sup> International Fire Ecology and Management Congress, Portland, OR, December 3, 2012
- Invited seminar, University of Montana College of Forestry, Missoula, MT, November 2, 2012
- Northwest Climate Education Resources Workshop (Organizer and Presenter), Moscow, ID, June 18-22, 2012

**2011:**

- Workshop on fire/climate information (Organizer and Presenter), Palm Springs, CA, October 2011
- Invited lecture, Physical Geography (GEOG 100), University of Idaho, September 2011
- Summer ICE Net climate change education Workshop I, McCall Outdoor Science School, McCall, ID, August 1-4, 2011
- Summer ICE Net climate change education Workshop I, McCall Outdoor Science School, McCall, ID, June 23-26, 2011
- Invited seminar, University of Idaho Department of Geography, April 2011.
- Invited lecture, Fire Behavior (FOR 450), University of Idaho, May 2011
- Invited lecture, Human Geography (GEOG 165), University of Idaho, April 2011

**2009:**

- Invited seminar, University of Idaho College of Natural Resources, Moscow, ID, March 23, 2009.

## SCHOLARSHIP ACCOMPLISHMENTS

### Publications (\*indicates student advisee, #indicates equal contribution):

#### Refereed/Peer-reviewed:

- J45. Meddens, A.H.J., **C.A. Kolden**, J.A. Lutz, J.T. Abatzoglou, and A.T. Hudak. In press.  
Spatiotemporal patterns of unburned areas within fire perimeters in the northwestern United States

- from 1984 to 2014. *Ecosphere*.
- J44. **Kolden, C. A.**, T. M. Bleeker, A. M. S. Smith, H. M. Poulos, A. E. Camp. 2017. Fire effects on historical wildfire refugia in contemporary wildfires. *Forests*, 8, 400.
- J43. Zimbleman\*, E. G., R. F. Keefe, E. K. Strand, **C. A. Kolden**, A. M. Wempe. 2017. Hazards in Motion: Development of Mobile Geofences for Use in Logging Safety. *Sensors*, 17.
- J42. Abatzoglou, J. T., **C. A. Kolden**, A. P. Williams, J. A. Lutz, A. M. S. Smith. 2017. Climatic influences on interannual variability in regional burn severity across western US forests. *International Journal of Wildland Fire*, 26(5), <http://doi.org/10.1071/WF16165>.
- J41. McCarley, T.R.\*, **C.A. Kolden**, N.M. Vaillant, A.T. Hudak, A.M.S. Smith, J. Kreitler. 2017. Landscape-scale Quantification of Fire-induced Change in Canopy Cover Following Mountain Pine Beetle Outbreak and Timber Harvest. *Forest Ecology and Management*, 391, 164-175. <http://dx.doi.org/10.1016/j.foreco.2017.02.015>
- J40. McCarley, T.R.\*, **C.A. Kolden**, N.M. Vaillant, A.T. Hudak, A.M.S. Smith, B.M. Wing, B. Kellogg, J. Kreitler. 2017. Multi-temporal LiDAR and Landsat quantification of fire-induced changes to forest structure. *Remote Sensing of Environment*, 191, 419-432.
- J39. Bowman, D.M.J.S., G.J. Williamson, J.T. Abatzoglou, **C.A. Kolden**, M. Cochrane, and A.M.S. Smith. 2017. Human population vulnerability to globally extreme wildfires. *Nature Ecology and Evolution*, 1, 0058. doi:10.1038/s41559-016-0058.
- J38. Smith, A.M.S., A.F. Talhelm, D.M. Johnson, A. M. Sparks, **C.A. Kolden**, K.M. Yedinak, K. Apostol, W.T. Tinkham, J.T. Abatzoglou, J. A. Lutz, A.S. Davis, K.S. Pregitzer, H. D. Adams, R. L. Kremens. 2017. Impacts of fire radiative energy density doses on *Pinus contorta* and *Larix occidentalis* seedling physiology and mortality. *International Journal of Wildland Fire*, 26(1) 82-94 <http://dx.doi.org/10.1071/WF16077>
- J37. Sparks, A.M.\*, A. M. S. Smith, A. F. Talhelm, **C. A. Kolden**, K. M. Yedinak, D. M. Johnson. 2017. Impacts of fire radiative flux on mature *Pinus ponderosa* growth and vulnerability to secondary mortality agents. *International Journal of Wildland Fire*, 26(1) 95-106 <http://dx.doi.org/10.1071/WF16139>
- J36. Meddens, A.J.H., **C.A. Kolden**, and J.A. Lutz. 2016. Detecting unburned areas within wildfire perimeters using Landsat and ancillary data across the northwestern United States. *Remote Sensing of Environment* 186: 275-285. doi:10.1016/j.rse.2016.08.023
- J35. Vaillant, N.M., **C.A. Kolden**, and A.M.S. Smith. 2016. Assessing landscape vulnerability to wildfire in the USA. Current Forestry Reports, doi:10.1007/s40725-016-0040-1
- J34. Sparks, A.M.\*, **C.A. Kolden**, A.F. Talhelm, A.M.S. Smith, K.G. Apostol, D.M. Johnson, and L. Boschetti. 2016. Spectral indices accurately quantify changes in seedling physiology following fire: towards mechanistic assessments of carbon dynamics following wildfire. *Remote Sensing* 8(7), 572. doi:10.3390/rs8070572.
- J33. Abatzoglou, J.T., **C.A. Kolden**, J.K. Balch, and B.A. Bradley. 2016. Controls on interannual variability in lightning-caused fire activity in the western US. *Environmental Research Letters* 11 (2016) 045005. doi:10.1088/1748-9326/11/4/045005
- J32. Hicke, J.A., A.J.H. Meddens, C.D. Allen, and **C.A. Kolden**. 2016. Recent tree mortality in the western United States from bark beetles and forest fires. *Forest Science* 62: 141-153.
- J31. Smith, A.M.S., A.F. Talhelm, **C.A. Kolden**, B.A. Newingham, H.D. Adams, J.D. Cohen, K.M. Yedinak, R.L. Kremens. 2016. The ability of winter grazing to reduce wildfire size and fire-induced plant mortality was not demonstrated: A comment on Davies et al. (2015). *International Journal of Wildland Fire*. doi:10.1071/WF15163
- J30. Smith, A.M.S.#, **C.A. Kolden**#, T.B. Paveglio#, M.A. Cochrane, M.A. Mortiz, A.D. Kliskey, L. Alessa, A.T. Hudak, C.M. Hoffman, J.A. Lutz, D.M.J.S. Bowman, L.P. Queen, S.J. Goetz, L. Boschetti, P.E. Higuera, M. Flannigan, K.M. Yedinak, E.K. Strand, J.W. Van Wagendonk, and B.J. Stocks. 2016. The Science of Firescapes: Achieving Fire Resilient Communities. *Bioscience* 66(2): 130-146.
- J29. Smith, A.M.S., A.M. Sparks\*, **C.A. Kolden**, J.T. Abatzoglou, A.F. Talhelm, D.M. Johnson, L. Boschetti, J.A. Lutz, K.G. Apostol, K.M. Yedinak, W.T. Tinkham, and R.L. Kremens. 2016. Towards

- a new paradigm in fire severity research using dose-response experiments. *International Journal of Wildland Fire*. doi:10.1071/WF15130
- J28. Jansen, V.S.\* , **C.A. Kolden**, R.V. Taylor, and B. Newingham. 2016. Quantifying Livestock Effects on Bunchgrass Vegetation with Landsat ETM+ Data Across a Single Growing Season. *International Journal of Remote Sensing*, 37(1): 150-175, DOI:10.1080/01431161.2015.1117681
- J27. **Kolden, C.A.**, J.T. Abatzoglou, J.A. Lutz, C.A. Cansler, J.T. Kane, J.W. Van Wagtendonk, and C.H. Key. 2015. Climate contributors to forest mosaics: ecological persistence following wildfire. *Northwest Science* 89(3): 219-238.
- J26. Olsen, P.M.\* , **C.A. Kolden**, and L. Gadamus. 2015. Developing marine habitat suitability models from remotely-sensed data and traditional ecological knowledge. *Remote Sensing* 7(9), 11863-11886; doi:[10.3390/rs70911863](https://doi.org/10.3390/rs70911863)
- J25. Pierce, J., and **C.A. Kolden**. 2015. The hilliness of U.S. cities. *Geographical Review* 105(4): 581-600.
- J24. **Kolden, C.A.**, A.M.S. Smith, and J.T. Abatzoglou. 2015. Limitations and utilization of Monitoring Trends in Burn Severity products for assessing wildfire severity in the USA. *International Journal of Wildland Fire*. <http://dx.doi.org/10.1071/WF15082>
- J23. Barbero, R., J.T. Abatzoglou, N. Larkin, **C.A. Kolden**, and B.J. Stocks. 2015. Climate change presents increased potential for very large fires in the contiguous United States. *International Journal of Wildland Fire*. <http://dx.doi.org/10.1071/WF15083>
- J22. Barbero, R., J.T. Abatzoglou, **C.A. Kolden**, K. Hegewisch, N. Larkin, and H. Podschwit. 2015. Multiscalar influence of weather and climate on megafires in the eastern United States. *International Journal of Climatology* 35(8): 2180-2186.
- J21. Birch, D.\* , P. Morgan, **C.A. Kolden**, J.T. Abatzoglou, G.K. Dillon, A.T. Hudak, and A.M.S. Smith. 2015. Vegetation, topography and daily weather influenced burn severity in central Idaho and western Montana forests. *Ecosphere* 6(1): art17.
- J20. Bowen, E., A. Miles, **C.A. Kolden**, M.T. Tinker, J. Bodkin, J. Saarinen. 2015. Effects of wildfire on sea otter (*Enhydra lutris*) immune function. *Marine Mammal Science* 31: 191-210.
- J19. Morrison, K.D.\* and **C.A. Kolden**. 2015. Modeling the impacts of wildfire on runoff and pollutant transport from coastal watersheds to the nearshore environment. *Journal of Environmental Management*, 151: 113-123. doi:10.1016/j.jenvman.2014.12.025
- J18. Morrison, K.D.\* and **C.A. Kolden**. 2014. Development of a Historical Multi-Year Land Cover Classification Incorporating Wildfire Effects. *Land*, 3(4), 1214-1231.
- J17. Smith, A.M.S.#, **C.A. Kolden#**, W.T. Tinkham#, A. Talhelm, A. Kliskey, L. Alessa, J.D. Marshall, R.F. Keefe, J.W. Anderson, and J.R. Gosz. 2014. Remote sensing of vegetation vulnerability in terrestrial ecosystems. *Remote Sensing of Environment*, 154: 322-337.
- J16. Birch, D.\* , P. Morgan, **C.A. Kolden**, A. Hudak, and A.M.S. Smith. 2014. Is proportion burned severely related to daily area burned? *Environmental Research Letters*, 9(6), 064011.
- J15. Hicke, J.A., A.J.H. Meddens, C.D. Allen, and **C.A. Kolden**. 2013. Carbon stocks of trees killed by bark beetles and wildfire in the western United States. *Environmental Research Letters* 8(3), 035032.
- J14. Abatzoglou, J.T., **C.A. Kolden**. 2013. Relationships between climate and macroscale area burned in the western United States. *International Journal of Wildland Fire*. <http://dx.doi.org/10.1071/WF13019>
- J13. Bowlick, F.J.\* , **C.A. Kolden**. 2013. Effects of an Introductory Geography Course on Student Perceptions of Geography at the University of Idaho. *Journal of Geography in Higher Education*. doi:10.1080/03098265.2013.801068
- J12. **Kolden, C.A.**, and J. Rogan. 2013. Mapping wildfire burn severity in the Arctic tundra: novel approaches for an extreme environment. *Arctic, Antarctic and Alpine Research* 45(1): 64-76.
- J11. **Kolden, C.A.**, J.A. Lutz, C.H. Key, J.T. Kane, and J.W., van Wagtendonk. 2012. Mapped versus actual burned area within wildfire perimeters: characterizing the unburned. *Forest Ecology and Management*, 286: 38-47.
- J10. Ray, L.A., **C.A. Kolden**, and F.S. Chapin III. 2012. Developing fire management strategies from traditional ecological knowledge in the absence of local science. *Ecology and Society* 17(3): 37.

<http://dx.doi.org/10.5751/ES-05070-170337>.

- J9. Owen, G., J. McLeod, **C.A. Kolden**, D. Ferguson, and T.J. Brown. 2012. Predictive Forecasting in wildland fire management: a social network analysis of the southwestern U.S. *Weather, Climate and Society* 4(2): 90-102.
- J8. **Kolden, C.A.**, J.T. Abatzoglou. 2012. Climate and Vegetation Influences on Fire Impacts in Alaskan Boreal Forest: Implications for Carbon and Fire Management. *Fire Ecology* 8(1): 98-113.
- J7. Lutz, J., C.H. Key, **C.A. Kolden**, J.T. Kane, and J.W. Van Wagendonk. 2011. Fire frequency, area burned, and severity: A quantitative approach to defining a normal fire year. *Fire Ecology* 7(2): 51-65.
- J6. Abatzoglou, J.T., and **C.A. Kolden**. 2011. Relative Importance of Weather and Climate on Wildfire Growth in Interior Alaska. *International Journal of Wildland Fire* 20(4) 479-486.
- J5. Abatzoglou, J.T. and **C.A. Kolden**. 2011. Climate change in western US deserts: potential for increased wildfire and invasive annual grasses. *Rangeland Ecology and Management*, September 2011, Vol. 64, No. 5, pp. 471-478
- J4. **Kolden, C.A.** and T.J. Brown. 2010. Beyond Wildfire: Perspectives of Climate, Managed Fire and Policy in the U.S.A. *International Journal of Wildland Fire* 19(3): 364-373.
- J3. Jones, B., **C.A. Kolden**, R. Jandt, J.T. Abatzoglou, F. Urban, and C. Arp. 2009. Fire behavior, weather, and burn severity of the 2007 Anaktuvuk River tundra fire, North Slope, Alaska. *Arctic, Antarctic, and Alpine Research*. 41(3): 309-316.
- J2. **Kolden, C.A.** and P.W. Weisberg. 2007. Assessing accuracy of manually-mapped wildfire perimeters in topographically dissected areas. *Fire Ecology* 3(1): 22-31.
- J1. **Kolden, C.A.**, and T.J. Weigel. 2007. Fire risk in San Diego County, California: A weighted Bayesian model approach. *The California Geographer* 47: 1-17.

**Refereed/Peer-reviewed (submitted, in-review, in-revision):**

- Abatzoglou, J.T., J.K. Balch, B.A. Bradley, and **C.A. Kolden**. In review at International Journal of Wildland Fire. Human-related ignitions concurrent with high winds promote large wildfires across the US..
- Alessa, L., A. Kliskey, **C.A. Kolden**, J.T. Abatzoglou, B. Moore, G. Austin, N. Beck, and A.M.S. Smith. In revision for *Journal of the American Water Resources Association*. Idaho's Waterscapes in the next 50 years: A synthesis and forecast of the use and availability of water resources in Idaho.
- Hanan, E., C. Tague, J. Choate, M. Liu, **C.A. Kolden**, and J.C. Adam. Submitted to *Ecological Applications*. Accounting for disturbance history in models: using remote sensing to constrain carbon and nitrogen pool spin-up.
- Kolden, C.A.**, and J.T. Abatzoglou. In revision for *Land*. Causes and consequences of dichotomous wildfire regimes in southern California.
- McCarley, T. R., **C. A. Kolden**, A. M. S. Smith, A. T. Hudak, J. Kreitler, N. M. Vaillant. In review at *Ecological Applications*. Burn severity products for ecological applications: limitations and suggestions for progress.
- McCarley, T.R., A.M.S. Smith, **C.A. Kolden**, and J. Kreitler. In review at *International Journal of Wildland Fire*. Evaluating the mid-infrared bi-spectral index for improved assessment of low-severity fire effects in a conifer forest.
- Meddens, A.H.J., **C.A. Kolden**, J.A. Lutz, A.M.S. Smith, C.A. Cansler, and J.T. Abatzoglou. In revision for *BioScience*. The role of fire refugia in ecosystem vulnerability.
- Moreira-Muñoz, A., R.O. Chávez, **C.A. Kolden**, A.A. Muñoz, F. Salinas, A. González-Reyes, R. Rocco, F. de la Barrera, G.J. Williamson, F.H. Johnston, N. Borchers, and D.M.J.S. Bowman. In review at *Scientific Reports*. Drought and land use caused globally unprecedented extreme fires in Mediterranean Chile.
- Sparks, A.M.\*, **C.A. Kolden**, A.M.S. Smith, L. Boschetti, D.A. Johnson, M.A. Cochrane. In review at *Biogeosciences*. Fire intensity impacts on post-fire temperate coniferous forest net primary productivity.
- Sparks, A.M.\*, A.M.S. Smith, L. Boschetti, **C.A. Kolden**, R.L. Kremens, K.M. Yedinak, and M.A. Cochrane. In revision for *International Journal of Wildland Fire*. Relationships between fuel

properties, biomass consumed, and energy release in heterogeneous woody fuels.  
 Yeatman, D.M., **C.A. Kolden**, A.M.S. Smith, J.E. Force. In review at *International Journal of Wildland Fire*. How much canopy cover in the home ignition zone facilitates loss of homes during timbered wildland-urban interface fires?

#### Book Chapters:

- B1. Abatzoglou, J.T., **C.A. Kolden**, J.F.C. DiMento, P.M. Doughman, and S. Nespor. 2014. 'Climate Change Impacts: Global and Local Views.' Chapter 3 in J.F.C. DiMento and P.M. Doughman, eds., *Climate Change: What it means for us, our children, and our grandchildren*, MIT Press, Cambridge, MA, 2<sup>nd</sup> edition.

#### Non-refereed reports and publications:

- R19. Larkin, N.K., J.T. Abatzoglou, R. Barbero, **C.A. Kolden**, D. McKenzie, B. Potter, E.N. Stavros, E.A. Steel, and B.J. Stocks. Future megafires and smoke impacts. Final report to the Joint Fire Science Program. Project #11-1-7-4. September 30, 2015.
- R18. **Kolden, C.A.** 2015. Understanding Geospatial Data Products for Assessing Landscape Fire Severity and Effects: MTBS products and future directions. Briefing Report. 6pp.
- R17. Kern, A., E. McLain, S. Honwad, and **C. Kolden**. 2014. University of Idaho Intermountain Climate Education Network. Final Report for NASA Global Climate Change Education Program. 25pp.
- R16. **Kolden, C.A.**, J.T. Abatzoglou, and T.J. Brown. 2012. Developing fuel treatments for a future climate: best practices and use of climate projections. Report for Joint Fire Science Program. 26pp.
- R15. Brown, T.J., **C.A. Kolden**, and J.T. Abatzoglou. 2012. Assessing fuels treatments in southern California National Forests in the context of climate change. Final Project Report for Joint Fire Science Program. 21pp.
- R14. Jandt, R.R., E.A. Miller, D.A. Yokel, M.S. Bret-Harte, and **C.A. Kolden**. 2012. Findings of Anaktuvuk River Fire Recovery Study, 2007-2011. BLM Report.
- R13. **Kolden, C.A.**, J.T. Abatzoglou, and T.J. Brown. 2010. The changing potential for wilderness fire in the 21<sup>st</sup> century. CEFA Report 10-03. 65pp.
- R12. **Kolden, C.A.** 2010. *Characterizing Alaskan Wildfire Regimes through Remotely Sensed Data: Assessments of Large Area Pattern and Trend*. Doctoral dissertation, Clark University. 123pp.
- R11. Abatzoglou, J.T., **C.A. Kolden**, T.J. Brown, and C. Miller. 2008. Intermodel comparison of projected climate-induced changes in extreme fire danger for the northern Rockies. Extended abstract for *Proceedings of The '88 Fires: Yellowstone and Beyond, Jackson, WY, Sept 22-27, 2008*.
- R10. **Kolden, C.A.** and T.J. Brown. 2008. *Using climate information for fuels management*. CEFA Report 08-01. 58pp.
- R9. Brown, T.J. and **C.A. Kolden**. 2007. The science of fire: new technologies at the Desert Research Institute make a difference in wildland fire management. *Wildland Firefighter* September 2007.
- R8. Henson, C. and **C.A. Kolden**. 2007. *Vandenberg Air Force Base Fire Management Plan*. Adaptive Management Services Enterprise Team, 21pp.
- R7. **Kolden, C.A.**, J. Uyehara, and C. Henson. 2007. *Final Report: Fire Effects for Threatened, Endangered and Invasive Species, Vandenberg Air Force Base, California*. Adaptive Management Services Enterprise Team, 27pp.
- R6. Henson, C., and **C.A. Kolden**. 2007. "Final Report: Fire Hazard Assessment of the Upper Ojai and Bell Canyon communities, Ventura County." Adaptive Management Service Enterprise Team, 14pp.
- R5. **Kolden, C.A.** and T.J. Brown. 2006. "Wildfire Risk in the Lake Tahoe Basin: Current Issues and Perspectives." UNR Reynolds School of Journalism. 22pp.
- R4. **Kolden, C.A.** 2005. *Climate Impacts on Escaped Prescribed Fire Occurrence in California and Nevada*. M.S. Thesis, University of Nevada, Reno. 158pp.  
 ([http://www.cefa.dri.edu/Publications/cak\\_thesis.pdf](http://www.cefa.dri.edu/Publications/cak_thesis.pdf))
- R3. **Kolden, C. A.** and T. J. Brown. 2005. Utilization of climate information in prescribed fire. In *Proceedings of the EastFIRE Conference*, George Mason University, May 11-13, 2005, Fairfax, Va.



- R2. Brown, T.J., B.A. Morehouse, and **C.A. Kolden**. 2005. Developing sustainable partnerships between fire scientists and decision-makers. In *Proceedings of the EastFIRE Conference*, George Mason University, May 11-13, 2005, Fairfax, Va.
- R1. **Kolden, C.A.** and T. J. Brown. 2003. Climate Impacts on Prescribed Fire. In *Proceedings of the 5th Symposium on Fire and Forest Meteorology and the 2<sup>nd</sup> International Wildland Fire Congress*. November 16-20, 2003, Orlando, Fl.

**Invited Keynote and Plenary Presentations:**

- K7. **Kolden, C.A.** “Managing for forest resilience under global change: the power of fire refugia.” Restoring the West Conference 2017: What’s working, what’s not? October 17-18, Logan, UT.
- K6. **Kolden, C.A.** “Future Fire.” Wildland Fire Workshop, 41<sup>st</sup> Intertribal Timber Council Annual Symposium. June 26-27, 2017, Yakima, WA.
- K5. **Kolden, C.A.** “Climate drivers of forest pattern: development of wildfire refugia.” University of Montana Plum Creek Distinguished Lecture Series and Northwest Science Association Annual Meeting, March 26-28, 2014, Missoula, Montana.
- K4. **Kolden, C.A.** “Let’s Talk about Climate: Understanding impacts and Opportunities for the 21<sup>st</sup> century.” Western Farm Management Extension Committee Annual Meeting, January 4-6, 2012, Kauai, HI.
- K3. **Kolden, C.A.** “Climate change impacts on humans: Translating Science to fire management.” Presidential Plenary, Association of Pacific Coast Geographers Annual Meeting, October 13-15, 2010, Coeur d’Alene, Idaho.
- K2. **Kolden, C.A.** “Fire, Forest Carbon, and Climate Change: The Science.” Public Interest Environmental Law Conference, February 25-28, 2010, Eugene, OR.
- K1. Abatzoglou, J.T., and **C.A. Kolden**. “Climate change implications for fire and invasive species across American deserts.” Fire and Invasive Species in American Deserts Workshop, December 8-10, 2008, Reno, Nev.

**Professional Meeting Presentations (Past 5 years; Presenter only):**

- Kolden, C.A.** et al. “Refugia under fire: the impacts of climate change on wildfire refugia persistence and resilience.” 102<sup>nd</sup> Ecological Society of America Annual Meeting, Portland, OR, August 5-11, 2017.
- Kolden, C.A.** and J.T. Abatzoglou. “Characterizing dichotomous fire regimes of southern California: climate, vegetation, and topography.” American Geophysical Union Fall Meeting, San Francisco, CA, Dec 9-13, 2013.
- Kolden, C.A.**, J.A. Lutz, et al. “Characterizing unburned area in the western US: challenges for the future.” Association for Fire Ecology 5<sup>th</sup> International Fire Ecology and Management Congress, Portland, OR, December 3-7, 2012.
- Kolden, C.A.**, J.T. Abatzoglou, and T.J. Brown. “Fuel treatment effectiveness under climate change: a case study from southern California.” Association for Fire Ecology 5<sup>th</sup> International Fire Ecology and Management Congress, Portland, OR, December 3-7, 2012.
- Kolden, C.A.** “Remote sensing of terrestrial Contributions to the Nearshore Environment.” Semi-annual meeting of the USGS Eastern Pacific Nearshore Project Investigator Team. September 5-7, 2012, Bodega Bay, CA.
- Kolden, C.A.** and J.A. Lutz. “Characterization and distribution of unburned area within fire perimeters in three western North America forest types.” 97<sup>th</sup> Ecological Society of America Annual Meeting, August 5-11, 2012, Portland, OR.
- Kolden, C.A.** “Wildfire Management and Forecasting Fire Potential: The Roles of Climatology, Perceptions, and Social Networks in the Southwest U.S.” 3<sup>rd</sup> Human Dimensions of Wildland Fire Conference, April 17-19, 2012, Seattle, WA.
- Kolden, C.A.** “Climate Impacts on Wildfire Policy and Practice.” 3<sup>rd</sup> Human Dimensions of Wildland Fire Conference, April 17-19, 2012, Seattle, WA.
- Kolden, C.A.** “The Climate science matrix: an organizational framework for climate education resource

delivery.” EPSCoR Western Tri-State Annual Meeting, April 2-5, 2012, Sun Valley, ID.

**Kolden, C.A.** “Terrestrial Contributions to the Nearshore Environment.” Semi-annual meeting of the USGS Eastern Pacific Nearshore Project Investigator Team. Feb 27-29, 2012, Seattle, WA.

**Kolden, C.A.**, J.A. Lutz, C.H. Key, J. Kane, and J.W. van Wagendonk. “The fallacy of area burned: Climate impacts on unburned area within fire perimeters.” 9<sup>th</sup> Symposium on Fire and Forest Meteorology, October 17-21, 2011, Palm Springs, CA.

#### **Grants and Contracts Awarded:**

- G26. ‘Expanding a web based tool for adaptive rangeland management in Oregon and Idaho,’ USDA, **Kolden (PI)**, (2017-2018; \$55,000)
- G25. ‘Determining the ecological importance of wildfire refugia for post-fire management in the northwestern United States,’ JFSP, A. Meddens (PI), **Kolden (Co-PI)**, (2016-2019; \$256,829)
- G24. ‘Towards improved quantification and prediction of post-fire recovery in conifers,’ JFSP, **Kolden (PI, as advisor to doctoral student researcher)**, (2016-2018; \$25,000)
- G23. ‘Hazards SEES: Advancing Resilience to Compounding Disasters: An Integrated Natural-Human Systems Assessment of Wildfire Vulnerability,’ NSF, **Kolden (PI)**, (2016-2019; \$2.8 million)
- G22. ‘Restoring grasslands through adaptive livestock management: Development and deployment of remote-sensing based tools for forage forecasting and utilization,’ The Nature Conservancy Priscilla Bullitt Collins Trust, J. Fields (TNC; PI), **Kolden (Co-PI)**, (2014-2019; \$254,724 [UI Portion: \$193,229])
- G21. ‘Disappearing refugia: identifying trends and resilience in unburned islands under climate change,’ USGS Northwest Climate Science Center, **Kolden (PI)**, (2014-2017; \$362,811)
- G20. ‘Pole Creek wildfire burn severity assessment,’ USFS Western Wildlands Environmental Threat Assessment Center, **Kolden (PI)** (2013-2018; \$19,623)
- G19. ‘Indices associated with wildland fire part II: management contributions to megafires,’ USFS Pacific Northwest Research Station, **Kolden (PI)** (2013-2014; \$22,535)
- G18. ‘The relative influence of wildfire and invasive species on land cover change,’ Murdock Trust Foundation Partners in Science Program, **Kolden (PI)** (2013-2015; \$15,000)
- G17. ‘Identifying remote methods for monitoring aspen regeneration in a changing climate following prescribed fire,’ Idaho NSF EPSCoR REU program, **Kolden (PI)** (2012-2013; \$5,000)
- G16. ‘Disaggregating wildfire severity and climate change influences on land cover change in the Pacific Northwest,’ NW Climate Science Center (internal UI funding competition for graduate student support), **Kolden (PI)** (2012-2014; \$58,784)
- G15. ‘Collaborative Development of a Climate Change Curriculum for Classrooms in the Intermountain West’, NASA Global Climate Change Education (GCCE) Program – Additional Support for Community Colleges,’ Internal Support from Idaho EPSCoR Track II, **Kolden (PI)** (2012; \$44,874)
- G14. ‘Northern Rockies Fire Science Network, Planning Phase,’ Joint Fire Science Program, V. Wright (USFS; PI), **Kolden (Co-PI)** (2011; \$263,533)
- G13. ‘Northern Rockies Fire Science Network, Implementation Phase,’ Joint Fire Science Program, V. Wright (USFS; PI), **Kolden (Co-PI)** (2012-2013; \$399,451)
- G12. ‘Collaborative Development of a Climate Change Curriculum for Classrooms in the Intermountain West’, NASA Global Climate Change Education (GCCE) Program, S. Mulkey (PI), **Kolden (Co-I)** (2011-2013; \$547,727)
- G11. ‘Climate Impacts on Burn Severity in three forest ecoregions of the U.S.’, USGS Global Change Research, C. Key (USGS, PI), **Kolden (Co-PI)** (2009-2012; \$634,888)
- G10. ‘Coastal Ecosystem Responses to Influences from Land and Sea, USGS Global Climate Change Office, J. Bodkin (USGS, PI), **Kolden (Co-I)** (2008-2013, \$1,381,000)
- G9. ‘Understanding climate impacts on fuels management’, Joint Fire Science Program, T. Brown (PI), **Kolden (Co-PI)** (2008-2010; \$271,800)
- G8. ‘Determining regional characteristics of Wildland Fire Use thresholds based on climate and fire danger’, Agreement with the Aldo Leopold Wilderness Research Institute, T. Brown (PI), **Kolden (Co-PI)** (2009; \$70,000)

- G7. 'Fire and Climate Change in the Western US: A new synthesis for land management,' Joint Fire Science Program, D. Falk (PI), **Kolden (Collaborator)** (2009-2010; \$197,119)
- G6. 'Assessing the impacts of climate on wildfire extent and severity in the northwestern US,' Geller Research Fellowship, Marsh Institute, Clark University, **Kolden (PI)** (2007; \$2,000)
- G5. 'Inaugural Nevada Wildland Fire Conference,' Brigham Young University Charles Redd Center for Western Studies Public Programming Grant, **Kolden (PI)** (2006; \$1,100)
- G4. 'Instructional Materials for Geographic Information Science Education,' University of Nevada, Reno, Instructional Enhancement Grant, **Kolden (Co-PI)** (2006; \$533)
- G3. 'Assessing Wildfire Risk and Policy and the Lake Tahoe Basin,' University of Nevada, Reno, Reynolds School of Journalism, T. Brown (PI), **Kolden (Co-PI)** (2006; \$2,500)
- G2. 'Economic impacts of GPS/GIS methods for wildfire mapping,' Association of Pacific Coast Geographers, Margaret Trussell Research Grant, **Kolden (PI)** (2004; \$1,000)
- G1. 'Fire behavior in sagebrush-steppe ecosystems,' University of Nevada, Reno, Graduate Students Association Research Grant, **Kolden (PI)** (2003; \$2,400)

#### **Honors and Awards:**

- University of Nevada, Reno, College of Science Young Alumni Award, 2014
- USGS STAR (Special Thanks for Achieving Results) Award, 2009
- NASA-MSU Professional Enhancement Grant to present at US-IALE Annual Meeting 2009, January 2009
- Best Master's degree-level paper, Biogeography Specialty Group, Association of American Geographers Annual Meeting; April 2005
- Best Graduate Paper, California Geographical Society Annual Meeting, April 2005
- Best Graduate Poster, Univ. of Nevada, Reno, College of Science Annual Poster Competition; April 2005
- Best Graduate Poster in the Sciences, Univ. of Nevada, Reno, Graduate Students' Association Annual Poster Competition; April 2005
- President's Award for Outstanding Paper by a Master's Student; Association of Pacific Coast Geographers Annual Meeting; September 2003.
- Outstanding Graduate Student; Univ. of Nevada, Reno, Graduate Students' Association; May 2003

#### **SERVICE:**

##### **Major Committee Assignments:**

###### **University of Idaho:**

- Faculty Affairs Committee, 2017-2019
- Forest, Rangeland, and Fire Sciences Faculty Search Committee, 2016-2017
- Geography Dept. Faculty Search Committee, 2014-2015
- Geography Dept. Faculty Search Committee (2), 2013-2014
- Geography Dept. Seminar Series Committee member, 2012-2013
- Geography Dept. Graduate Admissions Chair, 2013-2014
- Geography Dept. Graduate Admission Committee, 2012
- Department of Forest, Range, and Fire Science Faculty search committee, 2013-2014
- Desert Research Institute, Reno, NV, Post-doctoral fellow search committee, 2013
- Department of Forest, Range, and Fire Science Instructor search committee, 2012
- Department of Geography Chair Search Committee, 2011-2012
- Search Committee for J. Hicke employee, 2011
- Search Committee for ICE Net post-doctoral associate, 2011

**Other:**

Firefighters United for Safety, Ethics, and the Environment, Board member (Term: 2009-2014)

Odyssey Camp faculty organizer, UI College of Science, May 23&24, 2013

Workshop on Integrating climate change into fuels management (Organizer), Association for Fire Ecology 5<sup>th</sup> International Fire Ecology and Management Congress, Portland, OR, December 3, 2012

Invited Seminar, University of Montana College of Forestry, Missoula, MT, Nov. 2, 2012

Northwest Climate Education Resources Workshop (Organizer), Moscow, ID, June 18-22, 2012

Organizer and Session Chair: "Climate Education Resources," EPSCoR Western Tri-State Annual Meeting, Sun Valley, ID, 2012

Workshop on fire/climate (Organizer), Palm Springs, CA, October 2011

Steering Committee Member and Field Trip Organizer, American Meteorological Society Fire and Forest Meteorology Committee, 2009-present

Field Trip Organizer, APCG Annual Meeting, Coeur d'Alene, ID 2010

Co-Organizer and Session Chair: "Wildfires in a changing environment," Annual Meeting of the Association of American Geographers, Boston, MA 2008

Conference Coordinator and Steering Committee Member, Nevada Wildland Fire Research and Outreach Conference, 2006.

Member of UNR Geography Department Faculty Search Committee, 2003

**Professional and Scholarly Organizations**

- Association of Pacific Coast Geographers
  - Field Trip Organizer, APCG Annual Meeting, Coeur d'Alene, ID 2010
- International Association of Wildland Fire
- Associate Editor/Editorial Board
  - *Fire*
  - *The California Geographer*
  - *Fire Ecology*
- Peer Review
  - *PlosOne*
  - *Remote Sensing*
  - *Proceedings of the National Academy of Sciences*
  - *Forest Ecology and Management*
  - *The California Geographer*
  - *International Journal of Wildland Fire*
  - *Fire Ecology*
  - *Professional Geographer*
  - *Remote Sensing of Environment*
  - *Ecosphere*
  - *Journal of Environmental Management*
  - *National Science Foundation*
- Association for Fire Ecology
  - Board Member 2009-2010
  - Conference Committee 2007-2010
  - Student representative and membership committee chair, 2003-2006
- Student Association for Fire Ecology, National chapter, 2002-2005
  - Co-chair of National chapter board, 2003-2004
  - Secretary of National chapter board, 2002-2003
  - Founder and Co-chair of UNR chapter, 2002-2004

- Volunteers chair, 2003

**Outreach Service:**

- Invited public lecture seminar/outreach, High Desert Museum of Natural History, Bend, OR, November 2016
- Fire as a Teacher (How I learned to stop worrying and love wildfire), Invited Outreach Seminar, Malcolm M. Renfrew Interdisciplinary Colloquium, University of Idaho, Moscow, ID, February 4, 2014
- Integrating Climate Science and Climate Change into Your Courses, Seminar at College of Western Idaho, Nampa, ID, April 26, 2013
- Invited Seminar, Moscow Science on Tap, Moscow, ID, May 21, 2013
- Workshop on Integrating climate change into fuels management (Organizer), Association for Fire Ecology 5<sup>th</sup> International Fire Ecology and Management Congress, Portland, OR, December 3, 2012
- Invited Seminar, University of Montana College of Forestry, Missoula, MT, November 2, 2012
- Northwest Climate Education Resources Workshop (Organizer), Moscow, ID, June 18-22, 2012
- Organizer and Session Chair: "Climate Education Resources," EPSCoR Western Tri-State Annual Meeting, Sun Valley, ID, 2012
- Workshop on fire/climate (Organizer), Palm Springs, CA, October 2011
- Co-Organizer and Session Chair: "Wildfires in a changing environment," Annual Meeting of the Association of American Geographers, Boston, MA, April 2008
- Invited Speaker, USGS Alaska Burn Severity Workshop, February 2008
- Invited Speaker, UNR Geography Department Colloquium, February 2008
- Invited Speaker, USFS Fuels Management Conference, Reno, NV, February 2008.
- Invited Speaker, Society of American Foresters Reno chapter, April 2006
- Invited Speaker, UNR Journalism School Tahoe Fire Risk Workshop, April 2006
- Invited speaker, Desert Research Institute Visiting Dignitaries Field Trip, June 2005