

Crystal A. Kolden

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SUMMARY

I am a Pyrogeographer and fire scientist with over 20 years of experience in wildfire science, education, and outreach. I am a Certified Fire Ecologist by the Association of Fire Ecology.

EDUCATION

Ph.D., Geography, Clark University, Worcester, MA, 2010
M.S., Geography, University of Nevada, Reno, 2005
A.B. *cum laude*, History, Cornell University, Ithaca, NY, 1999

PROFESSIONAL APPOINTMENTS

2020 – present Assistant Professor, Gallo School of Management, Univ. of California, Merced
2017 – 2020 Associate Professor, College of Natural Resources, Univ. Idaho
2010 – 2017 Assistant Professor of Geography, Univ. Idaho
2007 – 2010 Landscape Ecologist, US Geological Survey, Anchorage, AK
2004 – 2012 Affiliate Research Scientist, Desert Research Institute, Reno, NV
2003 – 2006 Fire Ecologist, USDA Forest Service, Washington Office

REFEREED PUBLICATIONS

(# - indicates equal contribution, * - indicates student advisee)

Refereed Publications (82 refereed articles, h-index: 31, i10-index: 55)

- Picotte, J*., C.A. Cansler, **C.A. Kolden**, J.A. Lutz, C. Key, N. Benson, and K.M. Robertson. In press at *Remote Sensing of Environment*. Determination of burn severity models ranging from regional to national scales for the conterminous United States.
- Prichard, S., P. Hessburg, R.K. Hagmann, N. Povak, S. Dobrowski, M. Hurteau, V. Kane, R. Keane, L. Kobziar, **C.A. Kolden**, M. North, S. Parks, H. Safford, J. Stevens, L. Yocom, D. Churchill, R. Gray, D. Huffman, F. Lake, P. Khatri-Chhetri, Pratima. In press at *Ecological Applications*. Adapting western North American forests to climate change and wildfires: ten common questions.
- Jansen, V.S.*, **C.A. Kolden**, H.J. Schmalz, J.W. Karl and R.V. Taylor. 2021. Using Satellite-Based Vegetation Data for Short-Term Grazing Monitoring to Inform Adaptive Management. *Rangeland Ecology & Management*, 76, 30-42.
<https://doi.org/10.1016/j.rama.2021.01.006>
- Hanan, E.J., J. Ren, C.L. Tague, **C.A. Kolden**, J.T. Abatzoglou, R.R. Bart, M.C. Kennedy, M. Liu, M. and J.C. Adam. 2021. How climate change and fire exclusion drive wildfire regimes at actionable scales. *Environmental Research Letters* 16, 024051.
<https://doi.org/10.1088/1748-9326/abd78e>
- Partelli Feltrin, R.*, A.M.S. Smith, H.C. Adams, **C.A. Kolden**, and D. Johnson. 2021. Short- and long-term effects of fire on stem hydraulics in *Pinus ponderosa* saplings. *Plant, Cell, & Environment*. <https://doi.org/10.1111/pce.13881>

- Abatzoglou, J.T., C.S. Juang, A.P. Williams, **C.A. Kolden**, and A.L. Westerling. 2021. Increasing synchronous fire danger in forests of the western United States. *Geophysical Research Letters*, 48(2), e2020GL091377. <https://doi.org/10.1029/2020GL091377>
- Kolden, C.** 2020. Wildfires: count lives and homes, not hectares burnt. *Nature*, 586(7827), 9. ^Invited.
- Partelli Feltrin, R. *, D. Johnson, A.M. Sparks, H.C. Adams, **C.A. Kolden**, A.S. Nelson, and A.M.S. Smith. 2020. Drought increases vulnerability of *Pinus ponderosa* saplings to fire-induced mortality. *Fire* 3, 56.
- Lutz, J.A., S. Struckman, T.J. Furniss, C.A. Cansler, S.J. Germain, L.L. Yocom, D.J. McAvoy, **C.A. Kolden**, A.M.S. Smith, M.E. Swanson, A.J. Larson. 2020. The importance of large-diameter trees to woody biomass and surface fuel following reintroduced fire. *Ecological Processes*.
- Bowman, D.M.J.S., **C.A. Kolden**, J.T. Abatzoglou, F.H. Johnston, G.R. van der Werf, and M. Flanigan. 2020. Vegetation fires in the Anthropocene. *Nature Reviews Earth and Environment* 1, 500-515.
- Cansler, C.A., Hood, S.M., Varner, J.M., van Mantgem, P.J., Agne, M.C., Andrus, R.A., Ayres, M.P., Ayres, B.D., Bakker, J.D., Battaglia, M.A., Bentz, B.J., ... **Kolden, C.A.** ... et al. 2020. The Fire and tree Mortality Database, for empirical modeling of individual tree mortality after fire. *Scientific data*, 7(1), pp.1-14.
- Abatzoglou, J.T., C. Smith, D. Swain, T. Ptak, and **C.A. Kolden**. 2020. Population exposure to pre-emptive de-energization aimed at averting wildfires in Northern California. *Environmental Research Letters*. doi.org/10.1088/1748-9326/aba135/meta
- Krawchuck, M.A., G. Meigs, J. Cartwright, J. Coop, R. Davis, A. Holz, **C.A. Kolden**, A.H.J. Meddens. 2020. Disturbance refugia within mosaics of forest fire, drought, and insect outbreaks. *Frontiers in Ecology and the Environment*. 18(5), pp.235-244.
- Goss, M., D.L. Swain, A. Sarhadi, **C.A. Kolden**, J.T. Abatzoglou, A.P. Williams, N.S. Diffenbaugh. 2020. Climate change is increasing the risk of extreme autumn wildfire conditions across California. *Environmental Research Letters*. <https://doi.org/10.1088/1748-9326/ab83a7>
- Jansen, V.S. *, **C.A. Kolden**, H.E. Greaves, J.U. Eitel. 2019. Lidar provides novel insights into the effect of pixel size and grazing intensity on measures of spatial heterogeneity in a native bunchgrass ecosystem. *Remote Sensing of Environment*. <https://doi.org/10.1016/j.rse.2019.111432>
- Stenzel, J. *, K. Bartowitz, M. Hartmann, J.A. Lutz, **C.A. Kolden**, A.M.S. Smith, B. Law, M. Swanson, A. Larson, W. Parton, T. Hudiburg. 2019. Fixing a snag in estimating carbon emissions from wildfire. *Global Change Biology*. <https://doi.org/10.1111/gcb.14716>
- Martinez, A.J. *, A.J.H. Meddens, **C.A. Kolden**, A.T. Hudak. An assessment of fire refugia importance criteria ranked by land managers. *Fire*, 2, 27. <https://doi.org/10.3390/fire2020027>
- McWethy, D.B., T. Schoennagel, P.E. Higuera, M. Krawchuk, B.J. Harvey, E.C. Metcalf, C. Schultz, C. Miller, A.L. Metcalf, B. Buma, A. Virapongse, J.C. Kulig, R.C. Stedman, Z. Ratajczak, C.R. Nelson, **C.A. Kolden**. 2019. Rethinking resilience to wildfire. *Nature Sustainability*. <https://doi.org/10.1038/s41893-019-0353-8>
- Kolden, C.A.** 2019. We're not doing enough prescribed fire to reduce wildfire risk in the western US. *Fire*, 2, 30. <https://doi.org/10.3390/fire2020030>
- Steady, W.D., R.P. Feltrin, D.M. Johnson, A.M. Sparks, **C.A. Kolden**, A.F. Talhelm, J.A. Lutz, L. Boschetti, A.T. Hudak, A.S. Nelson, A.M.S. Smith. 2019. The Survival of *Pinus ponderosa*

- Saplings Subjected to Increasing Levels of Fire Behavior and Impacts on Post-Fire Growth. *Fire* 2, 23. <https://doi.org/10.3390/fire2020023>
- Haugo, R.D., B.S. Kellogg, C.A. Cansler, **C.A. Kolden**, K.B. Kemp, J. Robertson, K.L. Metlen, N.M. Vaillant, C.M. Restaino. 2019. The Missing Fire: Quantifying human exclusion of wildfire in Pacific Northwest forests, USA. *Ecosphere*, 10, e02702. doi.org/10.1002/ecs2.2702
- Martinez, A.J.*, A.J.H. Meddens, **C.A. Kolden**, E.K. Strand, A.T. Hudak. 2019. Characterizing persistent unburned islands within the Inland Northwest. *Fire Ecology* 15: 20. <https://fireecology.springeropen.com/articles/10.1186/s42408-019-0036-x>
- Kolden, C.A.** and C. Henson. 2019. A Socio-Ecological Approach to Mitigating Wildfire Vulnerability in the Wildland Urban Interface: A Case Study from the 2017 Thomas Fire. *Fire*, 2, 9. <https://doi.org/10.3390/fire2010009>
- Kliskey, A., J.T. Abatzoglou, L. Alessa, **C.A. Kolden**, D. Hoekema, B. Moore, S. Gilmore, G. Austin. 2019. Planning for Idaho's Waterscapes: A review of historical drivers and outlook for the next 50 years. *Environmental Science and Policy*, 194, 191-201. <https://doi.org/10.1016/j.envsci.2019.01.009>
- Blomdahl, E., **C.A. Kolden**, A.H.J. Meddens, and J.A. Lutz. 2019. The importance of small fire refugia in the central Sierra Nevada, California, USA. *Forest Ecology and Management*. <https://doi.org/10.1016/j.foreco.2018.10.038>
- Bowman, D.M.J.S., A. Moreira-Muñoz, **C.A. Kolden**, R.O. Chávez, A.A. Muñoz, F. Salinas, A. González-Reyes, R. Rocco, F. de la Barrera, G.J. Williamson, F.H. Johnston, N. Borchers, J.T. Abatzoglou. 2019. Drought and land use caused globally unprecedented extreme fires in Mediterranean Chile. *Ambio*. <https://doi.org/10.1007/s13280-018-1084-1>
- Smith, A.M.S.; **C.A. Kolden**, D.M.J.S. Bowman. 2018. Biomimicry can help humans to co-exist sustainably with fire. *Nature Ecology & Evolution*. <https://doi.org/10.1038/s41559-018-0712-2>
- Smith, A.M.S., **C.A. Kolden**, S.J. Prichard, R.W. Gray, P.F. Hessburg, J.K. Balch. 2018. Recognizing Women Leaders in Fire Science. *Fire* 1, 30. <https://doi.org/10.3390/fire1020030>
- Meddens, A.H.J., **C.A. Kolden**, J.A. Lutz, A.M.S. Smith, C.A. Cansler, J.T. Abatzoglou, G.W. Meigs, W.M. Downing, M.A. Krawchuk. 2018. Fire refugia: What are they and why do they matter for global change? *BioScience*. <https://doi.org/10.1093/biosci/biy103>
- Abatzoglou, J.T., A.P. Williams, L. Boschetti, M. Zubkova, **C.A. Kolden**. 2018. Global patterns of interannual climate-fire relationships. *Global Change Biology*. <https://doi.org/10.1111/gcb.14405>
- Jansen, V.S.*, **C.A. Kolden**, H. Schmalz. 2018. The development of near real-time biomass and cover estimates for adaptive rangeland management using Landsat 7 and Landsat 8 surface reflectance products. *Remote Sensing*. <http://www.mdpi.com/2072-4292/10/7/1057/htm>
- Kolden, C.A.**, and J.T. Abatzoglou. 2018. Spatial distribution of wildfires ignited under katabatic- versus non-katabatic winds in Mediterranean southern California USA. *Fire*. 1(2), 19; <https://doi.org/10.3390/fire1020019>
- Sparks, A.M.*, A.F. Talhelm, R.P. Feltrin, A.M.S. Smith, D.M. Johnson, **C.A. Kolden**, L. Boschetti. 2018. An experimental assessment of the impact of drought and fire on western larch mortality, injury, and recovery. *International Journal of Wildland Fire*. doi.org/10.1071/WF18044

- Abatzoglou, J.T., J.K. Balch, B.A. Bradley, and **C.A. Kolden**. 2018. Human-related ignitions concurrent with high winds promote large wildfires across the US. *International Journal of Wildland Fire*. doi.org/10.1071/WF17149
- McCarley, T.R.*, A.M.S. Smith, **C.A. Kolden**, and J. Kreitler. 2018. Evaluating the mid-infrared bi-spectral index for improved assessment of low-severity fire effects in a conifer forest. *International Journal of Wildland Fire*. doi.org/10.1071/WF17137
- Sparks, A.M.*, **Kolden, C.A.**, Smith, A.M., Boschetti, L., Johnson, D.M. and Cochrane, M.A., 2018. Fire intensity impacts on post-fire temperate coniferous forest net primary productivity. *Biogeosciences*, 15(4), p.1173. <https://doi.org/10.5194/bg-15-1173-2018>
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- Meddens, A.H.J., **C.A. Kolden**, J.A. Lutz, J.T. Abatzoglou, and A.T. Hudak. 2018. Spatiotemporal patterns of unburned areas within fire perimeters in the northwestern United States from 1984 to 2014. *Ecosphere* 9(2):e02029. <http://doi.org/10.1002/ecs2.2029>
- 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.
- 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.
- 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>.
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- 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.
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- 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>
- 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>
- 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
- 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

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- 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
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- 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
- 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. doi.org/10.1093/biosci/biv182
- 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
- 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
- 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>
- Kolden, C.A.**, J.T. Abatzoglou, J.A. Lutz, C.A. Cansler, J.T. Kane, J.W. Van Wagendonk, and C.H. Key. 2015. Climate contributors to forest mosaics: ecological persistence following wildfire. *Northwest Science* 89(3).
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- 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*.
- 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.

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- 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.
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- 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.
- 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.
- 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>
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- 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.
- Kolden, C.A.**, J.A. Lutz, C.H. Key, J.T. Kane, and J.W., van Wagtenonk. 2012. Mapped versus actual burned area within wildfire perimeters: characterizing the unburned. *Forest Ecology and Management*, 286: 38-47. 10.1016/j.foreco.2012.08.020
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- 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. 10.2111/REM-D-09-00151.1

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- 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. 10.1657/1938-4246-41.3.309
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Submitted/In review

- Abatzoglou, J.T., D.S. Battisti, A.P. Williams, W.D. Hanson, B.J. Harvey, and C.A. Kolden. In review at *Science Advances*. Continued increases in western US forest fire despite growing fuel constraints.
- Ren, J., J. Adam, J.A. Hicke, E. Hanan, C. Tague, M. Liu, C. Kolden, and J.T. Abatzoglou. In revisions for *Hydrology and Earth System Sciences*. How does water yield respond to mountain pine beetle infestation in a semiarid forest?

BOOK CHAPTERS

- 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, 2nd edition.

REPORTS AND NON-REFEREED PUBLICATIONS

- Jensen Hughes. 2021 Community Wildfire Protection Plan for City of Malibu, California. (contributor)
- Jensen Hughes. 2021. Community Wildfire Protection Plan for Carpinteria-Summerland, California. (contributor)
- City of Santa Rosa Fire Department and GeoElements, LLC (C. Henson, **C. Kolden**, D. Kerr, S. Beckman). 2020. Community Wildfire Protection Plan for City of Santa Rosa, California.
- Montecito Fire Protection District and GeoElements, LLC (C. Henson, **C. Kolden**, D. Kerr, S. Beckman). 2018. A defensible community? A retrospective report of Montecito Fire District's wildland fire program during the 2017 Thomas Fire. October 23, 2018. 72 pp. <https://bit.ly/2r30WaH>
- Santa Barbara County and GeoElements, LLC (C. Henson, **C. Kolden**, D. Kerr, S. Beckman). 2018. Community Wildfire Protection Plan for East Goleta Valley and San Marcos Pass, California.
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- 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.
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- 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*.
- Kolden, C.A.** and T.J. Brown. 2008. *Using climate information for fuels management*. CEFA Report 08-01. 58pp.
- 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.
- Henson, C. and **C.A. Kolden**. 2007. *Vandenberg Air Force Base Fire Management Plan*. Adaptive Management Services Enterprise Team, 21pp.
- 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.
- 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.
- 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.
- Kolden, C.A.** 2005. *Climate Impacts on Escaped Prescribed Fire Occurrence in California and Nevada*. M.S. Thesis, University of Nevada, Reno. 158pp.
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- 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.

- 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.
- 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 2nd International Wildland Fire Congress*. November 16-20, 2003, Orlando, Fl.

AWARDS AND HONORS

- 2019 Mid-Career Award, University of Idaho
- 2018 Visiting Scholar Award, University of Tasmania
- 2014 University of Nevada, Reno, College of Science Young Alumni Award
- 2009 USGS STAR (Special Thanks for Achieving Results) Award
- 2009 NASA-MSU Professional Enhancement Award
- 2005 Best Master's degree-level paper, Biogeography Specialty Group, Association of American Geographers Annual Meeting
- 2005 Best Graduate Paper, California Geographical Society Annual Meeting
- 2005 Best Graduate Poster, Univ. of Nevada, Reno, College of Science Annual Poster Competition
- 2005 Best Graduate Poster in the Sciences, Univ. of Nevada, Reno, Graduate Students' Association Annual Poster Competition
- 2003 President's Award for Outstanding Paper by a Master's Student; Association of Pacific Coast Geographers Annual Meeting
- 2003 Outstanding Graduate Student; Univ. of Nevada, Reno, Graduate Students' Association

GRANTS

Total funding: \$10,718,780

Lead PI for **\$4,198,756** in funding, Co-Investigator for additional **\$6,520,024**

	<u>Source, Title, Role</u>	<u>Amount</u>
2021-2023	Addressing California communities doubly vulnerable to catastrophic wildfires, UC Office of the President (Lead PI)	\$808,629
2020-2021	RAPID: Collaborative Research: In-situ forest ecosystem response to wildfire, NSF (Co-PI)	\$126,029
2019-2023	Scoping grant: Coupling Earth observation data and ecohydrological modeling to predict disturbance-induced runoff and sedimentation for municipal water quantity and quality planning, NASA (Co-PI)	\$150,000
2018-2021	Deploying CERT: Integrating satellite and field measures for improved grazingland management at ranch scales, USDA-CIG (Co-PI)	\$661,118

2017-2018	Expanding a web-based tool for adaptive rangeland management in Oregon and Idaho, USDA, (Lead PI)	\$55,000
2016-2019	Determining the ecological importance of wildfire refugia for post-fire management in the northwestern United States, JFSP, (Co-PI)	\$256,829
2016-2018	Towards improved quantification and prediction of post-fire recovery in conifers, JFSP, (Lead PI, as advisor to doctoral student researcher)	\$25,000
2015-2020	NSF Hazards SEES: Advancing Resilience to Compounding Disasters: An Integrated Natural-Human Systems Assessment of Wildfire Vulnerability, National Science Foundation (Lead PI)	\$2,775,000
2014-2019	The Nature Conservancy Priscilla Bullitt Collins Trust: Restoring grasslands through adaptive livestock management: Development and deployment of remote-sensing based tools for forage forecasting and utilization (Co-PI, UI Lead)	\$254,724 [UI Portion: \$193, 229]
2014-2017	USGS Northwest Climate Science Center: Disappearing refugia: identifying trends and resilience in unburned islands under climate change (Lead PI)	\$362,811
2013-2016	USFS Western Wildlands Environmental Threat Assessment Center: Pole Creek wildfire burn severity assessment (Lead PI)	\$19,623
2013-2014	USFS Pacific Northwest Research Station: Indices associated with wildland fire part II: management contributions to megafires (Lead PI)	\$22,535
2013-2015	Murdock Trust Foundation Partners in Science Program: The relative influence of wildfire and invasive species on land cover change (Lead PI)	\$15,000
2012-2013	Idaho NSF EPSCoR REU program: Identifying remote methods for monitoring aspen regeneration following prescribed fire (Lead PI)	\$5,000
2012-2014	NW Climate Science Center (graduate student support): Disaggregating wildfire severity and climate change influences on land cover change in the Pacific Northwest (Lead PI)	\$58,784
2012-2013	Joint Fire Science Program: Northern Rockies Fire Science Network, Implementation Phase (Co-PI)	\$399,451
2012		\$44,874

	Idaho NSF EPSCoR: Collaborative Development of a Climate Change Curriculum for Classrooms in the Intermountain West- Additional Support for Community Colleges (Lead PI)	
2011		\$263,533
	Joint Fire Science Program: Northern Rockies Fire Science Network, Planning Phase (Co-PI, UI Lead)	
2011-2014		\$547,727
	NASA Global Climate Change Education (GCCE) Program: Collaborative Development of a Climate Change Curriculum for Classrooms in the Intermountain West (Co-I)	
2009-2013		\$634,888
	USGS Global Climate Change Office: Climate Impacts on Burn Severity in three forest ecoregions of the U.S., USGS Global Change Research (Co-PI)	
2008-2013		\$1,381,000
	USGS Global Climate Change Office: Coastal Ecosystem Responses to Influences from Land and Sea (Co-I)	
2008-2010		\$271,800
	Joint Fire Science Program: Understanding climate impacts on fuels management (Co-PI)	
2009-2010		\$197,119
	Joint Fire Science Program: Fire and Climate Change in the Western US: A new synthesis for land management (Funded Collaborator)	
2009		\$70,000
	Aldo Leopold Wilderness Research Institute: Determining regional characteristics of Wildland Fire Use thresholds based on climate and fire danger (Co-PI)	
2007		\$2,000
	Clark University, Marsh Institute, Geller Research Fellowship	
2006		\$1,100
	Brigham Young University Charles Redd Center for Western Studies Public Programming Grant	
2006		\$533
	University of Nevada, Reno, Instructional Enhancement Grant	
2006		\$2,500
	University of Nevada, Reno, Reynolds School of Journalism Grant	
2004		\$1,000
	Association of Pacific Coast Geographers, Margaret Trussell Research Grant	
2003		\$2,400
	University of Nevada, Reno, Graduate Students Association Research Grant	

INVITED KEYNOTE AND PLENARY PRESENTATIONS

- Kolden, C.A.** “Rethinking how we measure wildfires: putting the 2020 Fire Season in context,” Invited Keynote Speaker, Western Forestry Graduate Research Symposium, Oregon State University, Corvallis, OR, April 16, 2021.
- Kolden, C.A.** “Wildfire resilience across ecosystems under climate change,” Invited Keynote Speaker, Western Forestry Graduate Research Symposium, Oregon State University, Corvallis, OR, April 24, 2020. (Cancelled – COVID)
- Kolden, C.A.** “What does wildfire resilience look like?” Advancing WUI Resilience, NFPA, San Francisco, CA, March 3-4, 2020.
- Kolden, C.A.** “Wildfire disasters locally and globally: learning from global trends to plan for future bushfires in Tasmania.” Invited keynote speaker, University of Tasmania panel and public lecture on 2019 Tasmania bushfires, February 27, 2019, Hobart, Tasmania.
- Kolden, C.A.** “Extreme fires globally: the new ‘normal’?” National Wildfire Litigation Conference, April 27-29, 2018, San Diego, CA, Invited Panelist Presenter.
- 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. Invited Plenary Speaker.
- Kolden, C.A.** “Future Fire.” Wildland Fire Workshop, 41st Intertribal Timber Council Annual Symposium. June 26-27, 2017, Yakima, WA. Invited Plenary Speaker.
- Kolden, C.A.** “Climate drivers of forest pattern: development of wildfire refugia.” University of Montana Plum Creek Distinguished Lecture Series and Northwest Scientific Association Annual Meeting, March 26-28, 2014, Missoula, Montana. Invited Plenary Speaker.
- Kolden, C.A.** “Let’s Talk about Climate: Understanding impacts and Opportunities for the 21st century.” Western Farm Management Extension Committee Annual Meeting, January 4-6, 2012, Kauai, HI. Invited Keynote Speaker.
- 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. Invited Plenary Speaker.
- 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. Invited Plenary Speaker.

INVITED LECTURES/ PANELS/ PRESENTATIONS (last 3 years only)

2021. Invited panelist, UCOP Wildfire Symposium, June 2021.
2021. Invited panelist, Stanford University Woods Institute for the Environment Special Event, “A New Strategy for Addressing the Wildfire Epidemic in California,” April 2021.
2021. Invited lecture, University of Idaho, Dept of Fish and Wildlife, April 2021.
2021. Invited panel participant, UC Center for Climate Justice Kick-off, April 2021.
2021. Invited lecture, University of California Berkeley, Dept of City and Urban Planning, March 2021.
2021. Invited presenter/panelist, California Tree Mortality Workshop, March 2021.
2021. Invited seminar, Univ. of Arizona, Dept of Geography, February 2021.
2020. Invited lecture, University of California Berkeley, Dept of City and Urban Planning, October 2020.
2020. Invited seminar, UC Merced Environmental Systems brown bag, September 2020.

2020. Invited seminar, UCLA Geoscience Colloquium series, January 2020.
2019. Invited seminar, UC Merced MCS program, November 2019
2019. Invited seminar, Missoula Fire Lab Seminar Series, May 15, 2019
2019. Invited seminar, Washington State University School of Environment, March 2019
2019. Invited seminar, UC Merced College of Engineering, March 2019
2019. Invited seminar, The Fire Centre seminar series, University of Tasmania, Hobart, Tasmania, Australia, February 2019

CONFERENCES AND WORKSHOPS ORGANIZED

Organizer and Panelist, Wildfire Risk to Portland Water Bureau Municipal Watersheds, Portland, OR, May 5-7, 2019

Organizer and Panelist, Wildfire Risk to Seattle Public Utilities Municipal Watersheds, North Bend, WA, November 5-6, 2018

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

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

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

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

Field Workshop on Remote Sensing of Burn Severity in Alaska (Organizer), Fairbanks, AK, August 8-13, 2009

Inaugural Nevada Wildland Fire Science and Outreach Conference (Conference Coordinator), May 25, 2006

OUTREACH ACTIVITIES

Co-founder, co-organizer, and co-host (with two other UC colleagues) of the California Wildfire Seminar Series (Sept 2020-present), a virtual weekly seminar that averages approximately 200 attendees every week, including academics, researchers, students, journalists, and members of the general public.

<https://frg.berkeley.edu/spring-2021-california-fire-science-seminar-series/>

- Interviewed/filmed for a National Geographic documentary on wildfire and climate change (forthcoming).
- Public lecture for East Fresno Rotary, Fresno, CA, April 21, 2021.
- Public lecture Santa Barbara Fire Safe Council, Santa Barbara, CA, February 25, 2021.

- Public lecture for Modesto Rotary, Modesto, CA, February 23, 2021.
- Interviewed/filmed for the documentary “California Healing” by filmmaker Jim Thebaut of The Chronicles Group (forthcoming).
- Spoke to AP Environmental Science club at Plymouth HS (Massachusetts), November 12, 2020.
- Public lecture/panel for Quest Science Center in Livermore, November 10, 2020.
- Brown Bag seminar for Climate Central journalists, July 24, 2020.
- Public presentation for RepublicEN organization, February 26, 2020.
- Interviewed/filmed for a documentary on California and climate change for Al Jazeera; “[Donald Trump and California: A battle of wildfires and wills](#)”, February 2020
- Public presentation on wildfire risk and climate change in Malibu. Malibu, CA, February 22, 2020.
- Public lecture on future wildfire and climate change in Santa Barbara County, CA, October 18, 2018
- Public presentation of post-Thomas Fire analysis results for Montecito Fire District, CA, October 17, 2018
- November 8, 2016: Invited seminar/outreach, High Desert Museum of Natural History, Bend, OR

MEDIA

I regularly receive more media requests than I can fulfill, particularly during fire season. Over the past 5 years, I have received an average of 60-80 media requests per year, and I am able to fulfill approximately 75% of these requests.

- 2021 US wildfires:
[The Washington Post](#)
- 2020 Western US wildfire season: I received approximately 50-60 media requests from July – December 2020, and made appearances in outlets including:
[The Washington Post \(invited op-ed\)](#)
[The New York Times](#)
[The Atlantic](#)
[CBC \(Canadian Broadcasting Corporation\)](#)
ABC (Australian Broadcasting Corp)
[InvestigateWest](#)
NPR/[CapRadio](#) (2) (3)
[Bloomberg](#)
[ProPublica](#) (2)
Multiple California-based radio stations
National affiliate-television stations in the SF Bay Area and Los Angeles
Podcasts, including:
[Bioneers](#)
[Life with Fire](#)
[Sea Change Radio](#)
[Let’s Talk about Water](#)

- November 2019 - January 2020 – Australia bushfires
 - [PRI Interview with NPR's Steve Curwood](#)
 - [NPR Science Friday with Ira Flatow](#)
 - [Interview in Washington Post](#)
 - [Interview in NYT](#)
 - [Interview in The Verge](#)
- [Interview with Deseret News](#)
- May 2019 - my [paper on prescribed fire in *Fire*](#) in collaboration with Climate Central
 - [Climate Central Reporting](#)
 - [Interview with PBS Newshour Weekend](#)
 - [Interview in the Sacramento Bee](#)
 - [Interview in the LA Times](#)
 - [Interview with NBC San Diego](#)
 - [Interview with Popular Science](#)
 - [Article in Southerly Mag](#)
 - [Interview with the Lewiston Tribune](#)
 - [Article in NJ.com News outlet](#)
 - [Radio interview with Utah Public Radio](#)
 - [Radio Interview with NPR Atlanta WABE](#)
 - [Radio Interview with Public News Service](#)
- January 2019 Tasmania bushfires:
 - [Talking point in The Mercury \(Hobart\) \(link is to a reproduction as original is behind a paywall\)](#)
 - [Interview with the Launceston Examiner](#)
 - ABC Radio Hobart Morning Show interview with Ryk Goddard
 - ABC Radio Hobart Morning Show interview with Leon Compton
 - [Seminar given at the University of Tasmania Fire Centre, February 2019](#)
 - [Interview in NYT](#)
 - [Women in Fire Science article in National Tribune](#)
- Related to the November 2018 California Fires:
 - [NYT Op-ed](#)
 - [Guardian Op-ed](#)
 - [Interview with PRI's The World with Marco Werman](#)
 - [AP Article interview \(picked up by multiple outlets across the US\)](#)
 - [NOVA interview](#)
 - [Wired interview](#)
 - [PBS Newshour Interview](#)
 - [Mashable article on Montecito, CA](#)
 - [Mashable article on Camp Fire](#)
 - [Playboy article](#)
 - Al Jazeera English Interview (TV)
 - [Radio News Australia Interview \(Radio\)](#)
 - October 16, 2018: [Brief note in Popular Science](#)
 - October 12, 2018: [Article in the NYT on our BioScience paper](#)

- August 30, 2018: Podcast discussion with Water Deeply on wildfires and clean water
- August 8, 2018: [Op-ed in the Guardian on California wildfires](#)
- June 10, 2017: [Interview with Idaho's Post Fall Register about fire borrowing](#)
- August 13, 2016: [Interview with HCN on fire and climate change](#)
- June 19, 2016: [Interview with the Guardian on fire risk reduction in CA](#)
- September 23, 2015 - [Interview with NWPR about wildfire consequences](#)
- September 11, 2015 - [Article on cascading consequences of wildfire from Rocky Barker at the Idaho Statesman related to our work](#)
- August 29, 2015 - [Article on the new NSF project in the Moscow Pullman Daily News](#)
- August 25, 2015 - [Article on my new NSF grant on increasing community wildfire resilience in the Spokesman Review](#)
- September 23, 2015 - [Interview with NWPR about wildfire consequences](#)
- September 11, 2015 - [Article on cascading consequences of wildfire from Rocky Barker at the Idaho Statesman related to our work](#)
- August 29, 2015 - [Article on the new NSF project in the Moscow Pullman Daily News](#)
- August 25, 2015 - [Article on my new NSF grant on increasing community wildfire resilience in the Spokesman Review](#)
- July 5, 2013 - [An op-ed I wrote for the Washington Post on responsible building in wildfire-prone areas.](#)
- July 3, 2013 - [Interview on Minnesota Public Radio about wildfires](#)
- June 19, 2013 - [Interview with Michael Kodas about wildfire policy in the US](#)
- April 8, 2011 - [Article I wrote on using climate information for the Wildland Fire Lessons Learned Center](#)
- April 2011 - [Podcast with Wildland Fire Lessons Learned Center on Fire and Climate relationships](#)

TEACHING AND ADVISING (indicates new course that I developed)**

Courses taught as Sole Instructor at UC Merced:

Research Methods in Complex Systems, MIST 260 (SP21)

Courses Taught as Sole Instructor at the University of Idaho:

Undergraduate

**Fire Ecology and Management, FOR 326 (FA19)

**As the World Burns: Fire on Earth, CORS 235 (FA17)

Introduction to Spatial Analysis for Natural Resource Management, FOR 375 (SP17, SP18)

Physical Geography (FA10, SP12)

**Physical Geography (online course), (SP14)

Senior Capstone Experience, (SP14, FA14, SP15)

**Advanced Remote Sensing (FA12)

Graduate

GIS for Fire Ecology and Management, REM 510 (SP17)

**Seminar: Professional Development (SP12)

Instruction in Geography/Higher Education (SP12, FA12, SP13)

**Seminar: Ecosystem Vulnerability (SP15)

**Advanced Remote Sensing (FA12)

Other:

FARSITE Fire behavior and fuels modeling short courses (USFS, 2005)

Graduate Students Advised:

Completed (as major professor)

Vincent Jansen, Ph.D. Natural Resources (University of Idaho, 2018)

Carrie Minerich, M.S. Natural Resources (University of Idaho, 2018)

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, May 2015)

Vincent Jansen, M.S. Environmental Science (University of Idaho, May 2014)

Katherine Morrison, M.S. Geography (University of Idaho, May 2014)

Patrick Olsen, M.S. Geography (University of Idaho, May 2014)

Forrest Bowlick, M.S. Geography (University of Idaho, May 2012)

Current (as major professor)

Josh Picotte, Ph.D., Natural Resources (expected 2022)

Graduate committee member

Anna Jurusik, Ph.D., Environmental Systems (expected 2025)

Jonathan Kim, Ph.D. Environmental Systems (expected 2023)

Brittany Lopez Barreto, Ph.D. Environmental Systems (expected 2024)

Eloise Zimbleman, Ph.D. Natural Resources (expected 2022)

Kristina Bartowitz, Ph.D. Natural Resources (expected 2022)

Stephen Fillmore, Ph.D., Natural Resources (expected 2022)

Jeff Stenzel, Ph.D. Natural Resources (University of Idaho, 2021)

Raquel Partelli Feltrin, Ph.D. Natural Resources (University of Idaho, 2020)

Joshua Clark, M.S. Natural Resources (University of Idaho, 2020)

Anthony Martinez, M.S. Natural Resources (University of Idaho, 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:

Jeffrey Stenzel (2021-present)

Aaron Sparks (2017), now Research Associate, University of Idaho

Arjan Meddens (2013-2017), now Assistant Professor, Washington State University

R. Justin Hougham (2012-2013), now Associate Extension Professor, University of Wisconsin