

Curriculum Vitae

H. Anu Kramer

Postdoctoral Research Associate
University of Wisconsin, Madison
120 Russell Labs
1630 Linden Dr.
Madison, WI 53706

(808) 551-3705
hakramer@wisc.edu
www.AnuKramer.com

EDUCATION

- 2016 University of California – Berkeley: Ph.D. in Env. Science, Policy, and Management
Dissertation: “Not seeing the forest for the points: Novel LiDAR metrics elucidate forest structure and increase LiDAR usability by managers”
Advisors: S.L. Stephens and M. Kelly; Ph.D. Committee: J.D. Radke, B.M. Collins
Certificate in Teaching and Learning in Higher Education
- 2009 Grinnell College, Grinnell, IA: B.A. in Biology & Anthropology with highest honors
Thesis: “Multi-scale ecological niche modeling”
Advisors: V.M. Eckhart and V.K. Bentley-Condit

PROFESSIONAL EMPLOYMENT

- 2018-present **Postdoctoral Research Associate:** University of Wisconsin, Madison, WI
Peery Lab, Dept. of Forest and Wildlife Ecology
Utilize LiDAR and other remote sensing data to map vegetation characteristics at landscape scales in the Sierra Nevada bioregion as part of ongoing, wildlife habitat selection studies
- 2016-2018 **Postdoctoral Research Associate:** University of Wisconsin, Madison, WI
SILVIS Lab, Dept. of Forest and Wildlife Ecology
Investigate wildland fire destruction in the wildland urban interface across the US
Respond to media inquiries on the 2017 Sonoma fires in CA
Contribute to collaborative project through the Nat’l. Socio-Env. Synthesis Center
- 2015-2016 **Private Contractor:** Deer Creek Resources, Orleans, CA
Revise LiDAR field plot protocol to meet multiple objectives
Facilitate compromise between differing viewpoints under deadline pressure
Develop tablet-based data entry form, train crew in its use, & respond to issues
Derive LiDAR-based predictions of forest metrics based on plot data
- 2009-2010 **Forestry Technician:** Pacific Southwest Research, USFS, Davis, CA
Utilize GIS, database manipulation, & fire modeling programs
Part of the Plumas Lassen Administrative Study, quantifying the change in potential fire behavior resulting from the implementation of various forest treatments

HONORS, SCHOLARSHIPS & GRANTS

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| 2012-2015 | National Science Foundation Graduate Research Fellowship Program (\$130,000) |
| 2012-2014 | UC Laboratory Fees Research Program (\$218,000) |
| 2013 | UC Berkeley Outstanding Graduate Student Instructor Award (\$250) |
| 2010 | California Nevada Hawaii Forest Fire Council Scholarship (\$1,000) |
| 2010 | USFS Certificate of Merit; Davis, CA |
| 2009 | USFS Certificate of Merit; Georgetown, CA |
| 2009 | Grinnell College Luebben Anthropology Award |
| 2009 | Grinnell College Honors in Biology & Anthropology |
| 2008-2009 | Grinnell College Mortar Board |
| 2005-2009 | Grinnell College Trustee Honor Scholarship (\$40,000) |

PUBLICATIONS

| | |
|----------|---|
| In press | Gallagher, C., Keane, J., Shaklee, P., Kramer, H. , Gerrard, R. Spotted owl foraging patterns following fuels treatments in the northern Sierra Nevada, California. <i>Journal of Wildlife Management and Wildlife Monographs</i> . |
| 2018 | Kramer, H. , Mockrin, M., Alexandre, P., Stewart, S., Radeloff, V. 2018. Where wildfires destroy buildings in the US relative to the wildland-urban interface and national fire outreach programs. <i>International Journal of Wildland Fire</i> . 27(5): 329-341. |
| 2018 | Radeloff, V., Helmers, D., Kramer, H. , Mockrin, M., Alexandre, P., Bar Massada, A., Butsic, V., Hawbaker, T., Martinuzzi, S., Syphard, A., Stewart, S. 2018. Rapid growth of the U.S. Wildland Urban Interface exacerbates wildfire problems. <i>Proceedings of the National Academy of Sciences</i> . 115(13): 3314-3319. |
| 2018 | Rissman, A.R., Burke, K.D., Kramer, H.A.C. , Radeloff, V.C., Schilke, P.R., Selles, O.A., Toczylowski, R.H., Wardropper, C.B., Barrow, L.A., Chandler, J.L. and Geelyne, K. 2018. Forest management for novelty, persistence, and restoration influenced by policy and society. <i>Frontiers in Ecology and the Environment</i> . 16(8):454-462. |
| 2016 | Kramer, H.A. , Collins, B.M., Gallagher, C.V., Keane, J.J., Stephens, S.L., Kelly, M. 2016. Accessible light detection and ranging: estimating large tree density for habitat identification. <i>Ecosphere</i> 7(12):15pp. |
| 2016 | Kramer, H.A. , Collins, B.M., Lake, F.K., Jakubowski, M.K., Stephens, S.L. and Kelly, M. 2016. Estimating ladder fuels: a new approach combining field photography with LiDAR. <i>Remote Sensing</i> 8(9):23pp. |
| 2014 | Kramer, H.A. , Collins, B.M., Kelly, M., Stephens, S.L. 2014. Quantifying ladder fuels: A new approach using LiDAR. <i>Forests</i> 5(6):1432-1453. |
| 2013 | Collins, B.M., Kramer, H.A. , Menning, K., Dillingham, C., Saah, D., Stine, P.A., Stephens, S.L. Modeling hazardous fire potential within a completed fuel treatment network in the northern Sierra Nevada. <i>Forest Ecology and Management</i> 310:156-166. |
| 2011 | Kramer, H.A. , D.M. Montgomery, V.M. Eckhart, and M.A. Geber. Environmental and dispersal controls of an annual plant's distribution: how similar are patterns and apparent processes at two spatial scales? <i>Plant Ecology</i> 212(11):1887-1899. |

PUBLICATIONS (IN REVIEW OR IN PREP)

- In review **Kramer, H.**, Butsic, V., Mockrin, M., Ramirez-Reyes, C., Alexandre, P., Radeloff, V. California post-wildfire rebuilding and new building location reveals limited adaptation.
- In review **Kramer, H.**, Mockrin, M., Radeloff, V. High wildfire damage in Interface communities in California.

CONFERENCE PRESENTATIONS

- Kramer, H.**, Butsic, V., Mockrin, M., Ramirez-Reyes, C., Alexandre, P., Radeloff, V. December 2017. Association for Fire Ecology 2017 Annual Meeting, Orlando, FL. Oral presentation: *Rebuilding and new construction trends after California wildfires.*
- Kramer, H.**, Mockrin, M., Radeloff, V. November 2017. Association for Fire Ecology 2017 Annual Meeting, Orlando, FL. Oral presentation: *How exceptional was the 2017 Tubbs fire?*
- Godoy, M., Defossé, G., Martinuzzi, S., **Kramer, H.**, Argañaraz, J., Radeloff, V. November 2017. Association for Fire Ecology 2017 Annual Meeting, Orlando, FL. Poster presentation: *Wildfires and wildland-urban interface in Andean Patagonia, Argentina: first assessment in a rapidly growing community.*
- Kramer, H.A.** October 2017. Personal Insurance Federation of California Annual Planning Retreat, Sacramento, CA. Oral presentation (20 min): *The 2017 Tubbs versus the “average” fire: before, during, and after.*
- Kramer, H.**, Mockrin, M., Alexandre, P., Stewart, S., Radeloff, V. April 2017. American Association of Geographers 2017 Annual Meeting, Boston, MA. Oral presentation: *Where do buildings burn in the US from wildfire relative to the wildland urban interface and national fire mitigation programs?*
- Kramer, H.A.** November 2015. 6th International Fire Ecology and Management Congress, San Antonio, TX. Oral presentation: *Estimating ladder fuels: a new approach by land and by air.*
- Bernal, A., Singh, A., **Kramer, H.** November 2015. GIS Day, Berkeley, CA. Poster presentation: *Using aerial LiDAR (Light Detection and Ranging) to estimate ladder fuels in the Klamath.*
- Kramer, H.A.** May 2014. Large Wildland Fires Conference, Missoula, MT. Oral presentation: *Quantifying Ladder fuels: A new approach using LiDAR.*
- Kramer, H.A.** May 2014. FuegoRed conference, Barcelona, Spain. Oral presentation (keynote speaker): *Fire in California: Models used and LiDAR contributions; El fuego en California: Simuladores de comportamiento y aportaciones del LiDAR.*
- Kramer, H.A.** April 2014. Yosemite fire and hydroclimate conference, Yosemite Valley, CA. Oral presentation: *Quantifying Ladder fuels: A new approach using LiDAR.*
- Kramer, H.A.** December 2012. 5th International Fire Ecology and Management Congress, Portland, OR. Oral presentation: *What LiDAR metrics are most important for explaining the occurrence of severe wildfire?*
- Kramer, H.A.**, and V.M. Eckhart. March 2009. Midwestern Ecology and Evolution Conference, Lincoln, NE. Oral Presentation: *Ecological niche modeling at the within-population scale: microtopography controls distribution and performance in the arid-land annual plant *Clarkia xantiana* ssp. *xantiana*.*

PROFESSIONAL SERVICE

Book reviewer: *Science*

Postdoc handbook development committee: Member of 16-person team to create a handbook for postdoctoral scholars at UW Madison (2018)

Postdoc hiring committee: Member of 4-person team; designed and distributed job call, reviewed applications, conducted interviews, and made hiring recommendation; UW Madison (2017)

Manuscript reviewer: *Environmental Monitoring and Assessment; Forests*

Social and environmental vulnerability to wildfire: member of 10-person international team working on multi-year collaborative project funded through the NSF-funded *National Socio-Environmental Synthesis Center* (at the University of Maryland) (2017-2018)

President: Student Association for Fire Ecology at Berkeley (2015)

Vice President: Student Association for Fire Ecology at Berkeley (2012-2014)

TEACHING EXPERIENCE

- 2017-2018 **Group Leader:** Teachers Anonymous, UW Madison
Meet biweekly & discuss teaching, outreach, & related careers
- 2017 **Teaching Academy Affiliate,** UW Madison
Participate in 12-hour Learning Environment & Pedagogics workshop for faculty
Attend 3 workshops on teaching & mentoring
Complete 6-month course in Scientific Leadership (total of 18 classroom hours)
- 2008-2017 **Guest lecturer:** Various courses detailed in “Invited Lectures” section below
Prepare & deliver material for 7 different courses ranging from 30-75 min
Integrate lectures & activities to engage 12-75 students, majors & non-majors
- 2015 **Certificate in Teaching and Learning in Higher Education,** UC Berkeley
Attend 8-hr teaching conference & 6 workshops; see Prof'l Development below
Complete 2-credit course on teaching pedagogy & online course in ethics
Teach at least 2 semesters (I taught 4 semesters), using mid-semester evaluations
Complete classroom teaching observation by & consultation with faculty mentor
Develop self-designed course syllabus with sample labs & activities
Create a teaching portfolio – see www.anukramer.com/teaching
- 2015 **Lead Graduate Student Instructor:** Introduction to GIS, UC Berkeley
Supervise another student instructor
Assist with course design & independently develop & lead 9 3-hour labs
- 2015 **Graduate Student Instructor:** GIS and Environmental Science, UC Berkeley
Redesign 2 labs & lab introductions to incorporate ArcPython, SQL, & basic coding
Assist students with final project development & completion
- 2012-2013 **Graduate Student Instructor:** Wildland Fire Science, UC Berkeley
Organize & facilitate weekly labs; assist with lectures; develop & grade labs & exams
Lead 2 field labs (Russell Reservation) & assist 1 all-day field trip (Blodgett)
Facilitate student participation in a prescribed fire at Blodgett Experimental Forest

OUTREACH / COMMUNITY SERVICE

- 2017-present **East Bay Parks mapping volunteer**; California Bay Area
Georeference park maps & make them available for download & mobile navigation
- 2013-present **Prescribed fire**; numerous locations
Assist with prescribed fires in CA, NE, & WI
- 2018 **NatureBridge**; Yosemite National Park, CA
Assist in developing curriculum for Fire Ecology Project to develop environmental literacy for 4th-12th graders, especially from underserved and inner-city communities
- 2017-2018 **Junior Science Cafe**; Madison, WI
Describe being a scientist & practice inquiry-based learning with 5th-12th graders
- 2013-2016 **Expanding Your Horizons**; Berkeley, CA
Teach middle school girls about GIS/wildland fire; 1 day yearly
- 2012-2016 **Fire learning rotation**; Berkeley, El Cerrito, & Hopland, CA
Develop multiple hands-on demonstration stations about fire physics & fire ecology & rotate students ages 6-13 through the stations
- 2012-2016 **Bay Area Scientists in Schools**; Berkeley & Oakland, CA
Design 1-hour lesson for 4th graders on fire frequency & severity in the Sierras
Mobilize team of grad & undergrad instructors. Monthly lessons
- 2015 **Jepson Herbarium 3-day workshop**; Yosemite National Park, CA
Co-design & lead Wildland Fire workshop for adults
- 2014 **NatureBridge**; San Francisco & Yosemite National Park, CA
Run interactive fire table at their annual Fundraising Gala in San Francisco
Advise design of new fire-focused facility on Henness Ridge near Yosemite N.P.
- 2014 **Cal Day**; Berkeley, CA
Encourage Native American high school students to enroll at UC Berkeley
Demonstrate what we study in a wildfire science lab

MEDIA CONTRIBUTIONS *see links to articles at www.anukramer.com/media--service*

- 2018 **Interview**; Bloomberg Businessweek
Why Is California Rebuilding in Fire Country? Because You're Paying for It
Make maps and discuss with reporter my research on post-fire rebuilding in CA
- 2017 **Radio interview**; KCBS – San Francisco (Oct. 10, 2017)
5-minute live interview about Oct. Sonoma fires and the Wildland Urban Interface
- 2017 **Interview**; The Washington Post
People love to live in places that are at risk for disasters, 'and this is what happens'
Compile data and discuss with reporter the destruction in the Oct. Sonoma fires
- 2017 **Interview**; Associated Press
California Wildfires - Rebuild or Rethink
Discuss my research on post-fire rebuilding in the context of the Oct. Sonoma fires
- 2017 **Science book review**
Write 2-page review of new book (*Firestorm*), distributed by *Science* magazine
- 2014 **Featured**; Ainsworth Star-Journal, Nebraska (March 26, 2014)
Included in article about prescribed burning with The Nature Conservancy
- 2013 **Featured**; California Fire Science Consortium's Blog
Design, bake, and assemble 3 cakes to describe California's fire history of suppression and fuel buildup, high severity fire, and post-fire regeneration

INVITED LECTURES

- Kramer, H.A.** September 2018. U Washington Forest Resilience Lab. Seattle, WA. Oral presentation (60 min): *Wildfire and homes: where are buildings burning and what are we doing about it?*
- Kramer, H.A.** December 2017. UW Madison Turner lab. Madison, WI. Oral presentation (75 min): *Remote sensing to explore forest structure, ecosystem management, and homes in fire-prone areas.*
- Kramer, H.A.** November 2017. UW Madison Geoscience 140: Natural Hazards and Disasters. Madison, WI. Oral presentation (75 min): *Wildfire: behavior, history, and management.*
- Kramer, H.A.** October 2017. UC Berkeley Stephens Lab. Berkeley, CA. Oral presentation (50 min): *Building trends before, during, and after wildfire: Trends in the US, CA, and the 2017 Tubbs fire.*
- Kramer, H.A.** July 2017. UW Madison Botany 460: General Ecology. Madison, WI. Oral presentation (45 min): *US wildfires: the good, the bad, and the ugly.*
- Kramer, H.A.** March 2017. UW Madison Forest and Wildlife Ecology 501: Forest Fire Behavior and Management. Madison, WI. Oral presentation (1 hour): *Fire Modeling.*
- Kramer, H.A.** November 2016. UW Madison Forest and Wildlife Ecology 875: Policy and management for conservation. Madison, WI. Oral presentation (1 hour): *US Fire history, how we got to our current relationship with fire, and what folks are doing about it.*
- Kramer, H.A.** October 2016. Grinnell College Biology lunch seminar, Grinnell, IA. Oral presentation (1 hour): *Fire, lasers, and satellites: using remote sensing to explore wildfire potential, forest structure and management, and human persistence in fire-prone areas.*
- Kramer, H.A.** October 2014. The Nature Conservancy Fire Training Exchange. Oral presentation (30 min): *LiDAR: an up-and-coming technology for fire modeling.*
- Kramer, H.A.** July 2014. UC Berkeley Forestry Camp. Oral presentation: *Introduction to wildfire science.*
- Kramer, H.A., Wilkin, K.,** December 2013. Lawrence Hall of Science, Berkeley, CA. Oral presentation (1 hour): *Fire in California.*
- Kramer, H.A.,** March 2013. UC Berkeley Env. Sci, Policy, and Management 134: Fire, Insects, and Disease. Berkeley, CA. Oral presentation (1 hour): *Forest Restoration and Resiliency: How do we create this in the US?*

MANAGING / MENTORING / LEADERSHIP

- 2017-present **Teachers Anonymous teaching roundtable group;** UW Madison
Establish & lead biweekly discussion of literature on teaching & teaching careers
- 2017 **Mountain Plover habitat characterization;** UW Madison
Mentor student in GIS certificate program on research ideas, methodology, & career
- 2017 **Career guidance for undergrads;** UW Madison
Speak with 3 undergraduates about careers in wildfire, National Parks, & Forests
- 2016-2017 **Building destruction/construction and wildfire;** UW Madison
Hire, train, & supervise 4 undergraduate technicians to search archives, find imagery, & digitize buildings within fire perimeters; Discuss project & professional goals
- 2015 **LiDAR-derived Ladder Fuels;** UC Berkeley
Hire, manage, & mentor 2 undergraduates assisting with photo interpretation, LiDAR analysis, & statistical modeling; Students developed & presented poster
- 2012-2015 **Student Association for Fire Ecology at Berkeley;** UC Berkeley
Establish student group & serve sequentially as president, treasurer, & vice president
Organize outreach, secure funding, design & build outreach materials
Facilitate discussion among graduates & undergraduates across campus

PROFESSIONAL DEVELOPMENT

- 2017 **Foundations Training;** Wright Foundation, Chicago, IL
30-hr workshop on social & emotional intelligence
- 2017 **Learning Environment & Pedagogics workshop,** UW Madison, 12-hr workshop
- 2017 **Creating an Individual Development Plan,** UW Madison, 1.5-hr workshop
- 2017 **Level Up: Designing a game-based learning environment,** Center for the
Integration of Research, Teaching, and Learning, 2-hr workshop
- 2017 **Becoming a better mentor,** UW Madison, 2-hr workshop
- 2017 **When intuition fails: What science tells us about effective communication,**
UW Madison, 1-hr lecture
- 2016-2017 **Scientific Leadership Course for Postdocs,** UW Madison, 18-hr course
- 2015 **Facilitation & Public Participation for Scientists,** UC Berkeley, 3-hr workshop
- 2014-2015 **Teaching workshops,** UC Berkeley, 1.5-hr workshops: Skills for Sharing Science,
Syllabus & Course Design, Working with Student Writing, Strategies & skills for
mentoring, How Students Learn, Strategies for Efficient & Effective Grading
- 2014 **Software Carpentry Bootcamp,** Women in Science & Engineering San Francisco,
16-hr workshop
- 2012 **Airborne LiDAR for Fire Related Studies of Forest Structure,** US Forest Service
Wildland Fire Training & Conference Center, 16-hr workshop
- 2012 **Teaching & Learning in Higher Education,** UC Berkeley, 2-credit course
- 2011 **Advanced LiDAR Data Processing and Application,** Fayetteville State U., NC
International Society for Photogrammetry & Remote Sensing, 40-hr course

FIELD EXPERIENCE

- 2015 **GIS Technician:** Deer Creek Resources, Chico, CA
Manage GIS trailer on Type 1 wildfire incidents
Download & incorporate GPS data from fireline field observers
Make maps on non-negotiable deadlines
Maintain data libraries, folder structures, equipment & inventories
Troubleshoot ArcMap, networks, & printer functionality
- 2013-2015 **Participant:** TNC Prescribed Fire Training Exchange, NE & CA
Attend 6 weeks of training over 5 events in diverse locations, fuels, & topographies
Complete National Wildfire Coordinating Group certification for Firefighter Type II
Learn from & teach local, government, non-profit, & university participants
Train others on how to effectively interact with the media about wildland fire
- 2010 **Forestry Technician:** Pacific Southwest Research, USFS, Quincy, CA
Record forest, shrub, & herbaceous regeneration following high-severity fire
- 2009 **Biological Science Technician:** USFS, Georgetown, CA
Survey for & document reproduction & core use area of Spotted Owls & Goshawks
- 2007 **Archaeology Intern:** USFS, Williams, AZ
Survey for artifacts, map & catalogue sites; incorporate these into a GIS
- 2006 **Archaeological Field School Participant:** Grinnell College, Flagstaff, AZ
Excavate a prehistoric pithouse, map & analyze artifacts, soil, & the house itself

SKILLS

Teaching: Fire Science; Introductory and upper level GIS; UW Madison Teaching Academy Affiliate, UC Berkeley Certificate in Teaching & Learning in Higher Education

LiDAR: FUSION, LASTools, aerial & terrestrial laser scanning, totals station, plot design

GIS: GPS, ArcGIS, ArcPython; some familiarity: QGIS, GRASS, ENVI, OBIA, ESRI mobile mapping, model builder

Fire Modeling: Forest Veg. Sim., Farsite, FlamMap, FOFEM, BehavePlus, NEXUS, Fire Fam. Plus

Fire Certifications: FFT2 certified, almost FEMO & GISS certified, working on FFT1

Programming/Statistics: R, Python, ArcPython

Basic Computer: Excel, Access, Visual Basic, PowerPoint, Word, Illustrator, database management

Field-related: fuels transects, tree inventory, off-road driving, GPS, navigation, plot design

MEMBERSHIPS

Association for Fire Ecology

International Association of Wildland Fire

American Association of Geographers

American Society for Photogrammetry and Remote Sensing

Mortar Board, Grinnell College Chapter, Grinnell, IA

REFERENCES

Dr. Volker Radeloff

Professor, U Wisconsin - Madison

radeloff@wisc.edu; (608) 263-4349

Relationship: Supervisor, mentor, collaborator

Dr. Scott Stephens

Professor of Fire Science, UC Berkeley

sstephens@berkeley.edu; (510) 642-7304

Relationship: Co-advisor; instructor for course taught & developed (Wildland Fire Science)

Dr. Van Butsic

Assistant Cooperative Extension Specialist, UC Berkeley

vanbutsic@berkeley.edu; (510) 666-5400

Relationship: Instructor for course taught & developed (Intro to GIS), collaborator