

Philip E. Higuera

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PROFESSIONAL PREPARATION

- Ph.D. 2006 University of Washington, Seattle, Division of Ecosystem Science, College of Forest Resources. Advisor: Dr. Linda Brubaker. Committee members: Drs. James Agee, Patricia Anderson, Daniel Gavin, Douglas Sprugel
- M.S. 2002 University of Washington, Seattle, Division of Ecosystem Science, College of Forest Resources. Advisors: Dr. Linda Brubaker and Dr. Douglas Sprugel
- B.A. 1998 Middlebury College, Middlebury, VT: *magna cum laude*; High Honors, Biology, High Honors, Environmental Studies-Geology. Thesis advisors: Dr. Andrea Lloyd and Grant Meyer

PROFESSIONAL EXPERIENCE

- 2015 – *Associate Professor, Department of Ecosystem and Conservation Sciences, W. A. Franke College of Forestry and Conservation, University of Montana*
- 2009-2015 *Assistant Professor, Department of Forest, Rangeland, and Fire Sciences, College of Natural Resources, University of Idaho (tenure & promotion awarded April 2015)*
- 2008-2009 *Adjunct Instructor, Department of Earth Science, Montana State University*
- 2006-2009 *National Park Ecological Research Fellow, Whitlock Paleoecology Lab, Montana State University*
- 2006-2009 *Postdoctoral Research Scientist, Hu Quaternary Paleoecology Lab, University of Illinois*
- 2002-2006 *Research Assistant, Brubaker Paleoecology Lab, University of Washington*
- 2002-2005 *National Science Foundation Graduate Research Fellow, Brubaker Paleoecology Lab, University of Washington*
- 1999-2002 *Research Assistant, Brubaker Paleoecology Lab, University of Washington*
- 1998-1999 *Research Intern, Archbold Biological Station, Lake Placid, Florida*

REFEREED MANUSCRIPTS

(Graduate or undergraduate student advised directly # or indirectly *; post-doc @)

Summary: Thompson Reuters Research ID: <http://www.researcherid.com/rid/B-1330-2010>

ISI-Web of Knowledge: h-index = 19, total citations > 1900, mean of 49/paper.

44. Leys, B., P.E. Higuera, K.K. McLauchlan, and P.V. Dunnette#. 2016. Wildfires and geochemical change in a subalpine forest over the past six millennia. *Environmental Research Letters*. 11: 125003.

43. @Morris, J.L., S. Cottrell, C.J. Fettig, W.D. Hansen, R.L. Sherriff, V.A. Carter, J.L. Clear, J. Clement, R.J. DeRose, J.A. Hicke, **P.E. Higuera**, K.M. Mattor, A.W.R. Seddon, H.T. Seppä, J.D. Stednick, S.J. Seybold. 2016. Managing bark beetle impacts on ecosystems and society: priority questions to motivate future research. *Journal of Applied Ecology*. doi: 10.1111/1365-2664.12782.
42. #Young, A.M., **Higuera, P.E.**, Duffy, P.A., and F.S. Hu. 2016. Climatic thresholds shape northern high-latitude fire regimes and imply vulnerability to future climate change. *Ecography*. In Press, DOI: 10.1111/ecog.02205
41. Johnstone, J.F., C.D. Allen, J.F. Franklin, L.E. Frelich, B.J. Harvey, **P.E. Higuera**, M.C. Mack, R.K. Meentemeyer, M.R. Metz, G.L.W. Perry, T. Schoennagel, and M.G. Turner. 2016. Changing disturbance regimes, ecological memory, and forest resilience. *Frontiers in Ecology and the Environment*. 7: 369-378.
40. Marlon, J.R., R. Kelly, A.L. Daniau, B. Vannièrè, M.J. Power, P. Bartlein, **P.E. Higuera**, O. Blarquez, S. Brewer, and T. Brücher. 2016. Reconstructions of biomass burning from sediment-charcoal records to improve data–model comparisons. *Biogeosciences* 13:3225-3244.
39. Kranabetter, J.M., K.K. McLauchlan, S.K. Enders, J.M. Fraterrigo, **P.E. Higuera**, J.L. Morris, E.B. Rastetter, R. Barnes, B. Buma, D.G. Gavin, L.M. Gerhart, L. Gillson, P. Hietz, M.C. Mack, B. McNeil, and S. Perakis. 2016. Temporal scaling of biogeochemical response to ecosystem disturbance. *Ecosystems*. 19: 387-395.
38. Abbot, B.W., J.B. Jones, E.A.G. Schuur, F.S. Chapin III, and 96 others including **P.E. Higuera**. 2016. Biomass offsets little or none of permafrost carbon release from soils, streams, and wildfire: an expert assessment. *Environmental Research Letters*. 11: 034014
37. Tinkham, W.T., A.M.S. Smith, P.E. Higuera, J.A. Hatten, N.W. Brewer, and S.H. Doerr. 2016. Replacing time with space: using laboratory fire to explore the effects of repeated burning on black carbon degradation. *International Journal of Wildland Fire*. 25: 242-248.
36. Smith, A. M. S., C. A. Kolden, T. B. Paveglio, M. A. Cochrane, D. M. J. S. Bowman, M. A. Moritz, A. D. Kliskey, L. Alessa, A. T. Hudak, C. M. Hoffman, J. A. Lutz, L. P. Queen, S. J. Goetz, **P. E. Higuera**, L. Boschetti, M. Flannigan, K. M. Yedinak, A. C. Watts, E. K. Strand, J. W. van Wagendonk, J. W. Anderson, B. J. Stocks, and J. T. Abatzoglou. 2016. The Science of Firescapes: Achieving Fire-Resilient Communities. *BioScience*. 66:130-146.
35. #Kemp, K.B., **P.E. Higuera**, and P. Morgan. 2016. Fire legacies impact conifer regeneration across environmental gradients in the U.S. northern Rockies. *Landscape Ecology*. 31: 619-636.
34. **Higuera, P. E.** 2015. Taking time to consider the causes and consequences of large wildfires. *Proceedings of the National Academy of Sciences*. 112: 13137-13139.
33. Hu, F.S., **P.E. Higuera**, P.A. Duffy, M.L. Chipman, A.V. Rocha, #A.M. Young, R. Kelly, and M.C. Dietze. 2015. Tundra fires in the Arctic: Natural variability and responses to climate change. *Frontiers in Ecology and the Environment*. 13: 369-377.
32. **Higuera, P. E.**, J. T. Abatzoglou, J. S. Littell, and P. Morgan. 2015. The changing strength and nature of fire-climate relationships in the northern Rocky Mountains, U.S.A., 1902-2008. *PLoS ONE*, 10:e0127563.
31. @Morris, J. L., K. K. McLauchlan, and **P. E. Higuera**. 2015. Sensitivity and complacency of sedimentary biogeochemical records to climate-mediated forest disturbances. *Earth-Science Reviews*, 148:121-133.

30. Klos, P. Z., J. Abatzoglou, A. Bean, J. Blades, M. A. Clark, M. Dodd, T. E. Hall, A. Haruch, **P. E. Higuera**, J. D. Holbrook, V. S. Jansen, #K. Kemp, A. Lankford, T. E. Link, T. Magney, A. J. H. Meddens, L. Mitchell, B. Moore, P. Morgan, B. A. Newingham, R. J. Niemeyer, B. Soderquist, A. A. Suazo, K. T. Vierling, V. Walden, and C. Walsh. 2015. Indicators of climate change in Idaho: An assessment framework for coupling biophysical change and social perception. *Weather, Climate, and Society*, 7, 238-254.
29. Chipman, M.L., V. Hudspeth, **P.E. Higuera**, P.A. Duffy, R.F. Kelly, W.W. Oswald, and F.S. Hu. 2015. Spatiotemporal patterns of tundra fires: Late-Quaternary records from Alaska. *Biogeosciences*, 12: 4017-4027.
28. **Higuera, P.E.**, C.E. Briles, and C. Whitlock. 2014. Fire-regime complacency and sensitivity to centennial- through millennial-scale climate change in Rocky Mountain subalpine forests, Colorado, U.S.A. 2014. *Journal of Ecology*, 102: 1429-1441.
27. #Dunnette P.V., **P.E. Higuera**, K.K. McLauchlan, K.M. Derr, @C.E. Briles, M.H. Keefe. 2014. Biogeochemical impacts of wildfires over four millennia in a Rocky Mountain subalpine watershed. *New Phytologist*, 203: 900-912.
26. McLauchlan, K., **P.E. Higuera**, D.G. Gavin, S. S. Perakis, M.C. Mack, H. Alexander, J. Battles, F. Biondi, B. Buma, D. Colombaroli, S. Enders, D.R. Engstrom, F.S. Hu, J.R. Marlon, J.D. Marshal, M. McGlone, J.L. Morris, L.E. Nave, B.N. Shuman, E.A.H. Smithwick, D.H. Urrego, D.A. Wardel, C.J. Williams, and J.J. Williams. 2014. Reconstructing disturbances and their biogeochemical consequences over multiple timescales. *Bioscience*. 64: 105-116.
25. *Kelly, R. F., *M.L. Chipman, **P.E. Higuera**, V. Stefanova, L.B. Brubaker, and F.S. Hu. 2013. Recent burning of boreal forests exceeds variability of the past 10,000 years. *PNAS*, 110: 13055-13060.
24. McWethy, D.B., **P.E. Higuera**, C. Whitlock, T.T. Veblen, D.M.J.S. Bowman, G. Cary, S.G. Haberle, R.E. Kean, B.D. Maxwell, M.S. McGlone, G.L.W. Perry, J.M. Wilmshurst, A. Holz, and A. Tepley. 2013. A conceptual framework for predicting temperate ecosystem sensitivity to human impacts on fire regimes. *Global Ecology & Biogeography*, 22: 900-912.
23. *Brewer, N.W., A.M.S. Smith, J.A. Hatten, **P.E. Higuera**, A.T. Hudak, R.D. Ottmar, and W.T. Tinkham. 2013. Fuel Moisture Influences on Fire-altered Carbon in Masticated Fuels: An Experimental Study. *Journal of Geophysical Research-Biogeosciences*, 118, 30-40.
22. *Barrett, C.M., Kelly, R.F., **Higuera, P.E.**, and F.S. Hu. 2013. Climatic and land-cover influences on the spatiotemporal dynamics of Holocene boreal fire regimes. *Ecology*, 92: 389-402.
21. Rocha, A.V., M.M. Loranty, **P.E. Higuera**, M.C. Mack, F.S. Hu, B.M. Jones, A.L. Breen, E.B. Rastetter, S.J. Goetz, and G.R. Shaver. 2012. The footprint of Alaskan tundra fires during the past half-century: implications for surface properties and radiative forcing. *Environmental Research Letters*, 7: 044039, doi:10.1088/1748-9326/7/4/044039.
20. **Higuera, P.E.**, *Chipman, M.L., Barnes, J.L., Urban, M.A., Hu, F.S. 2011a. Variability of tundra fire regimes in Arctic Alaska: millennial scale patterns and ecological implications. *Ecological Applications*, 21: 3211-3226.
19. **Higuera, P.E.**, C. Whitlock, and #J. Gage. 2011b. Fire history and climate-vegetation-fire linkages in subalpine forests of Yellowstone National Park, Wyoming, U.S.A., AD 1240-1975. *The Holocene*, 21:327-341.

18. *Kelly, R.F., **P.E. Higuera**, *C.M. Barrett, and F.S. Hu. 2011. A signal-to-noise index to quantify the potential for peak detection in sediment-charcoal records. *Quaternary Research*, 75: 11-17.
17. Hu, F.S., **P.E. Higuera**, J.E. Walsh, W.L. Chapman, P.A. Duffy, L.B. Brubaker, and M.L. Chipman. 2010. Tundra burning in Alaska: linkages to climatic change and sea-ice retreat. *Journal of Geophysical Research – Biogeosciences*, 115, G04002
doi:10.1028/2009JG001270.
16. **Higuera, P.E.**, Gavin, D.G., Bartlein, P.J. and Hallett, D.J. 2010. Peak detection in sediment-charcoal records: impacts of alternative data analysis methods on fire-history interpretations. *International Journal of Wildland Fire*, 19: 996-1014.
15. Whitlock, C., **P.E. Higuera**, D. McWethy, and C.E. Briles. 2010. Paleocological perspectives on fire ecology: revisiting the fire regime concept. 2010. *The Open Ecology Journal*, 3: 6-23.
14. Ali, A.A., **P.E. Higuera**, Y. Bergeron, and C. Carcaillet. 2009. Comparing fire-history interpretations based on area, number and estimated volume of macroscopic charcoal in lake sediments. *Quaternary Research* 72: 462-486.
13. Marlon, J.R., P.J. Bartlein, M.K. Walsh, S.P. Harrison, K.J. Brown, M.E. Edwards, **P.E. Higuera**, M.J. Power, C. Whitlock, R.S. Anderson, C. Briles, A. Brunelle, C. Carcaillet, M. Daniels, F.S. Hu, M. Lavoie, C. Long, T. Minckley, P.J.H. Richard, S.L. Shafer, W. Tinner, and C. Umbanhowar. 2009. Wildfire responses to abrupt climate change in North America. *PNAS* 106: 2519-2524.
12. Brubaker, L.B., **P.E. Higuera**, T.S. Rupp, M. Olson, P.M. Anderson, and F.S. Hu. 2009. Linking sediment charcoal records and ecological modeling to understand causes of past fire-regime change in boreal forests. *Ecology* 90: 1788-1801.
11. **Higuera, P.E.**, L.B. Brubaker, P.M. Anderson, F.S. Hu, and T.A. Brown. 2009. Vegetation mediated the impacts of postglacial climate change on fire regimes in the south-central Brooks Range, Alaska. *Ecological Monographs* 79: 201-219.
10. Marlon, J.R., P.J. Bartlein, C. Carcaillet, D.G. Gavin, S.P. Harrison, **P.E. Higuera**, F. Joos, M.J. Power, and I.C. Prentice. 2008. Climate and human influences on global biomass burning over the past two millennia. *Nature Geoscience* 1: 697-702.
9. Briles, C.E., C. Whitlock, P.J. Bartlein, and **P.E. Higuera**. 2008. Regional and local controls on postglacial vegetation and fire in the Siskiyou Mountains, northern California, USA. *Palaeogeography Palaeoclimatology Palaeoecology* 265: 159-169.
8. **Higuera, P.E.**, L.B. Brubaker, P.M. Anderson, T.A. Brown, A.T. Kennedy, and F.S. Hu. 2008. Frequent Fires in Ancient Shrub Tundra: Implications of Paleorecords for Arctic Environmental Change. *PLoS ONE* 3:e0001744.
7. Sugimura, W., D.G. Sprugel, L.B. Brubaker, and **P.E. Higuera**. 2008. Millennial-scale changes in local vegetation and fire regimes on Mt. Constitution, Orcas Island, Washington, USA, using small hollow sediments. *Canadian Journal of Forest Research* 38: 566-575.
6. Power, M.J., and 84 others including **P.E. Higuera**. 2008. Changes in fire regimes since the Last Glacial Maximum: an assessment based on a global synthesis and analysis of charcoal data. *Climate Dynamics* 30: 887-907.
5. **Higuera, P.E.**, M.E. Peters, L.B. Brubaker, and D.G. Gavin. 2007. Understanding the origin and analysis of sediment-charcoal records with a simulation model. *Quaternary Science Reviews* 26:1790-1809.
4. Peters, M.E., and **P.E. Higuera**. 2007. Quantifying the source area of macroscopic charcoal with a particle dispersal model *Quaternary Research* 67:304-310.

3. Hu, F.S., L.B. Brubaker, D.G. Gavin, **P.E. Higuera**, J.A. Lynch, T.S. Rupp, and W. Tinner. 2006. How climate and vegetation influence the fire regime of the Alaskan Boreal Biome: the Holocene perspective. *Mitigation and Adaptation Strategies for Global Change* 11:829-846.
2. **Higuera, P.E.**, D.G. Sprugel, and L.B. Brubaker. 2005. Reconstructing fire regimes with charcoal from small-hollow sediments: a calibration with tree-ring records of fire. *The Holocene* 15:238-251.
1. Trombulak, S.C., **P.E. Higuera**, and M. DesMeules. 2001. Population trends of wintering bats in Vermont. *Northeastern Naturalist* 8:51-62.

NON-REFEREED MANUSCRIPTS

5. **Higuera, P. E.**, J. L. Barnes, *M. L. Chipman, M. Urban, and F. S. Hu. 2011. Tundra fire history over the past 6000 years in the Noatak National Preserve, northwestern Alaska. *Alaska Park Science* 10:37-41.
4. McWethy D.B., S.T. Gray, **P.E. Higuera**, J.S. Littell, G.T. Pederson, A.J. Ray, and C. Whitlock. 2010. Climate and terrestrial ecosystem change in the U.S. Rocky Mountains and Upper Columbia Basin: Historical and future perspectives for natural resource management. Natural Resource Report NPS/GRYN/NRR—2010/260. National Park Service, Fort Collins, Colorado.
3. **Higuera, P.E.**, D.G. Gavin, P.D. Henne, and *R.F. Kelly. 2010. Recent advances in the analysis and interpretation of sediment-charcoal records. *PAGES Newsletter*, 18: 57-59.
2. **Higuera, P. E.** 2006. Late Glacial and Holocene Fire History in the Southcentral Brooks Range, Alaska: Direct and Indirect Impacts of Climatic Change on Fire Regimes. Ph.D. Dissertation. University of Washington, Seattle.
1. **Higuera, P. E.** 2002. Reconstructing fire regimes with charcoal and pollen from small hollows: a calibration with tree-ring records of fire. MS Thesis. University of Washington, Seattle.

SELECTED PROFESSIONAL PRESENTATIONS, OF > 65 (* INDICATES INVITED TALK)

- Higuera, P. E.**, T. W. Hudiburg, and J. A. Hicke. 2015. Combining paleoecology and ecosystem modeling to study forest ecosystem consequences of wildfires from decades to millennia. Fall Meeting, **American Geophysical Union, San Francisco, CA.** (talk)
- ***Higuera, P. E.** 2015. Taking time to consider the causes and ecosystem consequences of fire-regime variability. **6th International Fire Ecology and Management Congress, San Antonio, TX.** (talk)
- Young, A. M., **P. E. Higuera**, P. A. Duffy, F. S. Hu, and L. Boschetti. 2014. Climatic Controls of Wildfire in the Boreal Forest and Arctic Tundra Biomes across Multiple Spatial and Temporal Scales. Fall Meeting, **American Geophysical Union, San Francisco, CA.** (talk)
- ***Higuera, P. E.**, Calder, W. J., Chipman, M., Gill, J., and R. Kelly. 2014. IGNITE: Why we study the past: PaleoEcology in a time of rapid global change. Annual meeting of the **Ecological Society of America, Sacramento, CA.** (talk)
- Crausbay, S., **Higuera, P. E.**, Brubaker, L. B., and Sprugel, D. G. 2014. Fire as a catalyst for rapid ecological change in the Puget Lowlands over the Holocene. Annual meeting of the **Ecological Society of America, Sacramento, CA.** (talk)

- Kemp, K. B., **Higuera, P. E.**, and Morgan, P. 2014. Post-fire tree recruitment in the U.S. Northern Rockies: the influence of seed source proximity and environmental conditions. Annual meeting of the **Ecological Society of America, Sacramento, CA.** (talk)
- *Morris, J. L. and **P. E. Higuera.** 2014. Holocene fire histories from the subalpine interior of Tasmania, Australia. **International Association of Wildland Fire: Large Wildland Fires: Social, Political and Ecological Effects, Missoula, MT.** (talk)
- ***Higuera, P. E.**, R. F. Kelly, and F. S. Hu. 2013. Resilience and sensitivity of high-severity fire regimes to climatic variability from centuries to millennia. Fall Meeting, **American Geophysical Union, San Francisco, CA.** (talk)
- ***Higuera, P. E.**, J. T. Abatzoglou, J. S. Littell, and P. Morgan. 2013. The changing nature of fire-climate relationships in the U.S. Northern Rockies, 1902-2008. **VII Southern Connection Congress, Dunedin, New Zealand.** (talk)
- Dunnette, P. V. and **P. E. Higuera.** Long-term interactions among climate, fire, and biogeochemical cycling in a Rocky Mountain subalpine watershed. **Ecological Society of America, Portland, OR.** (poster)
- Higuera, P. E.**, M. Chipman, J. Barnes, P. A. Duffy, and F. S. Hu. 2011. Interannual- to millennial-scale interactions among climate, vegetation, and fire in tundra ecosystems of Alaska, USA. **Ecological Society of America, Austin, TX.** (talk)
- ***Higuera, P.E.**, M. Chipman, J.A. Allen, L. Brubaker, C. Whitlock, F.S. Hu. 2009. Interactions of climate, vegetation, and fire during the Holocene: lessons from high-latitude and high-elevation ecosystems. **American Geophysical Union, San Francisco, CA.** (talk)
- ***Higuera, P.E.**, M. Chipman, J.A. Allen, S. Rupp, M. Urban, F.S. Hu. 2008. Tundra fire regimes in the Noatak National Preserve, northwestern Alaska, since 6000 yr BP. **International Association of Wildland Fire, Jackson Hole, WY.** (talk)
- Higuera, P.E.**, L.B. Brubaker, P.M. Anderson, F.S. Hu, B. Clegg, T. Brown, and S. Rupp. 2005. The relative importance of vegetational vs. climatic controls on post-glacial fire regimes in the southern Brooks Range, AK. **Ecological Society of America, Montreal, Quebec.** (talk)
- ***Higuera, P.E.**, M.E. Peters, D.G. Gavin. 2004. Holocene fire-history records from lake sediments: improving accuracy and precision through quantitative modeling. **International Association for Landscape Ecology, US Regional Association, Las Vegas, Nevada.** (talk)
- Higuera, P.E.**, L.B. Brubaker, and D.G. Sprugel. 2002. Reconstructing fire regimes with small hollows: A calibration with tree-ring records. **Ecological Society of America, Tucson, AZ.** (talk)

GRANTS AND FELLOWSHIPS

- 2016-2019 USDI, BLM, Joint Fire Science Program: “Identifying ecological and social resilience in fire-prone landscapes” Higuera (PI), and co-PIs Elizabeth Covelli Metcalf, Alex Metcalf, Dave McWethy, and Carol Miller. Total: **\$290,560** (University of Montana \$227,926).
- 2016-2019 USDI, BLM, Joint Fire Science Program: “Climate variability and post-fire forest regeneration in the Northern Rockies.” Higuera (PI), and co-PIs Kimberly Taylor (principal author), S. Dobrowski, and Sean Parks. Total: **\$355,327.**
- 2014-2016 USDI, BLM, Joint Fire Science Program, Graduate Research and Innovation: “Spatially-explicit impacts of climate on past, present, and future fire regimes in Alaskan boreal forest and tundra ecosystems.” Adam Young (student investigator), Higuera (PI). Total: **\$24,999.**

- 2013-2018 National Science Foundation, Macrosystems Ecology ([1241846](#)): “Collaborative Research and NEON: MSB Category 2: PaleON - a PaleoEcological Observatory Network to Assess Terrestrial Ecosystem Models.” Jason McLachlan, Notre Dame (lead PI), Higuera (UIdaho / UMontana lead), et al. Total: > \$4 million, University of Idaho / Montana, **\$449,778**.
- 2012-2015 USDI, BLM, Joint Fire Science Program, Graduate Research and Innovation: Interactions Among Climate, Wildfire, and Tree Regeneration at Lower Treeline in the Northern Rockies. K. Kemp (student investigator), Higuera (PI). Total: **\$24,999**.
- 2011-2016 National Science Foundation, Research Coordination Network ([1145815](#)), “RCN: The Novus project for integrating paleo- and neo-ecosystem ecology.” Kendra McLauchlan, Kansas State University (PI), and co-PIs Daniel Gavin and Philip Higuera. Total: \$505,409, University of Idaho, \$0.
- 2010-2015 National Science Foundation, Partnerships for International Research and Education ([0966472](#)): “PIRE: Wildfire feedbacks and consequences of altered fire regimes in the face of climate and land-use change in Tasmania, New Zealand, and the western U.S.” Cathy Whitlock (PI), Higuera (co-PI, UIdaho lead), et al. Total: > \$3,800,000 million, University of Idaho, **\$335,203**.
- 2010-2015 National Science Foundation, Arctic System Science ([1023669](#)): “Collaborative Research: Integrating paleoecological analysis and ecological modeling to elucidate the responses of tundra fire regimes to climate change.” Feng Sheng Hu (PI) and co-PIs, Mike Dietze, Paul Duffy, and Philip Higuera (UIdaho lead). Total: > \$1,100,000 (+ \$370 k logistical support), University of Idaho, **\$456,612**.
- 2006-2009 National Park Ecological Research Post-doctoral Fellowship, PI: www.esa.org/nper/ **\$138,000**.
- 2006-2010 USDI, BLM, Joint Fire Science Program: “Reconstructing fire regimes in tundra ecosystems to inform a management-oriented ecosystem model.” Higuera, co-PI and principal author; Feng Sheng Hu (PI). Total **\$306,780**.
- 2000-2003 National Science Foundation Graduate Research Fellowship

UNIVERSITY TEACHING

- 2015- Associate Professor, Univ. of Montana, Dept. of Ecosystem & Conservation Science: *Basic & Applied Fire Ecology* (FORS 333), annually 2015-
Fire & Disturbance Ecology (FORS 595), 2017.
- 2010-2015 Assistant Professor, University of Idaho, College of Natural Resources:
Fire Ecology and Management (FOR 326/426), annually, 2010-2014
Fire Behavior (FOR 450), annually, 2010-2015
Computational Data Analysis and Visualization (FOR 504), 2012, 2014
Altered Ecologies (FOR 504-02), 2013
Global Fire and Ecological Feedbacks (FOR 504-02), 2011
- 2007-2009 Adjunct Instructor, Montana State University, Department of Earth Sciences:
Biogeography (GEOG 302), 2008 (co-instructor), 2009
Weather and Climate (GEOG 303), 2008
Mountain Geography (GEOG 430), 2008
Advanced Biogeography (GEOG 505), 2009

POST DOC, GRADUATE, AND UNDERGRADUATE ADVISING

Post Docs (2): Kimberly Taylor (2016-), Jesse Morris (2013-2015), Kelly Derr (2013-2014)

Primary (4):

Completed: Paul Dunnette (MS, U of ID, 2010-2013), Kerry Kemp (PhD, U of ID, 2010-2015)

PhD through candidacy: Adam Young (PhD, U of ID, 2011-)

MS: Lacey Hainkin (MS, U of MT, 2016-), Tyler Hoecker (MS, U of ID and U of MT, 2014-)

Secondary (9): Carolyn Barrett (PhD, U of IL, 2006-2012), Polly Buotte (PhD, U of ID, 2014-2015), Nolan Brewer (MS, U of ID, 2009-2012), Jay Chin (PhD, Australian Nat. University, 2011-), Carl Davidson (MS, U of IL, 2011-2012), Ryan Kelly (PhD, U of IL, 2008-2014), Lauren Perreault (MS, ID St. Univ., 2009-2010), Katie Morrison (MS, U of ID, 2011-2014), Vanessa Selimovic (PhD, U Montana, 2015-), Kara Yedinak (PhD, WA St. Univ., 2009-2013).

Undergraduate honors theses/projects (7): Lucas Townsend (U of MT, Forestry, 2016-), Patrick Flannigan (Env. Sci., U of ID, 2013); Shannon Pauli (Fire Ecology and Management, U of ID, 2012-2013); Cody Parker (Env. Sci., U of ID, 2011-2013); Travis Reeves (Env. Sci., U of ID, 2011); Alison Kennedy (Montana St. Univ., 2007); Andrew Whitmore (Montana St. Univ., 2006-2007); Jason Smith (U of WA, 2000-2001).

UNIVERSITY SERVICE

2015- Member, W. A. Franke College of Forestry and Conservation. space committee
2015-2016 Member, University Ecology Programs and Organization Review Committee

U. IDAHO

2014-2015 Member, College of Natural Resources, College Curriculum Committee
2014-2015 Member, College of Natural Resources, committee on lab space
2013-2014 Member, College of Natural Resources, committee to reevaluate tenure and promotion criteria
2013-2015 Member, Department of Forest, Rangeland, and Fire Sciences, Graduate Program Committee
2013-2014 Member, Department of Forest, Rangeland, and Fire Sciences, Forest Biologist search committee
2013-2014 Member, Department of Forest, Rangeland, and Fire Sciences, tenure and promotion review committee
2011-2012 Member, Department of Forest, Rangeland, and Fire Sciences, Department Head search committee
2009-2015 Provided over 25 invited guest lectures in forest resources, rangeland ecology and management, geography, and environmental science courses.

PROFESSIONAL AND PUBLIC SERVICE

2015 Member, NSF proposal review panel.
2013-2014 Chair, Paleoecology Section of the Ecological Society of America.
2013 DeVleig Distinguished Lecturer Series, McCall Outdoor Science School, U. Idaho.

- 2012-2013 Vice Chair, Paleoecology Section of the Ecological Society of America.
- 2007 → Development and deployment of programs for charcoal analysis and chronology development for sediment records: *CharAnalysis*, *MCAgeDepth*, *CRSModel*.
- 2006-2009 Secretary, Paleoecology Section of the Ecological Society of America
- 2006-2012 Instructor, North Cascades Institute, Diablo, Washington. Designed and co-taught two-day courses on forest and fire ecology for adults each summer.
- 2005, 2010 Co-organized and led workshop for 20-30 participants on reconstructing fire regimes with sediment charcoal records at the Ecological Society of America meeting.
- 2007 → Ad hoc peer review (c. 9/yr): *Annals of the Association of American Geographers*, *Canadian Journal of Forest Research*, *Ecology*, ***Ecology Letters***, *Ecological Monographs*, *Ecosphere*, *Ecosystems*, *Global Change Biology*, *International Journal of Wildland Fire*, Island Press, *Journal of Applied Ecology*, *Journal of Biogeography*, *Journal of Ecology*, *Journal of Paleolimnology*, *Journal of Quaternary Science*, *Journal of Vegetation Science*, *Mires and Peat*, ***Nature***, *New Phytologist*, *PLoS ONE*, *Philosophical Transactions of the Royal Society – Biological Sciences*, ***PNAS***, *The Holocene*, *Quaternary Research*, *Quaternary Science Reviews*, **U.S. National Science Foundation**, **National Aeronautics and Space Administration**, Swiss National Science Foundation, CRDF Global.

PROFESSIONAL DEVELOPMENT

- 2014 “Bayesian Modeling for Practicing Ecologists” One of 22 professionals selected to participate in this nine-day NSF-funded workshop at Colorado State University.
- 2011 “Stable Isotopes in the Paleoenvironment” Student in five-day NSF-funded short course at Kansas State University
- 2011 COMPASS workshop for science communication. Participant in one-day workshop.

HONORS AND AWARDS

- 2012 Outstanding Research Award, College of Natural Resources, University of Idaho
- 2009 Awarded, USGS Mendenhall Postdoctoral Fellowship (declined)
- 2004, 2nd place, Edward S. Deevey Award for Excellence in Paleoecology, presented to the best student presentation in paleoecology at the Ecological Society of America Meeting, Portland, OR, and Montreal, Quebec.
- 2003 1st place, student poster competition, Study of Environmental Arctic Change open science meeting, Seattle, WA. \$1000 award to attend an international meeting.
- 2001 2nd place, Edward S. Deevey Award for Excellence in Paleoecology, presented to the best student presentation in paleoecology at the Ecological Society of America Meeting, Madison, WI.
- 2000 Xi Sigma Pi Forestry Honors Society, University of Washington.
- 1998 Elbert C. Cole Award for outstanding performance in the Dep. of Biology, Middlebury College.

PROFESSIONAL ASSOCIATIONS

- 2006 → International Paleofire Working Group
- 2006 → American Geophysical Union
- 2000 → Ecological Society of America, Paleoecology Section member

INVITED LECTURES AND SEMINARS

- 2017 USFS, Missoula Fire Science Lab Seminar Series
- 2016 Systems Ecology Graduate Seminar Series, University of Montana
- 2015 Department of Ecosystem and Conservation Sciences, University of Montana
- 2014 Department of Geography Climate Change Seminar, University of Idaho
- 2014 Department of Geography departmental seminar, University of Utah
- 2012 Paleoworks Master Class on charcoal analysis, Australian National University, Canberra, Australia
- 2012 Webinar to fire managers via JFSP-funded Alaska Fire Science Consortium: "Tundra burning in Alaska: rare events or harbinger of climate change?" May 24th
- 2011 Forest Ecology Seminar Series, University of Montana
- 2010 Keynote speaker, Bonanza Creek LTER Symposium, Fairbanks, Alaska
- 2009 Quaternary Ecosystem Science Training International Group, guest lecturer, France
- 2009 Department of Biology, University of Denver
- 2008 Department of Geography, University of Wisconsin
- 2007 Department of Ecology, Montana State University; Department of Geography, University of Oregon
- 2006 Department of Earth Sciences, Montana State University