

## DANIEL GIRARD GAVIN

### Curriculum Vitae

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### EDUCATION

- Ph. D. University of Washington, Division of Ecosystem Sciences, College of Forest Resources. 2000. Advisors: Linda Brubaker and Ken Lertzman.
- M.S. University of Washington, Division of Ecosystem Sciences, College of Forest Resources. 1997. Advisor: Linda Brubaker.
- B.A. Dartmouth College, Department of Biological Sciences. 1992. Advisor: David Peart.

### PROFESSIONAL EMPLOYMENT

- |   |           |
|---|-----------|
| Professor, Department of Geography, University of Oregon  | 2018–     |
| Associate Professor, Department of Geography, University of Oregon                                  | 2011–2018 |
| Assistant Professor, Department of Geography, University of Oregon                                  | 2006–2011 |
| Research Associate, Department of Botany and Agricultural Biochemistry,<br>University of Vermont    | 2005–2006 |
| Postdoctoral Associate, Department of Plant Biology, University of Illinois<br>at Urbana-Champaign. | 2001–2005 |

### AREAS OF PROFESSIONAL INTEREST AND EXPERTISE

1. Biogeographic and biodiversity responses to climate change.
2. Quaternary paleoecology, paleoclimatology, disturbance ecology, and fire history.

### PUBLICATIONS

#### **Book**

Gavin, D.G., and L.B. Brubaker. 2015. Late Pleistocene and Holocene Environmental Change on the Olympic Peninsula. *Ecological Studies* Vol. 222. Springer. 144 p. [ISBN: 978-3-319-11013-4 (Print) 978-3-319-11014-1 (Online)]

#### **Refereed Journal Articles**

61. Colombaroli, D., **D.G. Gavin**, and A.E. Morey. 2018. Watershed erosion estimated from a high-resolution sediment core reveals a non-stationary frequency-magnitude relationship regulated by internal feedbacks. *Earth Surface Processes and Landforms*. Online Early
60. **Gavin, D.G.**, J.E. Kusler, and B.P. Finney. 2018. Millennial-scale decline in coho salmon abundance since the middle Holocene in a coastal Oregon watershed. *Quaternary Research* 89:432–445.

59. Herring, E.M., **D.G. Gavin**, M. Fernandez, and F.S. Hu. 2018. Ecological history of a long-lived conifer in a disjunct population. *Journal of Ecology* 106: 319-332.
58. Marshall, J. A., J.J. Roering, **D.G. Gavin**, and D.E. Granger. 2017. Late Quaternary climatic controls on erosion rates and geomorphic processes in western Oregon, USA. *Geological Society of America Bulletin*: B31509.1.
57. Dawson, M. N., J.C. Axmacher, C. Beierkuhnlein, J.L. Blois, B.A. Bradley, A.F. Cord, J. Dengler, K. S. He, L. R. Heaney, R. Jansson, M. D. Mahecha, C. Myers, D. Nogués-Bravo, A. Papadopoulou, B. Reu, F. Rodríguez-Sánchez, M. J. Steinbauer, A. Stigall, M.-N. Tuanmu, and **D.G. Gavin**. 2016. A second horizon scan of biogeography: Golden Ages, Midas touches, and the Red Queen. *Frontiers of Biogeography* 8.
56. Schwörer, C., **D.G. Gavin**, I.R. Walker, and F.S. Hu. 2016. Holocene treeline changes in the Canadian Cordillera are controlled by climate and local topography. *Journal of Biogeography* 44:1148-1159.
55. Hoffman, K.M., **D.G. Gavin**, and B.M. Starzomski. 2016. 700 years of human-driven and climate-influenced fire activity in a British Columbia coastal temperate rainforest. *Royal Society Open Science*. DOI: 10.1098/rsos.160608.
54. Schwörer, C., D.M. Fisher, **D.G. Gavin**, C.W. Temperli, P.J. Bartlein. 2016. Modeling postglacial vegetation dynamics of temperate maritime forests with special regard to snowpack. *Climatic Change* 137:379-394.
53. Hoffman K.M., **D.G. Gavin**, K.P. Lertzman, D.J. Smith and B.M. Starzomski. 2016. 13,000 years of fire history derived from soil charcoal in a British Columbia coastal temperate rainforest. *Ecosphere* 7(7):e01415.
52. Retallack, G.J., **D.G. Gavin**, E.B. Davis, N.D. Sheldon, J.M. Erlandson, M.H. Reed, E.A. Bestland, J.J. Roering, R.J. Carson, and R.B. Mitchell. 2016. Oregon 2100: Projected Climatic and Ecological Changes. *Bulletin of the Museum of Natural History, University of Oregon*: 26:1–21.
51. 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. A framework to assess biogeochemical response to ecosystem disturbance using nutrient partitioning ratios. *Ecosystems* 19:387-395.
50. Marshall, J.A., Roering, J.J., Bartlein, P.J., Praskievicz, S., **Gavin, D.G.**, Hales, T.C., and Granger, D.E. 2015. Seeing frost for the trees: Did climate increase erosion in unglaciated landscapes during the Late Pleistocene? *Science Advances* 1: e1500715.
49. **Gavin, D. G.** 2015. Vegetation stability and the habitat associations of the endemic taxa of the Olympic Peninsula, Washington, USA. *Frontiers of Biogeography* 7: 38-51.
48. Herring, E.M. and **D.G. Gavin**. 2015. Climate and vegetation since the last interglacial (MIS 5e) in a putative glacial refugium, northern Idaho, USA. *Quaternary Science Reviews* 117:82-95.
47. Dobrowski, S.Z., A. Swanson, A., J. Abatzoglou, Z. Holden, H. Safford, M. Schwartz, and **D.G. Gavin**. 2015. Forest structure and species traits mediate projected recruitment declines in western US tree species. *Global Ecology and Biogeography* 24:917-927.

46. Walsh, M. K., J.R. Marlon, S.J. Goring, K.J. Brown, and **D.G. Gavin**. 2015. A regional perspective on Holocene fire–climate–human interactions in the Pacific Northwest of North America. *Annals of the Association of American Geographers* 105:1135-1157.
45. Flower, A., **D.G. Gavin**, E.K. Heyerdahl, R.A. Parsons, and G.M. Cohn. 2014. Western spruce budworm outbreaks did not increase fire risk over the last three centuries: A dendrochronological analysis of inter-disturbance synergism. *PLOS One*, 9 (12), e114282.
44. **Gavin, D.G.**, M.C. Fitzpatrick, P.F. Gugger, K.D. Heath, F. Rodríguez-Sánchez, S.Z. Dobrowski, A. Hampe, F.S. Hu, M.B. Ashcroft, P.J. Bartlein, J.L. Blois, B. C. Carstens, E.B. Davis, G. de Lafontaine, M.E. Edwards, M. Fernandez, P.D. Henne, E.M. Herring, Z.A. Holden, W. Kong, J. Liu, D. Magri, N.J. Matzke, M.S. McGlone, F. Saltré, A.L. Stigall, Y.-H.E. Tsai, and J.W. Williams. 2014. Climate refugia: joint inference from fossil records, species distribution models and phylogeography. *New Phytologist* 204:37–54.
43. Cohn, G.M., R.A. Parsons, E.K. Heyerdahl, **D.G. Gavin**, and A. Flower. 2014. Simulated western spruce budworm defoliation reduces torching and crowning potential: a sensitivity analysis using a physics-based fire model. *International Journal of Wildland Fire* 23:709–720.
42. Flower, A., **D.G. Gavin**, E.K. Heyerdahl, R.A. Parsons, and G.M. Cohn. 2014. Drought-triggered western spruce budworm outbreaks in the interior Pacific Northwest: A multi-century dendrochronological record. *Forest Ecology and Management* 324:16-27.
41. McLauchlan, K.K., P. E. Higuera, **D.G. Gavin**, S.S. Perakis, M.C. Mack, H. Alexander, J. Battles, F. Biondi, B. Buma, D. Colombaroli, S.K. Enders, D.R. Engstrom, F.S. Hu, J.R. Marlon, J. Marshall, M. McGlone, J.L. Morris, L.E. Nave, B. Shuman, E.A.H. Smithwick, D. H. Urrego, D. A. Wardle, C.J. Williams, and J.J. Williams. 2014. Reconstructing disturbances and their biogeochemical consequences over multiple timescales. *BioScience* 64:105–116.
40. Morey, A.E., C. Goldfinger, C.E. Briles, **D.G. Gavin**, D. Colombaroli, D., and J.E. Kusler. 2013. Are great Cascadia earthquakes recorded in the sedimentary records from small forearc lakes? *Natural Hazards and Earth System Sciences* 13: 2441-2463.
39. Dawson, M.N., A.C. Algar, A. Antonelli, L.M. Davalos, E. Davis, R. Early, A. Guisan, R. Jansson, J.-P. Lessard, K.A. Marske, J.L. McGuire, A.L. Stigall, N.G. Swenson, N.E. Zimmermann, and **D.G. Gavin**. 2013. An horizon scan of biogeography. *Frontiers of Biogeography* 5:130-158.
38. **Gavin, D.G.**, L.B. Brubaker, and D.N. Greenwald. 2013. Postglacial climate and fire-mediated vegetation change on the western Olympic Peninsula, Washington. *Ecological Monographs* 83:471–489.
37. **Gavin, D.G.**, M. Anderson, and J.J. Roering. 2013. A potential late-Holocene disjunction of *Sequoia sempervirens* on the central Oregon coast. *Northwest Science* 87: 81–94.
36. Power M.J., and 19 others. 2013. Climatic control of the biomass-burning decline in the Americas after AD 1500. *The Holocene* 23: 3–13.
35. Daniau, A.-L. and 61 others. 2012. Predictability of biomass burning in response to climate changes. *Global Biogeochemical Cycles* 26: GB4007, doi: 10.1029/2011GB004249.

34. Oswald, W.W., **D.G. Gavin**, P.M. Anderson, L.B. Brubaker, and F.S. Hu. 2012. A 14,500-year record of landscape change from Okpilak Lake, northeastern Brooks Range, northern Alaska. *Journal of Paleolimnology*. 48:101-113.
33. Marlon, J.R., P.J. Bartlein, **D.G. Gavin**, C.J. Long, R.S. Anderson, C.E. Briles, K.J. Brown, D. Colombaroli, D.J. Hallett, M.J. Power, E.A. Scharf, and M.K. Walsh. 2012. Long-term perspective on wildfires in the western USA. *Proceedings of the National Academy of Sciences of the United States of America* 109:E535–E543.
32. **Gavin, D.G.**, A.C.G. Henderson, K.S. Westover, S.C. Fritz, I.R. Walker, M. Leng and F.S.Hu. 2011. Abrupt Holocene climate change and potential response to solar forcing in western Canada. *Quaternary Science Reviews* 30:1243-1255.
31. Colombaroli, D. and **D.G. Gavin**. 2010. Highly episodic fire and erosion regime over the past 2000 years in the Siskiyou Mountains, Oregon. *Proceedings of the National Academy of Sciences of the United States of America* 107: 18909-18914.
30. Higuera, P.E., **D.G. Gavin**, P.J. Bartlein and D.J. Hallett. 2010. Peak detection in sediment-charcoal records: impacts of alternative analytical methods on fire-history interpretation. *International Journal of Wildland Fire* 19:996-1014.
29. **Gavin, D.G.** 2009. The coastal-disjunct mesic flora in the inland Pacific Northwest of USA and Canada: refugia, dispersal, and disequilibrium. *Diversity and Distributions* 15:972-982.
28. **Gavin, D.G.**, F.S. Hu, I.R. Walker, and K.S. Westover. 2009. The northern inland temperate rainforest of British Columbia: Old forests with a young history? *Northwest Science* 83:70-78.
27. 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.
26. **Gavin, D.G.**, B. Beckage, and B. Osborn. 2008. Forest dynamics and the growth decline of red spruce and sugar maple on Bolton Mountain, Vermont: a comparison of modeling methods. *Canadian Journal of Forest Research* 38:2635-2649.
25. Beckage B., B. Osborne, **D.G. Gavin**, C. Pucko, T. Siccama, and T. Perkins. 2008. A rapid upward shift of a forest ecotone during 40 years of warming in the Green Mountains of Vermont. *Proceedings of the National Academy of Sciences of the United States of America* 105:4197-4202.
24. Chase, M., C. Bleskie, I.R. Walker, **D.G. Gavin**, and F.S. Hu. 2008. Midge-inferred Holocene summer temperatures in southeastern British Columbia, Canada. *Palaeogeography, Palaeoclimatology, Palaeoecology* 257: 244-259.
23. Power, M. and 84 others. 2007. Changes in fire regimes since the Last Glacial Maximum: an assessment based on a global synthesis and analysis of charcoal data. *Climate Dynamics*. DOI 10.1007/s00382-007-0334-x.
22. Bigler, C., **D.G. Gavin**, C. Gunning, and T.T. Veblen. 2007. Drought induces lagged tree mortality in a subalpine forest in the Rocky Mountains. *Oikos* 116: 1983-1994.

21. **Gavin, D.G.**, D. Hallett, F.S. Hu, K. Lertzman, S.J. Prichard, K.J. Brown, J.A. Lynch, P. Bartlein, and D.L. Peterson. 2007. Forest fire and climate change: insights from sediment charcoal records. *Frontiers in Ecology and the Environment* 5: 499-506.
20. 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.
19. **Gavin, D.G.**, and F.S. Hu. 2006. Spatial variation of climatic and non-climatic controls on species distribution: the range limit of *Tsuga heterophylla*. *Journal of Biogeography* 33:1384-1396.
18. **Gavin, D.G.**, F.S. Hu, K. Lertzman, and P. Corbett. 2006. Weak climatic control of stand-scale fire history during the late Holocene. *Ecology* 87:1722-1732.
17. 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.
16. Clegg, B.F., W. Tinner, **D.G. Gavin**, and F.S. Hu. 2005. Morphological differentiation of *Betula* (birch) pollen in northwest North America and its palaeoecological application. *Holocene* 15:229-237.
15. **Gavin, D.G.**, L.B. Brubaker, J.S. McLachlan, and W.W. Oswald. 2005. Correspondence of pollen assemblages with forest zones across steep environmental gradients, Olympic Peninsula, Washington, USA. *Holocene* 15:648-662.
14. Foit, F.F., **D.G. Gavin**, and F.S. Hu. 2004. The tephra stratigraphy of two lakes in south-central British Columbia, Canada and its implications for mid-late Holocene volcanic activity at Glacier Peak and Mount St. Helens, Washington, USA. *Canadian Journal of Earth Sciences* 41:1401-1410.
13. **Gavin, D.G.** 2003. Forest soil disturbance intervals inferred from soil charcoal radiocarbon dates. *Canadian Journal of Forest Research* 33:2514-2518.
12. **Gavin, D.G.**, L.B. Brubaker, and K.P. Lertzman. 2003. An 1800-year record of the spatial and temporal distribution of fire from the west coast of Vancouver Island, Canada. *Canadian Journal of Forest Research* 33:573-586.
11. **Gavin, D.G.**, L.B. Brubaker, and K.P. Lertzman. 2003. Holocene fire history of a coastal temperate rain forest based on soil charcoal radiocarbon dates. *Ecology* 84:186-201.
10. **Gavin, D.G.**, W.W. Oswald, E.R. Wahl, and J.W. Williams. 2003. A statistical approach to evaluating distance metrics and analog assignments for pollen records. *Quaternary Research* 60:356-367.
9. Oswald, W.W., L.B. Brubaker, F.S. Hu, and **D.G. Gavin**. 2003. Pollen-vegetation calibration for tundra communities in the Arctic Foothills, northern Alaska. *Journal of Ecology* 91:1022-1033.
8. Lertzman, K., **D. Gavin**, D. Hallett, L. Brubaker, D. Lepofsky, and R. Mathewes. 2002. Long-term fire regime estimated from soil charcoal in coastal temperate rainforests. *Conservation Ecology* 6(2): 5. [online]

7. **Gavin, D.G.** 2001. Estimation of inbuilt age in radiocarbon ages of soil charcoal for fire history studies. *Radiocarbon* 43:27-44.
6. **Gavin, D.G.**, J.S. McLachlan, L.B. Brubaker, and K.A. Young. 2001. Postglacial history of subalpine forests, Olympic Peninsula, Washington, USA. *Holocene* 11:177-188.
5. **Gavin, D.G.**, and L.B. Brubaker. 1999. A 6000 year soil pollen record of sub-alpine meadow vegetation in the Olympic Mountains, Washington, USA. *Journal of Ecology* 87:106-122.
4. **Gavin, D.G.**, and D.R. Peart. 1999. Vegetative life history of a dominant rain forest canopy tree. *Biotropica* 31:288-294.
3. **Gavin, D.G.**, and D.R. Peart. 1997. Spatial structure and regeneration of *Tetramerista glabra* in peat swamp rain forest in Indonesian Borneo. *Plant Ecology* 131:223-231.
2. **Gavin, D.G.**, D.R. Peart, and M. Leighton. 1996. Canopy gaps in peat swamp forest in West Kalimantan, Indonesia. *Tropical Biodiversity* 3:243-249.
1. **Gavin, D.G.**, and D.R. Peart. 1993. Effects of beech bark disease on the growth of American beech (*Fagus grandifolia*). *Canadian Journal of Forest Research* 23:1566-1575.

#### **Articles in preparation or review**

**Gavin, D.G.**, A. White, P.S. Sanborn, and R.J. Hebda. Deglacial landforms and Holocene vegetation trajectories in the northern interior cedar-hemlock forests of British Columbia. In review for GSA Books.

Johnson, G., J.J. Roering, D. Sutherland, and **D.G. Gavin**. Past estuarine dissolved oxygen records inferred from sedimentary trace metal and organic matter preservation in Coos Bay. In preparation.

#### **Non-Refereed Articles and Book Reviews**

9. **Gavin, D.G.**, A. Flower, G.M. Cohn, R.A. Parsons, and E.K. Heyerdahl. 2017. Western Spruce Budworm and Wildfire: Is There a Connection? *Fire Management Today* 75:12-16.
8. **Gavin, D.G.** and Hu, F.S. 2013. Paleobotany | Quaternary Pollen Records | Pollen Records, Postglacial | Northwestern North America. In Elias, S. editor. *Encyclopedia of Quaternary Science* 2<sup>nd</sup> Edition. Elsevier.
7. **Gavin, D.G.**, S.Z. Dobrowski, A. Hampe, F.S. Hu and F. Rodríguez-Sánchez. 2012. Climate Refugia: Joint Inference from Fossils, Genetics, and Models. *PAGES News* 20: 105.
6. Hampe, A., F. Rodríguez-Sánchez, S. Dobrowski, F.S. Hu, and **D.G. Gavin**. 2012. Climate refugia: from the Last Glacial Maximum to the twenty-first century. *New Phytologist* 197:16-18.
5. **Gavin, D.G.** 2012. Biogeography. In *21<sup>st</sup> Century Geography: A Reference Handbook*. Sage. Pp. 77-87.
4. Gavin, D.G. 2011. Holocene book review: *Climate Warming in Western North America: Evidence and Environmental Effects* (ed Frederic H. Wagner) Salt Lake City: The University of Utah Press. *The Holocene* 21 (3), 513-514

3. Mote, P.W., **D. Gavin**, and A. Huyer. 2010. Chapter 1 – Climate Change in Oregon’s Land and Marine Environments. *in*, Oregon Climate Assessment Report, K.D. Dello and P.W. Mote (eds). Oregon Climate Change Research Institute, College of Oceanic and Atmospheric Sciences, Oregon State University, Corvallis, OR. [<http://www.occri.net/ocar>]
2. Higuera, P.E., **D.G. Gavin**, P. Henne, and M.E. Peters. 2010. Recent advances in the analysis and interpretation of sediment-charcoal records. *PAGES News* 18:57-59.
1. **Gavin, D.G.** 2010. Ecological complexity at the forest-grassland transition revealed by lake sediment records. *Frontiers of Biogeography* 2(1) [[http://www.biogeography.org/html/fb/FBv2i1/FBv02i01p02\\_Gavin.pdf](http://www.biogeography.org/html/fb/FBv2i1/FBv02i01p02_Gavin.pdf)]

## **AWARDS**

William S. Cooper Award, Ecological Society of America (with Linda Brubaker and Ken Lertzman).	2005
Second Place among student presentations, Ecology and Environmental Sciences Section, AAAS Pacific Division Meeting, Ashland, OR.	2000
Woods Scholarship, College of Forest Resources, University of Washington.	2000
Edward S. Deevey Award for Excellence in Paleoecology, Ecological Society of America Annual Meeting, Spokane, WA.	1999
Xi Sigma Pi Forestry Honor Society, University of Washington.	1995

## **EXTRAMURAL FUNDING**

National Science Foundation. D. G. Gavin. Holocene Fire History and the Vulnerability of a Primary Rainforest to Fire Encroachment. \$300,000	2016-2020
Bureau of Land Management. D.G. Gavin and R. Sherriff. Climate Change, Fire History, and Redwood Abundance Across Space and Time. \$22,000	2015-2017
National Science Foundation. Christopher Bone, J. Murphy, D.G. Gavin, P. Bartlein, C. Moseley, M. North. CNH: Forest Governance and Climate Change in Driving Native Insect Outbreaks. \$1,360,000	2014-2018
Oregon Sea Grant. D.A. Sutherland, J.J. Roering and D.G. Gavin. Understanding Oceanic and Terrestrial Controls on Dissolved Oxygen in the Coos Bay Estuary. \$259,000	2014-2016
National Science Foundation. A. Flower and D.G. Gavin. Doctoral Dissertation Research: Interactions Among Forest Defoliator Outbreaks, Wildfires, Climatic Variability, and Nitrogen Availability in the Interior Pacific Northwest. \$15,961	2012-2014
National Science Foundation. D.G. Gavin, S.Z. Dobrowski, F.S. Hu, and K. Heath. Collaborative Research: How Mountains Maintain Biodiversity: A Multidisciplinary Characterization of a Pleistocene Refugium in the Interior Pacific Northwest. \$188,400	2012-2015

PAGES workshop support. Climate Refugia: Joint Inference from Fossils, Genetics and Models. \$5000	2012
National Science Foundation. K.K. McLauchlan, P. Higuera, and D.G. Gavin. RCN: The Novus Project for Integrating Paleo- and Neo-ecosystem Ecology. \$417,286 (based at Kansas State).	2012-2017
National Geographic Society, Committee for Research and Exploration. “The Inland Temperate Rainforest of the Pacific Northwest: Old Forests with a Young History?” \$22,165.	2010-2012
Cooperative Ecosystem Studies Unit. “Paleoenvironmental Overview of the Olympic National Park.” \$50,000.	2010-2012
National Science Foundation. J.J. Roering and D.G. Gavin. “Climatic and biotic controls on late Quaternary erosion in the Oregon Coast Range.” \$324,000.	2010–2013
Joint Fire Science Program. D.G. Gavin, E.K. Heyerdahl, and R. Parsons. “Interactive effects of insects, fire and climate on fuel loads and fire behavior in mixed conifer forest.” \$266,000.	2009–2012
U.S. National Committee for Quaternary Science and the National Academies. Travel Fellowship to the XVII Congress of the International Union for Quaternary Research, Cairns, Australia.	2007
United States Geological Survey. D.G. Gavin. Software development for analysis of lake sediment charcoal records. \$5000.	2005
National Science Foundation. F.S. Hu and D.G. Gavin. “Climatic and ecological controls on the Holocene range expansion of western hemlock and western redcedar in the interior Pacific Northwest”. \$330,000.	2002–2005
Global Forest Foundation, Vancouver, B.C. D.G. Gavin, K.P. Lertzman and P. Corbett. “Disturbance regimes of subalpine forests in the West Kootenays” CDN\$30,000.	2000–2003
Science Council of British Columbia, Forest Renewal BC. K.P. Lertzman (PI), L.B. Brubaker, D.G. Gavin, and E. Nelsen. “Long-term fire histories in coastal temperate rainforest” CDN\$227,810.	1996–2000

**INTERNAL FUNDING**

University of Oregon College of Arts and Sciences Program Grant. Kick-starting the Atlas of the Olympic Peninsula. (with Jim Meacham). \$4940.	2016-2017
University of Oregon College of Arts and Sciences. General Education Renaissance Grant. Boosting Active Learning in the Classroom and Outdoors. \$2000.	2015



University of Oregon Research, Innovation and Graduate Education (RIGE) Incubating Interdisciplinary Initiatives (I3). C. Bone, P.J. Bartlein, D.G. Gavin, A. Moloney and C. Mosely. "Drivers of the Beetle Empire: Understanding the Coupling of Climate Change and Forest Management in Bark Beetle Outbreaks." \$50,000.	2013
University of Oregon College of Arts and Sciences Program Grant. Climate Refugia Workshop. \$5000.	2012
University of Oregon Junior Professorship Development Award. \$750.	2010
Rippey Innovative Teaching Award, College of Arts and Sciences, University of Oregon.	2008
University of Oregon Junior Professorship Development Award. \$1000.	2007
College of Forest Resources, University of Washington. Research Improvement Grant. \$2,200.	1998

#### **PAPERS PRESENTED AT REGIONAL AND NATIONAL CONFERENCES (2000-2017)**

(\* INVITED SPEAKER, PRESENTER)

- \* Gavin, D.G. 2018. Forests with naturally infrequent fire: their resilience and susceptibility to impacts by people and climate change. 2<sup>nd</sup> International Conference on Natural Resource Biotechnology, University Atma Jaya, Yogyakarta, Indonesia.
- Herring, E.M., D.G. Gavin, S.Z. Dobrowski, F.S. Hu, and M. Fernandez. 2017. Long-distance jump dispersal but slow range infilling of mountain hemlock in the interior Pacific Northwest. Northwest Scientific Association Annual Meeting, Ashland, OR.
- Gavin, D.G., D. Colombaroli, and A. Morey. 2015. Watershed erosion estimated from a high-resolution sediment core reveals a non-stationary frequency-magnitude relationship and importance of seasonal climate drivers. American Geophysical Union.
- Schwörer, C., P.J. Bartlein, C.W. Temperli and D.G. Gavin. 2015. Past and Future Climate Change Impacts on Mountain Forests on the Olympic Peninsula (Washington, USA). American Geophysical Union.
- Gavin, D.G. 2015. Vegetation stability and the habitat associations of the endemic taxa of the Olympic Peninsula, Washington, USA. Northwest Scientific Association Annual Meeting, Pasco, WA.
- Gavin, D.G. 2015. Endemism-stability association on the Olympic Peninsula, Washington, assessed from palynological records. International Biogeography Society biennial meeting, Bayreuth, Germany.
- Grissino-Mayer, H.D., D.G. Gavin, M.T. Rother, and E.A. Schneider. 2014. Testing fire synchrony and fire-climate relationships in dendroecology using one-dimensional Ripley's K-function. Annual Meeting of the Association of American Geographers, Tampa, FL.
- \*Gavin, D.G., A. Flower, G. Cohn, R.Parsons, and E. Heyerdahl. 2014. Are western spruce budworm and fire synergistic disturbances in mixed conifer forests? Central Oregon Fire Symposium, Bend OR.

- Retallack, G. J., D.G. Gavin, and E.B. Davis. 2014. Oregon 2100: Projected climatic and ecological changes. Oregon Academy of Sciences, Eugene, OR.
- \*Gavin, D.G. 2013. Development of forest communities over steep environmental gradients from the late Glacial to present in the Pacific Northwest. American Association of Stratigraphic Palynologists Annual Meeting, San Francisco, CA.
- Gavin, D.G. 2013. Development of forest communities over steep environmental gradients from the late Glacial to present in the Pacific Northwest. International Biogeography Society Special Meeting on the Biogeography of Species Interactions, Montreal, Canada.
- Gavin, D.G., M. Anderson, and J.J. Roering. 2013. Oregon's orphan redwood: A potential late-Holocene disjunction of *Sequoia sempervirens* 250 km north of its extant distribution. International Biogeography Society Biennial Meeting, Miami, FL.
- Herring, E.M. and D.G. Gavin. 2013. Climate and vegetation in a putative Pleistocene refugium in northern Idaho inferred from a 200,000-year sediment record. International Biogeography Society Biennial Meeting, Miami, FL.
- Gavin, D.G. and L.B. Brubaker. 2012. Postglacial climate and fire-mediated forest diversity on the western Olympic Peninsula, Washington. Ecological Society of America Annual Meeting, Portland OR.
- Gavin, D.G., E.M. Herring, K. Heath, S. Dobrowski, M. Fernandez and F.S. Hu A multidisciplinary characterization of a Pleistocene refugium in the interior Pacific Northwest of North America. 13th International Palynological Congress, Tokyo, Japan.
- Gavin, D.G. and L.B. Brubaker. 2012. Postglacial climate and fire-mediated forest diversity on the western Olympic Peninsula, Washington. Northwest Scientific Association meeting, Boise, ID.
- Gavin, D.G. and E.M. Herring. 2011. Reconstructing a putative cryptic northern mesic refugia: Paleoclimate reconstructions and topoclimatic downscaling. Biennial meeting of the International Biogeography Society, Heraklion, Greece.
- Herring, E.M. and D.G. Gavin. 2010. A first glance into the Clearwater Refugium of northern Idaho: a preliminary pollen record from Dismal Lake. Ecological Society of America, Pittsburgh, PA.
- Flower, A., D.G. Gavin, E.A. Heyerdahl, and R.A. Parsons. 2010. Western spruce budworm outbreak, climate, and fire interactions in the mixed conifer forests of the interior Pacific Northwest. Association of American Geographers, Washington, D.C.
- Gavin, D.G., E.M. Herring, and A. Flower. 2010. Climate and fire controls of broad-scale vegetation patterns in northwestern North America: projections of the climatic water balance and no-analog climates. Association of American Geographers, Washington, D.C.
- Deligne, N.I., K.V. Cashman, D.G. Gavin, and J.J. Roering. 2010. Reforestation of Collier Cone lava flow, central Oregon Cascades. Goldschmidt 2010. Knoxville, TN.
- Gavin, D.G., et al. 2009. Multiple abrupt shifts in the early Holocene climate of western Canada. Association of American Geographers. Las Vegas, NV.

- \*Gavin, D.G. 2009. Biogeographic implications of fire regimes through the Holocene in the Pacific Northwest (USA and British Columbia). Boreal Forest Fire Symposium, Lac Duparquet, Québec. Keynote Speaker.
- \*Gavin, D.G. and F.S. Hu 2008. The potential role of Pleistocene refugia in the Holocene development of the interior wet-belt forests of the Pacific Northwest, USA. International Palynological Congress, Bonn, Germany.
- \*Gavin, D.G. 2008. Paleoecological evidence of the controls of forest composition and the late Holocene development of the interior wet-belt forests of eastern British Columbia. Botany 2008 (Botanical Society of America/Canadian Botanical Society), Vancouver, BC.
- \*Gavin, D.G. and P.J. Bartlein. 2008. The “Quaternary conundrum” and postglacial biogeography in the inland Pacific Northwest. Ecological Society of America, Milwaukee, WI.
- Colombaroli, D. and D. Gavin. 2008. Long-term interaction between fire and vegetation: 2000 years of variability in the fire regime of the Siskiyou Mountains (SW Oregon, USA). Ecological Society of America, Milwaukee, WI.
- Gavin, D.G. 2008. Assembling the biota of the interior wet belt: separate lines of evidence from paleoecology, phylogeography, and climate models. BC’s Inland Rainforest – Conservation and Community. University of Northern British Columbia, Prince George, BC.
- \*Gavin, D.G. 2008. Assembling the biota of northern Idaho: separate lines of evidence from paleoecology, genetics, and climate models. American Society for Environmental History. Boise, ID.
- Gavin, D.G. and F.S. Hu 2007. History of disjunct species distributions in the Pacific Northwest. Congress of the International Union for Quaternary Research, Cairns, Australia.
- Gavin, D.G. and B. Beckage 2007. The roles of climate and disturbance in the decline of sugar maple and red spruce in northern New England. Association of American Geographers, San Francisco, CA.
- \*Gavin, D.G., F.S. Hu, K.P. Lertzman, and D.J. Hallett. 2006. Holocene fire-climate relationships in eastern British Columbia and adjacent areas. American Quaternary Association, Bozeman, MT.
- \*Gavin, D.G., F.S. Hu, K.P. Lertzman, and D.J. Hallett. 2006. Forest fires in space and time: comparing long records of forest fires to understand their climatic controls. American Statistical Association, Seattle WA.
- Gavin, D.G. and F.S. Hu. 2005. Bioclimatic models of species ranges using Gaussian mixture distributions and multiscale segmentation. Ecological Society of America, Montréal, QC.
- \*Gavin, D.G. and F.S. Hu. 2004. Scale-dependent controls of late-Holocene forest fires in British Columbia: insights from intra-regional paleorecord comparisons. American Geophysical Union, San Francisco, CA.
- Higuera, P., D. Gavin and M. Peters. 2004. When does a charcoal peak represent a fire? Insights from a simple statistical model. Ecological Society of America. Portland, OR.

- Gavin, D.G. and F.S. Hu. 2003. Climatic vs. non-climatic control of western hemlock distribution in its coastal and interior ranges. Ecological Society of America, Savannah, GA.
- Gavin, D.G. and F.S. Hu. 2002. Late Holocene range expansion of western hemlock and western redcedar in the interior Pacific Northwest. Ecological Society of America, Tucson, AZ.
- Gavin, D.G. and K.P. Lertzman. 2001. Rates of windthrow-caused soil disturbance inferred from soil charcoal radiocarbon dates. Ecological Society of America, Madison, WI.
- Gavin, D.G. 2000. Holocene fire history in a coastal temperate rain forest, Vancouver Island. Ecological Society of America, Spokane, WA.

#### **INVITED DEPARTMENTAL SEMINARS**

- Université du Québec en Abitibi-Témiscamingue, Rouyn Noranda, Québec. December 2016.
- Olympic Natural Resources Center (Forks, WA) June 2016.
- Geography Department, University of Oregon, 2015.
- University of Victoria, November 2014.
- University of Nevada Reno. April 2012.
- Université Montpellier 2, Montpellier, France. June 2011.
- Klamath Fire Ecology Symposium, Orleans, CA. April 2011.
- University of Minnesota, Quaternary Paleoecology Short Course. May 2010.
- Oregon State University, Department of Geosciences. February 2010.
- Washington State University, Vancouver, WA. December 2009.
- University of Oregon, Fireside Conversations on Global Warming. November 2008.
- University of Oregon, Department of Geological Sciences. November 2008.
- University of Oregon, Center for Ecology and Evolutionary Biology. February 2008.
- University of Oregon, Center for Ecology and Evolutionary Biology. February 2007.
- Oregon State University, College of Forestry, Corvallis, OR. November 2006.
- Middlebury College, Department of Biology, Middlebury, VT. November 2005.
- University of Vermont, Department of Botany, Burlington, VT. April 2005.
- Harvard Forest, Petersham, MA. December 2003.
- Dartmouth College, Department of Biological Sciences. November 2002.
- University of Illinois at Urbana-Champaign, Program in Ecology and Evolutionary Biology. January 2002.
- United States Forest Service, Rocky Mountain Research Station Fire Sciences Lab, Missoula, MT. February 2001.
- University of Washington, Quaternary Research Center. 2000.
- Workshops*
- TropPeat, Honolulu, HI. June 2017.
- Global Paleofire Working Group, Totnes, UK. October 2007.
- Fire History Workshop, Flagstaff, AZ. May, 2005.
- NOAA-PAGES Fire and Climate Workshop, Tucson, AZ. April 2002.
- The role of science in management decisions in Clayoquot Sound, Clayoquot Biosphere Project, Tofino, B.C. January 1998.

## TEACHING

### **Courses**

C:\MyPlanet (Freshman Interest Group, College Connections).....	2009,2010,2013
The Natural Environment (GEOG 141).....	2009–2017
Biogeography (GEOG 323).....	2007–2017
Advanced Biogeography: Species Range Limits (GEOG 423/523).....	2007
Advanced Biogeography: Dendrochronology (GEOG 423/523).....	2009,2011
Advanced Biogeography: Biodiversity Crisis (GEOG 423/523).....	2016
Long-term Environmental Change (GEOG 430).....	2008,2010,2014,2017
Fire in the Environment (GEOG 410).....	2007
Fire and Natural Disturbances (GEOG 433/533).....	2009,2011,2013,2015,2017
Graduate seminar (GEOG 607).....	2008,2010,2012,2014,2016
Biogeography (University of Vermont).....	2004
Weather and Climate (University of Vermont).....	2003
General Ecology (Seattle University, two semesters).....	2000-2001

## PROFESSIONAL SERVICE

### **Major activities and responsibilities**

Department Head, Geography, University of Oregon, 2017–2020.

Graduate Employee Director, Geography, University of Oregon, 2016–2017.

Chair, Cooper Award Committee (Ecological Society of America), 2015–2018.

Director, Environmental Science Institute, University of Oregon, 2015–2017.

National Academy Education Fellow in the Life Sciences, 2015 National Academies Summer Institute on Undergraduate Education. 2015.

Associate Department Head, Geography. 2014–2015.

Northwest Scientific Association Board of Directors, 2014–2017.

Steering Committee: The NOVUS Research Coordination Network on Paleoecosystem Ecology, 2012-2016. <http://novusrcn.wordpress.com>

Workshop organizer: Revealing Nature's Past. Secondary school teacher workshop, June 19-21, 2013, Eugene OR. (Curriculum on environmental change and climate change).

Vice President for Conferences, International Biogeography Society, 2011–2014. (Organizing scientific program for the 2013 and 2015 biennial meetings of the IBS).

Symposium organizer: How Mountains Maintain Diversity: Evaluating Climate Refugia From Genetics, Paleocology, and Models. August 2012. Ecological Society of America annual meeting. Portland OR.

Workshop organizer: Climate refugia: Joint inference from fossils, genetics and models. Aug 1-3, 2012. Eugene OR.

Workshop organizer: Developing and interpreting fire histories from sediment charcoal records. Ecological Society of America, Pittsburgh, PA. 2010.

Associate Editor. *Frontiers of Biogeography: The magazine of the International Biogeography Society*. 2009–

Lab host for two summer research assistants through Undergraduate Catalytic Outreach and Research Experiences (UCORE), 2009 & 2011.

National Science Foundation; Panelist. 2008.

Graduate Admissions Committee, Department of Geography. 2008-2010.

Developer of analytical and statistical software used by the paleoecological community (<http://geog.uoregon.edu/envchange/software.html>)

Symposium organizer: “Severe insect outbreaks in North American forests: recent trends, long-term recurrence and the role of climate.” Annual Meeting of the Ecological Society of America, Savannah, GA. 2003.

Workshop organizer: “The future of paleoecology”. Annual Meeting of the Ecological Society of America, Savannah, GA. 2003.

Chair, Paleoecology Section, Ecological Society of America. 2002-2003.

Ad-Hoc referee for the following professional journals. *Canadian Journal of Forest Research*; *Ecology*; *Ecosystems*; *Environment, Development and Sustainability*; *Forests*; *Global Change Biology*; *Global Environmental Change*; *The Holocene*; *Journal of Biogeography*; *Journal of Ecology*; *Journal of the Torrey Botanical Society*; *Journal of Tropical Ecology*; *Journal of Vegetation Science*; *Mitigation and Adaptation Strategies for Global Change*; *Nature Communications*; *Oecologia*; *Physical Geography*; *Quaternary Research*; *Quaternary Science Reviews*; *Trees: Structure and Function*.

External reviewer of proposals for the following granting agencies: National Science Foundation; Natural Sciences and Engineering Research Council (Canada); Agence Nationale de la Recherche (France); George Melendez Wright Climate Change Fellowships; Lewis and Clark Fund for Exploration and Field Research.

### **SOCIETY MEMBERSHIPS**

Ecological Society of America  
American Quaternary Association  
Association of American Geographers

International Biogeography Society  
Northwest Scientific Association

### **OUTREACH SEMINARS**

Friends of the Pleistocene, Pacific Northwest Cell, trip co-leader, Olympic Peninsula, 2015  
Siuslaw Watershed Council (Lane County, OR), 2015.

Jacksonville (OR) Public Library, 2012.

Osher Life-Long Learning, Eugene OR. 2009.

Freshman Honors Science Colloquium (University of Oregon). 2008-2013.

Crow High School science class presentations. 2007.

Washington County Small Woodlands Association. 2007.

## DISSERTATIONS, THESIS AND UNDERGRADUATE THESES

### Ph.D. Dissertation Committees – Chair

- Underway Chantel Saban, Geography  
Underway Lauren Hendricks, Geography  
Underway Geoffrey Johnson, Geography and ESSP  
2014 Erin M. Herring, Geography. *Late Quaternary and Holocene Paleoecology of Interior Mesic Forests of Northern Idaho*  
2013 Aquila Flower, Geography. *Western Spruce Budworm, Climate, and Forest Fire Interactions in the Interior Pacific Northwest: A Multi-Century Dendrochronological Analysis*

### Ph.D. Dissertation Committees – Member

- Underway Dongmei Chen, Geography  
Underway Jamila Baig, Geography  
Underway Matthew Goslin, Geography  
2018 Jaime Dexter, Anthropology  
2016 Cécile Remy, University of Quebec at Abitibi-Témiscamingue. *Spatio-temporalité des dynamiques de feux et de végétation au cours de l'Holocène en forêt boréale coniférienne (Québec-Labrador)*. (External reviewer)  
2016 Kyle Meyer, Biology  
2015 Jill Marshall, Geological Sciences. *Climatic variation in the late Quaternary: Controls on ecosystems and erosion rates over millennial time scales in the Pacific Northwest*  
2014 Kenji Izumi, Geography. *Application of Paleoenvironmental Data for Testing Climate Models and Understanding Past and Future Climate Variations*  
2014 Ashley Streig, Geological Sciences. *High Resolution Timing and Style of Coseismic Deformation: Paleoseismic Studies on the Northern and Southern San Andreas Fault*.  
2013 Isabel Kasin, Department of Ecology and Natural Resource Management, Norwegian University of Life Sciences. *History and Fate of the Legacy of Fire: the Charcoal Carbon Pool in Boreal Forest Landscapes*. (External Reviewer).  
2013 Adriana Martinez, Geography. *The Geomorphic Effects of Native and Invasive Riparian Vegetation: Sprague River, Oregon*.  
2012 Daniele McKay, Geological Sciences. *Mafic Holocene Eruptions in the Oregon Cascades*  
2012 Natalia Deligne, Geological Sciences. *After the Flow: Landscape Response to the Emplacement of Holocene Lava Flows, Central Oregon Cascades, USA*.  
2012 Gabriel Yospin, Biology. *Land Use, Climate Change and Restoration Effects on Fire Regimes and Forest Successional Dynamics in Former Oak Savanna in the Willamette Valley, Oregon*  
2011 Olivier Blarquez, Université Montpellier 2. *Fire, climate and subalpine forests in the Alps during the Holocene*. (External Reviewer)  
2010 Suzanne Walther, Geography. *Remote measurement of gravel-bed river depths and analysis of the geomorphic response of rivers to canals and small dams*.

- 2010 Paul Blanton, Geography. *The Distribution and Impact of Roads and Railroads on the River Landscapes of the Coterminous United States*
- 2008 Jennifer Marlon, Geography. *The Geography of Fire, A Paleo Perspective*
- 2006 Phil Higuera, University of Washington. *Late Glacial and Holocene Fire History in the Southcentral Brooks Range, Alaska: Direct and Indirect Impacts of Climatic Change on Fire Regimes*

M.S. Thesis Committees – Chair

- 2018 Kate Hayes, Geography.
- 2016 Geoffrey Johnson, Geography. *Environmental history of estuarine dissolved oxygen inferred from trace-metal geochemistry and organic matter.*
- 2014 Ariana White, Geography. *Postglacial vegetation change in the interior temperate rainforest of British Columbia.*
- 2013 David Fisher, Geography. *Postglacial Transient Dynamics of Olympic Peninsula Forests: Comparing Predictions and Observations*
- 2012 Jennifer Kusler, Geography. *A 7500-Year Paleolimnological Record of Environmental Change and Salmon Abundance in the Oregon Coast Range*
- 2011 Ian David Crickmore, Geography. *Correlates of Fire Severity of a Large Fire in the Oregon Cascades*

M.S. Thesis Committees – Member

- 2018 Sarah Ward, Biology
- 2017 Nathan Schachtman, Earth Sciences.
- 2010 Jaime Dexter, Anthropology. *Plant Exploitation in Arid Upland Environments: Quantitative Data from the Erin's Cave Archaeological Site, SE Oregon.*
- 2010 Matt Millett, Geography. *Map Communication, Map Cognition, and Egocentric Map Behavior*

Undergraduate Theses – Chair

- 2018 Lauren Winter, ENVS
- 2015 Brynn Harrison, Geography. *Changes in Lacustrine Sediment Lithology from 45,000 to 22,000 Years Ago Reveal Glacial Environments Near Little Lake, Oregon.*
- 2015 Wade Martin, Honor's College. *Douglas-fir Encroachment in Willamette Valley Oak Savanna.*
- 2007 Kathryn L. Argo, Geography and Environmental Studies. *The Relation of Precipitation and Annual Tree-Ring Growth of Douglas-fir in Stands of Different Ages in the Western Oregon Cascade Range.*

Undergraduate Theses – Member

- 2009 Thea Evenstead, Honor's College. *Restoration Ecology and Invasive Species: Managing Reed Canary Grass (*Phalaris arundinacea*) in the Southern Willamette Valley*
- 2007 Christopher Carlson, Honor's College. *Derivation of a fuel potential index in Hawaii using remotely sensed data*