

Eric G. DeChaine, PhD

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Education

Ph. D. Ecology and Evolutionary Biology, University of Colorado, Boulder, 2003
Comparative phylogeography of the Rocky Mountain alpine tundra
M. S. Zoology, University of Hawaii, Manoa, 1995
B. S. Biology, University California, San Diego, 1991

Professional Experience

Associate Professor of Biology, Western Washington University (WWU)	2011 - present
Herbarium Curator, WWU	2006 - present
Assistant Professor of Biology, WWU	2006 - 2011
NSF Postdoctoral Fellow, Harvard University	2004 - 2006
Internship, Harvard University Herbaria	2005 - 2006
Teaching Assistant, University of Colorado	1999 - 2003
Research Assistant, University of Colorado	2000 - 2001
Instructor, Mendocino College	1996 - 1999
Instructor, Wenatchee Valley College	1996 - 1998
Wildlife Biologist, Great Plains Wildlife Institute, Jackson, WY	1995 - 1996
Teaching Assistant, University of Hawaii	1992 - 1995

Research Funding (values for awards > \$10,000 are given)

National Science Foundation (3-yrs, DEB-1256832)	\$269,849	2013 - 2016
<i>Collaborative Research: RUI-Integrated Inventories of Biomes of the Arctic</i>		
Australia Research Council (DP110105549)	\$182,000	2011-2014
<i>Comparative Paleo-Genomics of the Arctic Tundra Ecosystem.</i>		
National Science Foundation (5-yrs, ARC-0714232)	\$418,943	2007 - 2012
<i>The impacts of arctic and alpine refugia on genetic divergence in tundra flora</i>		
WWU Project Development Award	\$37,352	2006 - 2007
WWU Summer Research Grant		2006
NSF Postdoctoral Fellowship (DBI-0400591)	\$100,000	2004
Rozella Smith Fellowship		2003
University of Colorado, Grad Student Research Grant		2003
NSF Doctoral Dissertation Improvement Grant	\$10,000	2002
University of Colorado, Grad Research Fellowship		2002
University of Colorado, Grad Student Research Grant		2002
Beverly Sears Graduate Student Grant		2002
John W. Marr Ecology Fund		2002
Indian Peaks Wilderness Association Scholarship		2002
Hazel Schmoll Research Fellowship		2002
Undergraduate Research Apprentice Program Grant		2002
Canon-National Parks Scholarship		2001
Edna Bailey Sussman Fellowship		2001
University of Colorado, Grad Student Research Grant		2001

The Colorado Mountain Club Academic Fellowship	2001
Indian Peaks Wilderness Association Scholarship	2001
John W. Marr Ecology Fund	2001
Beverly Sears Graduate Student Grant	2000
University of Colorado Museum - Walker Van Riper Grant	2000
University of Colorado Museum EPOB graduate student Grant	2000

Research Funding in Support of Students

Washington NASA Space Grant Consortium Summer Research Award for Future Science Teachers – Kevin Eyer	2011
WWU Women in Science Scholarship - Jenna McAleer	2008 - 2009
Research Opportunities Grants for Undergraduate Students - Christy Miller	2008 - 2009
WWU Foundation's Mentoring Undergraduates Grant - William Crowley, Jenna McAleer, and Jon Nichols	2007 - 2008
- M. Rick Raney	2006 - 2007
Washington NASA Space Grant Consortium Summer Research Award for Future Science Teachers - Andrew Nelsen	2007 & 2008

Publications (Student author)

- DeChaine, EG, BR Forester, H Schaefer, and CC Davis. 2013. Deep genetic divergence between disjunct refugia in the arctic-alpine King's Crown, *Rhodiola integrifolia* (Crassulaceae). PLoS ONE In press.
- DeChaine, EG, SA Anderson, JM McNew, and BM Wendling. 2013. On the Evolutionary and Biogeographic History of *Saxifraga* sect. *Trachyphyllum* (Gaud.) Koch (Saxifragaceae Juss.). PLoS ONE 8(7): e69814. doi:10.1371/journal.pone.0069814.
- Forester, BR, EG DeChaine, and AG Bunn. 2013. Integrating ensemble species distribution modelling and statistical phylogeography to inform projections of climate change impacts on species distributions. Diversity and Distributions doi: 10.1111/ddi.12098.
- Wending, B and E DeChaine. 2012. A phylogenetic analysis of *Campanula* L. (Campanulaceae) from Western North America. Douglasia 36: 7-11.
- Wending, BM and EG DeChaine. 2011. A molecular analysis of *Hackelia venusta* (Boraginaceae) and related taxa. USFWS Report (ref#1341000107). Accepted July, 2011.
- Wending, BM, KE Galbreath, and EG DeChaine. 2011. Resolving the evolutionary history of *Campanula* (Campanulaceae) in western North America. PLoS ONE 6: e23559.
- Galbreath, KE, J. Cook, AA Eddingsaas, and EG DeChaine. 2011. Diversity and demography in Beringia: multi-locus tests of paleodistribution models reveal the complex history for arctic ground squirrels. Evolution 65: 1879-1896.
- DeChaine, E and F Rhoades. 2010. Archiving the Flora of the Pacific Northwest in the Western Washington University Herbarium. Douglasia 34: 18-19.
- Ickert-Bond, SM, EG DeChaine, C Parker, and DF Murray. 2009. Contrasting patterns of plant distribution in Beringia. Park Science in the Arctic Proceedings 26-32.
- DeChaine, EG. 2008. A Bridge or a Barrier? Beringia's Influence on the Distribution and Diversity of Tundra Plants. Plant Ecology and Diversity 1: 197-207.
- Harmer, TL, RJ Rotjan, AD Nussbaumer, M Bright, AW Ng, EG DeChaine, and CM Cavanaugh. 2008. Free-living tubeworm endosymbionts found at deep-sea vents. Applied and Environmental Microbiology 74: 3895-3898.
- DeChaine, EG and AP Martin. 2006. Using coalescent simulations to test the impact of Quaternary climate cycles on divergence in an alpine plant-insect association. Evolution, 60: 1004-1013.
- DeChaine, EG, AE Bates, TM Shank, and CM Cavanaugh. 2006. Off-axis symbiosis found: characterization and biogeography of bacterial symbionts of *Bathymodiolus* mussels from Lost City

- hydrothermal vents. *Environmental Microbiology* 8: 1902-1912.
- Duperron, S, C Bergin, F Zielinski, A Blazejak, A Perntaler, ZP Mckiness, E DeChaine, and C Cavanaugh. 2006. A dual symbiosis shared by two mussel species, *Bathymodiolus azoricus* and *Bathymodiolus puteoserpentis* (Bivalvia: Mytilidae), from hydrothermal vents along the northern Mid-Atlantic Ridge. *Environmental Microbiology* 8: 1441-1447.
- DeChaine, EG and AP Martin. 2005. Historical biogeography of two alpine butterflies in the Rocky Mountains: Broad-scale concordance and local-scale discordance. *Journal of Biogeography* 32: 1943-1956.
- DeChaine, EG and AP Martin. 2005. Marked genetic divergence among sky island populations of *Sedum lanceolatum* (Crassulaceae) in the Rocky Mountains. *American Journal of Botany* 92: 477-486.
- DeChaine, EG and CM Cavanaugh. 2005. Symbioses of methanotrophs and deep-sea mussels (Mytilidae: Bathymodiolinae). *Progress in Molecular and Subcellular Biology* 227-249.
- DeChaine, EG and AP Martin. 2004. Historic cycles of fragmentation and expansion in *Parnassius smintheus* (Papilionidae) inferred using mtDNA. *Evolution* 58: 113-127.

Invited Presentations

- DeChaine, EG. May 2012. A history of diversification and endemism in arctic-alpine plants of North America. Institute of Arctic Biology, University of Alaska, Fairbanks, Fairbanks, AK.
- DeChaine, EG. April 2012. TBA. Climatic variability: The driver of diversification, endemism, and rarity in tundra plants. School of Biology, Georgia Institute of Technology, Atlanta, GA
- DeChaine, EG. February 2012. Diversification of Arctic-Alpine Plants during the Pleistocene. Department of Biology, University of Victoria, Victoria, BC, Canada
- DeChaine, EG. 2011. Move, adapt, or die: How arctic species survived the Ice Ages. College of Science and Technology and City of Bellingham Lecture Series. Bellingham, WA
- DeChaine, EG. 2011. Arctic Plants: Where are they and are they on the move? Washington Native Plant Society, Komo Kulshan Chapter, Bellingham, WA
- DeChaine, EG. 2010. Conservation implications of the Quaternary: A multi-species, multi-gene analysis. University of Adelaide, Australian Centre for Ancient DNA, Adelaide, Australia
- DeChaine, EG. 2009. Evolutionary responses of tundra vegetation to climatic variability. Harvard University Herbaria, Cambridge, MA
- DeChaine, EG. 2009. Ice-Age impacts on tundra plant diversity. Geological Lecture Series, Spokane Community College, Spokane, WA
- DeChaine, EG. 2009. History hidden within a midden: The evolution of the steppe tundra inferred from modern and ancient DNA. Canadian Quaternary Association, Vancouver
- Metcalf, JL, EG DeChaine, D Nogues-Bravo, C Anderson, B Shapiro, RP Guralnick, and A Cooper. 2009. Tracking the niche of North American bison through time using ancient DNA. Canadian Quaternary Association, Vancouver, Canada
- DeChaine, EG. 2008. The impact of Quaternary climate change on genetic divergence in tundra flora. University of Adelaide, Australian Centre for Ancient DNA, Adelaide, Australia
- DeChaine, EG. 2008. Exploring the Arctic Flora in a Changing Climate. Washington Native Plant Society, Salal Chapter, Mt. Vernon, WA
- Ickert-Bond, SM, DeChaine, EG, Parker, C, and DF Murray. 2008. Dispersal of Asian plants to North America via Beringia: Relict or Recent Mosaic? National Park Service. Beringia Days, Fairbanks, AK
- DeChaine, EG. 2007. Unearthing the evolutionary history of tundra flora through comparative coalescent analyses. Symposium on the History, Evolution, and Future of Arctic and Alpine Flora, St. Andrews University, Scotland
- DeChaine, EG. 2007. Exploring the Ice-Ages through comparative coalescent analyses of the alpine tundra. Humboldt State University, Department of Biology, Arcata, CA
- DeChaine, EG. 2007. Refuge amongst glaciers: The impact of Ice Ages on divergence of tundra flora.

Western Washington University, Department of Geology, Bellingham, WA
DeChaine, EG. 2006. The Impact of the Ice Ages on Arctic-Alpine Flora. Washington Native Plant Society, Komo Kulshan Chapter, Bellingham, WA
DeChaine, EG. 2006. Evolution of Alpine Flora: The Impacts of Glacial Cycles and Ecological Interactions on Plant Divergence. Mesa State College, Grand Junction, CO

Presented Papers (Student Author)

P Flynn and EG DeChaine. 2009. A comparative analysis of Beringia's history and the consequences for Arctic species. Sigma Xi Scientific Research Society.
A Nelsen and EG DeChaine. 2008. Alpine flora survey of Mt. Baker, WA. Sigma Xi Scientific Research Society.
J Nichols and EG DeChaine. 2008. Modeling the effects of climate change on the distribution of the alpine endemic, *Senecio elmeri* (Asteraceae). Sigma Xi Scientific Research Society.
DeChaine, EG and AP Martin. 2005. Consequences of paleoclimatic cycles on an alpine plant-insect association. Society for the Study of Evolution
DeChaine, EG, TS Shank, and CM Cavanaugh. 2005. Divergence in the deep: Inferring dispersal barriers for bacterial symbionts of deep-sea mussels (genus *Bathymodiolus*). 3rd International Symposium on Hydrothermal Vent and Seep Biology
McCuddin, ZP, EG DeChaine, and CM Cavanaugh. 2005. The Role of Host and Habitat in the Evolutionary History of Chemoautotrophic Symbionts. American Society for Microbiology
DeChaine, EG, AE Bates, TM Shank, and CM Cavanaugh. 2004. Off-axis symbiosis found: Endosymbionts of *Bathymodiolus* from the Lost City hydrothermal vent field. International Society for Microbial Ecology, Annual Meeting. RIDGE2000 Mid-Atlantic Ridge Workshop
DeChaine, EG, TM Shank, and CM Cavanaugh. 2004. Biogeography of symbiotic bacteria from deep-sea hydrothermal vents. Society for the Study of Evolution
DeChaine, EG and AP Martin. 2003. Cycles of population fragmentation and expansion from multiple interglacial refugia inferred for the Rocky Mountain butterfly, *Parnassius smintheus* (Papilionidae). Society for the Study of Evolution
DeChaine, EG and AM Martin. 2002. Pleistocene Impacts on Genetic Diversity in the Alpine Butterfly, *Parnassius phoebus*. Rocky Mountain National Park Research Conference
DeChaine, EG 2000. Local adaptation in an alpine plant-herbivore interaction. Dept. EPOB Graduate Symposium, University of Colorado

Graduate Students at WWU

Barry Wendling, graduated Spring 2009
Daniel Bronny, graduated Fall 2011
Andrew Nelsen, SMATE - mentored for the '08 & '09 summers on his NASA Award.
Kevin Eyer, SMATE - mentored for the '11 summer on his NASA Summer Research Award.

Undergraduate Students Mentored at WWU – 15 Total (F=Fall, W=Winter, S=Spring)

S Kyeong Lynch	F 2011 - S 2012	Tiana Luke	F 2009 - S 2010
Stacy Anderson	F 2011 - S 2012	Christy Miller	F 2008 - S 2009
Jennifer McNew	F 2011 - S 2012	Patrick Flynn	F 2008 - S 2009
Charles Ervin	W 2011 - S 2011	Jenna McAleer	S 2007 - S 2009
Amanda Sutton	F 2010 - S 2011	Will Crowley	F 2007 - W 2009
Trevor Gearhart	F 2010 - S 2011	Jon Nichols	F 2007 - S 2008
Karissa Logan	W 2011 - S 2011	M Rick Raney	F 2006 - S 2007
Kelsey Lorberau	S 2010 - S 2011		

Graduate Student Committees at WWU

Melanie Davis, Biology 2011-2013 (expected)
Leslie Parks, ESCI, graduated Fall
Brenna Forester, ESCI, graduated Fall 2012
Daniel Slakey, Biology, graduated Fall 2010

Teaching Honors

Excellence in Teaching Award, University of Colorado 2003
ASB Awarded Teacher of the Month, Wenatchee Valley College 1996

Botany, Ecology, & Evolution Courses Taught (* courses created by EG DeChaine)

Animal Ecology	Evolution	Plant Biology
Ecology	Evolutionary Biology	Plant Systematics
Ecology Lab	Genetics	Quaternary Biogeography*
Ecology of Migratory Birds*	Hawaiian Reef Ecology*	Systematic Botany
Elementary Plant Classification	Mycology*	Watershed Ecology*
Environmental Biology	Paleontology	

Additional Courses Taught

Anatomy & Physiology I	Cell Biology	Insect Classification
Anatomy & Physiology II	General Biology Lab I	Meteorology
Animal Biology	General Biology Lab II	Physical Chemistry
Astronomy	Geology	Wildlife Management
Biology, Intro.	Insect Biology	Zoology

Professional Service

Herbarium Curator, WWU	2006 - present
Greenhouse Committee, WWU	2006 - 2012
Limited Term Lecturer Committee	2010 - 2012
Map Library Committee	2009 - 2011
Ecological Genetics Search Committee, WWU	2007-2008
Seminars and Group Gatherings Committee, WWU	2006-2007
Faculty Fellow, Center for Service Learning, WWU	2006-2007
Undergraduate and graduate student mentor, Harvard University	2004 - 2006
Graduate Student Mentor, University of Colorado	2002
Outward Bound Pinnacle Scholarship Advisor, WVCN	1997-1998
Student Learning Outcome Assessment Committee, WVCN	1997-1998
Scientific Advisor, Forests of Okanogan County Balanced Resource Symposium	1997

Journal Reviewer

American J. Botany	Int. J. Biogeography	New Phytologist
American Naturalist	Int. J. Molecular Evolution	Plant Ecology & Diversity
Ecography	Int. J. Plant Sciences	Systematic Biology
Evolution	Journal of Zoology	Systematic Botany
Heredity	Molecular Ecology	Taxon

Book Reviewer

University of California Press

Proposal Reviewer

Australian Research Council

National Science Foundation

National Geographic Society

Natural Sciences & Engineering Research Council of Canada