# Jessica J. Rykken

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## Education

**Oregon State University** Corvallis, OR.

Ph.D. Department of Botany and Plant Pathology, Entomology Program, 2004.

**University of Vermont** Burlington, VT.

M.S. Department of Botany, Field Naturalist Program, 1995.

**Smith College** Northampton, MA.

 B.A. Biology, magna cum laude, 1987.

 Sea Education Association (SEA) semester (1986) Woods Hole, MA.

**Professional Employment and Academic Research**

**Consulting Researcher** Self-employed (July 2013-present)

* Conducted insect pollinator surveys in selected areas of Olympic NP and North Cascades NP.
* Organized a four-day arthropod BioBlitz for scientists and the general public in Denali NPP.
* Developed a rapid-assessment protocol for alpine arthropods in the Réserve de Biodiversité Uapishka, Quebec.
* Curated and identified nearly 500 species of insects collected at George Washington Birthplace NM.

**Research Associate** Museum of Comparative Zoology (MCZ), Harvard University. (Jul 2011-Jun 2013)

* Initiated development of a Taxonomists-in-Parks program for the National Park Service.
* Designed and wrote outreach materials for a nation-wide native bee survey across 75 national parks.
* Assisted in an arthropod inventory for George Washington Birthplace National Monument, VA.
* Designed educational activities and created outreach materials in support of biodiversity discovery activity-related projects in Acadia National Park.
* Coordinated a “photblitz” to document arthropod diversity at Boston Harbor Islands NRA.

**Researcher-in-Residence** Denali National Park and Preserve, AK (Jun-Jul 2012, ongoing)

* Conducted a field survey of insect pollinators (bees and syrphid flies) in selected areas of the park.
* Gave talks, led field seminars, and delivered informal presentations to park visitors and staff.
* Prepared research summaries, a final report, and a “Virtual Tour of Denali Pollinators” for the park visitor center and website.

**Postdoctoral Fellow/Research Associate** MCZ, Harvard University. (Jul 2005-Jun 2011)

* Collaborated with National Park Service natural resource managers and education staff to coordinate an All Taxa Biodiversity Inventory (ATBI) of Boston Harbor Islands NRA, focused on arthropods. (<http://insects.oeb.harvard.edu/boston_islands>)
* Developed, implemented, and oversaw all field and lab activities, including: field sampling design; arthropod collecting; specimen curation and identification; QA/QC protocols; database management.
* Coordinated day-to-day logistics of the project, including: budget, overseeing intern contracts, purchasing supplies, arranging boat travel to the islands, hiring students/interns, writing annual reports.
* Assisted in the design and creation of biodiversity posters, project website, brochure, insect field guides, award-winning card game, insect displays, and other media.
* Organized public collecting events such as bioblitzes.
* Identified arthropods of many orders to species level using taxonomic keys, and arranged for taxonomic specialists across North America and Europe to assist in specimen identification.
* Supervised and mentored over 40 students, interns, and volunteers in the field and in the lab.
* Conducted 12 workshops for educators, volunteers, and park rangers.
* Collaborated with NPS staff to develop field-based and classroom ATBI curricula for more than 4,800 public school students.
* Presented more than 20 talks to scientists, educators, land managers, conservationists, and others.
* Worked with managers to design and implement a long-term native bee monitoring program.

**Consulting Entomologist** Yellowstone National Park, WY. (Aug 2009)

* + Assisted with pre-event organization, on-site logistics, specimen collections, and processing for the invertebrate component of the first ever “Yellowstone Bioblitz."

**Consulting Entomologist** Vermont Agency of Natural Resources, Waterbury, VT. (Mar-Nov 2005)

* Identified 23,000 bark and ambrosia beetles (Scolytinae) from a trapping program across Vermont.

**Visiting Graduate Student** East Asia and Pacific Summer Institute, National Taiwan University and Tunghai University, Taiwan. (Jun-Aug 2004)

* Selected to participate in an NSF-funded research program for graduate students in East Asia.
* Collaborated on several field-based spider ecology projects with students at Tunghai University, spanning tropical to alpine ecosystems across Taiwan.

**Graduate Research Assistant** State University, Corvallis, OR. (Sep 1999-May 2004)

* Developed and implemented two research projects to evaluate the response of litter arthropods (including carabid beetles) and mollusks to various harvest treatments in managed forests.
* Made recommendations to resource managers regarding the conservation of forest-floor arthropod biodiversity in managed forests.

**Teaching Assistant** Oregon State University, Corvallis, OR. (Sep-Oct 1999; Sep 2001-Jun 2002)

* Taught forest entomology and general biology labs for undergraduate science majors.

**Forest Entomologist** Vermont Agency of Natural Resources (ANR), Waterbury, VT. (Oct 1997-Jul 1999)

1. Developed a curriculum and educational tool kit to teach elementary students about forest insect biodiversity.
2. Authored a guide for the identification and natural history of common northeastern bark beetles.

**Consulting Biologist** Wildlife Conservation Society, Bronx, NY. (Nov 1997-Feb 1998)

1. Identified 2,500 carabid beetles and provided natural history information for a study looking at natural disturbance as a model for silviculture in northeastern forests (Adirondack Park, NY).

**Aquatic Biologist** Vermont ANR, Waterbury, VT. (Nov 1996-Jul 1999)

* Surveyed fish, mussels, amphibians, and aquatic invertebrates for biomonitoring projects.
* Specialized in taxonomy of chironomid (Diptera) larvae.
* Designed and implemented an inventory and assessment program for vernal pools and cedar swamps.
* Assisted in sampling and processing (chemical/physical parameters) water from acidified high elevation lakes in the Green Mountains.

**Field Assistant** Norwegian Univ. of Science and Technology, Trondheim, Norway. (Jul-Aug 1998)

* Collected, identified, and curated native bees in central Norway for a pollination ecology study.

**State Wetlands Assistant Coordinator** Vermont ANR, Waterbury, VT. (Mar-Oct 1996)

* Evaluated potential environmental impacts on functions and values of over 200 wetlands located along a proposed pipeline route.
* Recommended methods for protecting wetlands and streams from adverse pipeline impacts through technical reports, regulatory permits, and meetings with State and pipeline officials.

**Fisheries Biologist; Biological Technician** USDA Forest Service, US Fish and Wildlife Service, National Marine Fisheries Service, National Marine Mammal Lab. (1990-95, seasonal positions)

* Numerous field projects in WA, AK, and VT that included: conducting physical and biological stream assessments; assessing tag retention in coho salmon; surveying vegetation, fish, mammals, and waterfowl; aerial wildlife surveys; tagging and censusing of northern fur seals.

**Fisheries Extension Agent** U.S. Peace Corps. Mahendranagar, Nepal. (August 1987-December 1989)

* Peace Corps volunteer in Nepal. Collaborated with farmers to develop aquaculture programs that integrated the sustainable culture of livestock, crops, and fish. Made individual site visits, organized and facilitated group sessions, and coordinated training activities with Nepali counterparts.

## Field and Taxonomy Courses

Southwestern Research Station, Portal, AZ. (2006, 2013)

 Field and lab courses on Hymenoptera (wasp) and Anthophila (bee) taxonomy and ecology.

National Conservation Training Center, Shepherdstown, WV. (2009, 2010)

 Field and lab course on native bee taxonomy, ecology, and monitoring.

Eagle Hill Field Research Station, Steuben, ME. (1995, 1996, 2010)

 Field and lab courses in aquatic entomology, forest entomology, and spider taxonomy.

Delta Institute of Natural History, Bowdoin, ME. (2006)

 Field and lab course on Diptera (fly) taxonomy and ecology.

## Selected Grants and Awards

North Coast and Cascades Science Learning Network research grant (Natl. Park Serv.), 2014. ($10,000)

The Waterman Fund grant for alpine research and stewardship, 2014. ($4,000)

Researcher-in-Residence, Denali National Park and Preserve, 2012. ($10,000)

Dixon Fellowship, Schoodic Education and Research Center Institute, Acadia Natl. Park, 2011. ($10,000)

Outstanding Scientist of the Year for Biodiversity Education, awarded by Discover Life in America, 2008.

East Asia and Pacific Summer Institutes, 2004. NSF fellowship to conduct research in Taiwan ($3,000+)

Oregon Headwaters Research Council. Dr. A. Moldenke, J. Rykken, L. Gundersen, 2002. ($50,000)

Oregon Sports Lottery Scholarship, 2001 ($4,200)

Sigma Xi Scientific Research Society Grant, 1994 ($400)

Field Naturalist Program Fellowship, 1992-1994 ($13,000)

## Peer-Reviewed Publications

*Book chapters:*

Rykken, J.J. and B.D. Farrell. 2013. Discovering the microwilderness in parks and protected areas. Pages 306-322 *in* Lemelin, R.H. (Ed.) The management of insects in recreation and tourism. Cambridge University Press, New York, NY.

*Journal articles:*

Rykken, J.J., P.C. Jepson, A.R. Moldenke. 2011. Ground-dwelling arthropod distribution and movement across a fragmented riparian forest. Northwest Science 85: 527-541.

Clark, A.T., J. Rykken, and B.D. Farrell. 2011. The effects of biogeography on ant diversity and activity on the Boston Harbor Islands, Massachusetts, U.S.A. PLoS ONE 6(11): e28045.

Davidson, R.L. and J.J. Rykken. 2011. Rediscovery of *Bembidion (Lymnaeum) nigropiceum* (Marsham) (=*puritanum* Hayward) (Coleoptera: Carabidae: Bembidiini) in Massachusetts, with remarks on biology and habitat. ZooKeys 147: 487-496.

Davidson, R.L., Rykken, J.J., and B.D.Farrell. 2011. Carabid beetle diversity and distribution in Boston Harbor Islands national park area (Coleoptera: Carabidae). ZooKeys 147:497-526.

Rykken, J.J., S.S. Chan, and A.R. Moldenke. 2007. Headwater riparian microclimate patterns under alternative forest management treatments. Forest Science 53:270-280.

Rykken, J.J., A.R. Moldenke, and D.H. Olson. 2007. Headwater riparian forest-floor invertebrate communities associated with alternative forest management practices. Ecol. Applications 17:1168-1183.

Poinar, G. Jr., J. Rykken, and J. LaBonte. 2004. *Parachordodes tegonotus* n. sp. (Gordioidea: Nematomorpha), a hairworm parasite of ground beetles (Carabidae: Coleoptera), with a summary of gordiid parasites of carabids. Systematic Parasitology 58: 139-148.

Schowalter, T.D., Y.L. Zhang, and J.J. Rykken. 2003. Litter invertebrate responses to variable density thinning in western Washington forests. Ecological Applications 13:1204-1211.

Rykken, J.J. and T. Hanson. 1999. A guide to common bark beetles (Coleoptera: Scolytidae) endemic to the northeastern United States. USDA Forest Service, Forest Health Technology Enterprise Team, FHTET-98-15. Morgantown, WV. 36pp.

Rykken, J.J., D.E. Capen, and S.P. Mahabir. 1997. Ground beetles as indicators of land type diversity in the Green Mountains of Vermont. Conservation Biology 11:522-530.

**Reviewer for:** Biodiversity and Conservation, Hydrobiologia, Journal of Applied Ecology, Journal of Forest Ecology and Management, National Science Foundation, Northwest Science, ZooKeys

**Technical Reports**

Rykken, J.J. and B.D. Farrell. 2013. Boston Harbor Islands all taxa biodiversity inventory: Discovering the “microwilderness” of an urban island park. Natural Resource Technical Report. NPS/BOHA/NRTR—2013/746. National Park Service. Fort Collins, Colorado. Published Report-2195282.

## Professional Presentations

Northeast Natural History Conference, Springfield, MA. (2013, 2014) Oral presentation.

Vermont Center for Ecostudies, Norwich, VT. (2014) Invited speaker.

Discover Life in America/ATBI Annual Conference, Gatlinburg, TN. (2005, 2008, 2009, 2012) Oral presentation.

Boston Harbor Islands Science Symposium, Boston, MA. (2008, 2011) Invited speaker.

Cambridge Entomological Club, Cambridge, MA. (2005, 2011) Invited speaker.

George Wright Society Biennial Conference, New Orleans, LA. (2011) Oral presentation.

Université du Québec à Montréal, Montreal, Canada. (2010) Invited departmental seminar speaker.

Harvard Life Sciences Program for High School Biology Teachers, Cambridge, MA. (2010) Invited speaker.

BellFest Symposium, University of Vermont, Burlington, VT. (2010) Oral presentation.

The Evergreen State College, Research Ambassador Program, Olympia, WA. (2010) Invited speaker.

George Wright Society Biennial Conference, Portland, OR. (2009) Oral presentation.

Nantucket Biodiversity Initiative Conference, Nantucket, MA. (2009) Oral presentation.

Olympic National Park, Port Angeles, WA. (2008) Invited speaker.

George Wright Society Biennial Conference, St. Paul, MN. (2007) Oral presentation.

Northeast Natural History Conference, New York State Museum, Albany, NY. (2006) Oral presentation.

University of New Hampshire, Zoology Department Seminar, Durham, NH. (2006) Invited speaker.

Nantucket Consortium of Naturalists, Nantucket, MA. (2006) Invited speaker.

Oregon Headwaters Research Cooperative symposium, Corvallis, OR. (2005) Invited speaker.

Tunghai University, Department of Life Sciences Seminar, Taichung, Taiwan. (2004) Invited speaker.

American Museum of Natural History Center for Biodiversity and Conservation: Expanding the Ark: the emerging science and practice of invertebrate conservation, New York, NY. (2004) Poster presentation.

Annual meeting of the Society for Conservation Biology, Duluth, MN. (2003) Poster presentation.

Headwaters Research Cooperative Symposium, Corvallis, OR. (2003) Oral presentation.

Headwaters Research Cooperative Workshop, Corvallis, OR. (2001) Poster presentation.

Annual meeting of the Oregon Chapters of The Wildlife Society and the American Fisheries Society, Portland, OR. (2001) Oral presentation.

Annual meeting of the New England Association of Environmental Biologists, Ascutney, VT. (1999) Oral presentation.

**Outreach and Education**

**Popular and educational publications**

Rykken, J., A. Rodman, S. Droege, and R. Grundel. 2014. Pollinators in Peril? A multipark approach to evaluating bee communities in habitats vulnerable to effects from climate change. Park Science 31:84-90.

Rykken, J. 2014. Insect pollinators of Denali: a survey of bees and flower flies. Park Science 31: 91-93.

Rykken, J. 2014. Monitoring bee diversity and abundance in Boston Harbor Islands National Recreation Area. Park Science 31:92-93.

Rykken, J.J, and M. Albert. 2012. Boston Harbors Islands All Taxa Biodiversity Inventory: integrating science, education, and management in an urban island park. Park Science 29:26-28.

Rykken, J.J. 2011. Discovering the microwilderness of the Boston Harbor Islands. Massachusetts

 Wildlife Magazine LXI(1):26-35.

Rykken, J.J. and R.L Davidson. 2008. Carabid beetle rediscovered in Massachusetts. Newsletter of the Vermont Entomological Society 61:7-8.

Hanson, T. and J.J. Rykken. 2000. Forest insect discovery program. Vermont Dept. of Parks and Recreation, Waterbury, VT. 60pp.

**Educational Products**

Rykken, J., and S. Stehn. 2014. Virtual tour of insect pollinators in Denali. Murie Science and Learning Center. (<http://www.nps.gov/features/dena/006/denali_pollinators.html>)

Rykken, J. and J. Holmes 2013. Bee observer cards. Encyclopedia of Life (<http://eol.org/info/498>)

**Educator trainings**

Harvard Museum of Natural History (2010, 2007) Insect training for museum volunteers.

Thompson Island Outward Bound instructor training (2009, 2007, 2006)

Massachusetts Marine Educators Boston Harbor Teacher Workshop (2008)

National Science Teachers Association Conference (2008)

Charting a Course to the Boston Harbor Islands Summer Institute for Teachers (2007, 2006)

Harvard Museum of Natural History (2006) Workshop for high school science teachers.

**Presentations, interactive displays**

Olympic National Park, WA. (2014) Invited speaker.

North Cascades National Park, WA. (2014) Invited speaker.

Denali National Park and Preserve, AK. (2014). Invited speaker.

Denali National Park and Preserve, AK. (2012) Invited speaker; field seminar.

The Trustees of Reservations, Crane Estate, Ipswich, MA. (2010) Invited speaker.

Yellowstone National Park Bioblitz, WY. (2009) Invited speaker.

Harvard Museum of Natural History, Cambridge, MA. (2011, 2009) Event booth.

Cambridge Science Festival, Cambridge, MA. (2010, 2008, 2007) Event booth.

Hull Garden Club, Hull, MA. (2009) Invited speaker.

Mystic River Mural Project, Medford, MA. (2008) Invited speaker for student artists.

Earth Night, Convention Center, Boston, MA. (2006) Event booth.