

Rachel K. Brooks

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170 Drillfield Drive
Blacksburg, Virginia 24061

Education:

VIRGINIA TECH

Plant Pathology, Physiology, and Weed Science Department
Pursing a Ph.D.

August 2016 - Present
Blacksburg, VA

UNIVERSITY OF VERMONT

B.S. in Environmental Sciences (Conservation Biology and Biodiversity)
GPA: 3.89, Magna Cum Laude

Sept 2008 – Dec 2011
Burlington, VT

Professional Experience:

CONTRACTOR

Virginia Tech University, Department of Entomology

October 2015 – July 2016
Tacoma, WA

Worked with Dr. Scott Salom and Molly Darr (graduate student) to collect field samples of hemlock woolly adelgids and their related beetle predators (specifically *Scymnus coniferarum*). Collected samples (beat sheeting and branch sampling) and conducted all other field related needs.

<http://www.ento.vt.edu/people/tenure/salom-scott/>

ENVIRONMENTAL HEALTH SPECIALIST I

Thurston County Public Health and Social Services

August 2014 – August 2016
Olympia, WA

Provided technical assistance to businesses that generate and handle hazardous wastes (such as medical facilities, laboratories, and distribution centers). Investigated solid and hazardous waste complaints and enforced the Thurston County Sanitary Code in regards to waste management and disposal. Wrote Site Hazard Assessments (under the EPA's Resource and Conservation Recovery Act). Wrote grant applications and both financial and deliverable reports, collected water and soil samples, supervised the public help hotline, assisted the County's Integrated Pest Management Program, and supported other departments and agencies when needed. www.co.thurston.wa.us/HEALTH

CARETAKER

Nisqually Reach Nature Center

May 2014 – April 2015
Olympia, WA

Maintained and supported a non-profit nature center and adjacent public boat launch. Responsible for four open system salt-water aquariums, staffing the nature center, assisting citizen science research, fundraising, and completing maintenance work as needed. www.nisquallyestuary.org

AMERICORPS SERVICE MEMBER

U.S. Fish & Wildlife Service

Sept 2013 – July 2014
WA Fish & Wildlife Office, Lacey, WA

Gained field, hatchery, and lab experience working throughout western Washington State. Work included: stream surveys, electrofishing, seining, DNA sampling, otolith extractions, hatchery spawning, coded wire tag processing, fish diet collection and analysis, sediment processing, habitat analysis using ArcGIS 10.1, fire severity monitoring, native plant propagation and plantings, amphibian surveys, invasive species removal, and working with endangered and threatened species. Designed and executed an independent project studying the off-target impacts of two herbicides on native prairie species. Developed and taught fisheries and prairie educational and outreach programming. <http://www.fws.gov/wafwo>

FORESTRY TECHNICIAN

B4Warmed Experiment, University of Minnesota

April 2013 – Aug 2013
Ely/Cloquet, MN

Assisted with research studying how forests respond to experimental warming and precipitation change. Maintained artificial forest warming plots, measured woody and herbaceous phenology, operated LICOR-6400 to measure leaf fluorescence, updated and created sampling protocols, harvested and planted new seedlings, took PAR measurements, collected earthworm samples, and managed and cleaned data.

<http://forestecology.cfans.umn.edu/Research/B4WARMED>

Professional Experience continued:

FIELD STEWARD TECHNICIAN

Piscataquog Land Conservancy

Nov 2012 – Feb 2013
New Boston, NH

Updated and created management plans and baseline documentation reports for 20 protected properties. Included: site visits, fauna and flora identification, terrain and hydrology descriptions, GPS and compass work, technical writing, map creation (ArcGIS 10.1), photo point photography, researching current baseline guidelines, designing new policies, and working with volunteers. www.plcnh.org

PLANT COMMUNITY FIELD TECHNICIAN

Cedar Creek Ecosystem Reserve, University of Minnesota

May 2012 – Oct 2012
East Bethel, MN

Responsible for experimental maintenance and collection of data both in the field (prairie) and in the lab to study how plant communities respond to environmental changes. Included grass and forb identification, soil and root coring, plant reproductive surveys, monitoring tree saplings, measuring soil moisture (TDR) and light (LAI 2000s), and weekly seminars. Conducted and presented an independent project focusing on plants' phenological responses to environmental changes by observation and remote sensing (light spectrometry, UniSpec) which will contribute to a future publication. www.biocon.umn.edu

NOTE TAKER

Academic Support Programs

Jan – May 2012
University of Vermont, Burlington, VT

Attended lab and lecture courses and created precise notes in both handwritten and typed formats for handicapped students. Classes were in statistics, medical studies, and animal sciences at all undergraduate levels. <http://www.uvm.edu/aspprogs>

ADVANCED UNDERGRADUATE RESEARCHER

Department of Biology, University of Vermont

Sept 2011 – May 2012
Burlington, VT

Independently researched the proteomic signatures of pitcher plant communities in a laboratory setting (SDS-PAGE, mass spectrometry, and statistical analysis). Contributed to a peer reviewed paper that is currently being written. Awarded the University of Vermont Undergraduate Research Grant for faculty-supported student-preformed research. www.uvm.edu/~biology

REU STUDENT

Harvard Forest, Harvard University

May – Aug 2011
Petersham, MA

Developed, conducted, and processed a field experiment looking at the impacts of environmental changes on a pitcher plant community's proteomics. Presented the initial results at the Harvard Forest Microbial Ecology Research Symposium (September 20, 2011). harvardforest.fas.harvard.edu/other-tags/reu

FIELD RESEARCH STUDENT

Round River Conservation Studies Namibia Field Program

Feb – May 2011
Namibia, Africa

Fieldwork based education in the Namib Desert, which included: forest inventories, endangered species monitoring, and education and outreach to locals for the Namibian government, NGOs, and local conservancies. Courses were conducted while camping throughout the region. www.roundriver.info

FIELD RESEARCHER

Piscataquog River Eastern Brook Trout Coalition

June – Aug 2010
Francestown, NH

Worked with Trout Unlimited, NH Department of Fish and Game, the Russell Foundation, and St. Anselm College to study eastern brook trout, wood turtles, and endangered mussels. Included DNA collection, electrofishing, base line water quality data collection, invertebrate sampling, mark and recapture studies, GPS, radiotelemetry, and data analysis.

Professional Experience continued:

BIOLOGICAL LABORATORY ASSISTANT

Department of Biology, University of Vermont

Sept 2009 – May 2010

Burlington, VT

Worked in the field and in a biology lab for a graduate student to research how climate change impacts natural selection in *Daphnia*. Included collecting field data, microscope work, and data input.

www.uvm.edu/~biology

Presentations:

HARVARD FOREST MICROBIAL ECOLOGY RESEARCH SYMPOSIUM

Brooks, R.K., Ellison, A.M., N.J. Ballif, B.A. Gotelli, N.J. Proteomic Signatures of Experimentally Manipulated Pitcher Plant Communities and their Corresponding State Changes. September 20, 2011. Harvard University, Petersham, MA.

STUDENT RESEARCH CONFERENCE

Brooks, R.K., Gotelli N.J., Ballif, B.A., Ellison, A.M. Monitoring Ecosystem Changes Using Proteomic Signatures. April 19, 2012. University of Vermont, Burlington, VT.

INTERN SYMPOSIUM

Brooks, R.K. Montgomery, R.A., Preliminary Results of Prairie Phenology in BioCON. August 14, 2012. Cedar Creek Ecosystem Reserve, East Bethel, MN.

Grants:

UNIVERSITY OF VERMONT UNDERGRADUATE RESEARCH GRANT

Spring 2011, \$500.00, Mentor: Dr. Nicholas J. Gotelli (Ecology and Evolution Lab)

Teaching Experience:

NISQUALLY REACH NATURE CENTER, 2014

Visitor center open hours (general public) and science summer camps (3rd - 6th)

U.S. FISH AND WILDLIFE SERVICE, 2013-14

Federal hatchery tours, classroom visits, field trips, event booths, summer camps, (over 3,000 K-12th graders and 2,000 general public)

PISCATAQUOG LAND CONSERVANCY, 2013

Winter twig identification snowshoe class (30 adults)

Certifications:

HAZWOPER (40 HOUR)

Instructed by Dave Kummerlome (CADRE, Inc.) in Olympia, WA on November 17-21, 2014. Re-certified yearly (last certification completed in January, 2016 by CADRE, Inc.)

ADULT CPR, ADULT AED, & FIRST AID

Instructed by Howard A Gearns (American Red Cross) in Lacey, WA on June 23, 2014, ID: GQJFKD, Valid for 2 years