

# Jay Frentress

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## Education:

- **Western Michigan University**. Received Bachelors of Science in June 2002 in Biological Sciences and German with minors in Environmental Studies and Chemistry. GPA: 3.62, cum laude. Lee Honors College.
- **University of Paderborn**, Germany, 1997-1998. Completed Oberstufe (highest) level writing test. Major interests of study were German Literature, History, Spanish and Economics.
- **Oregon State University – MS Candidate**. September 2006 – present. Pursuant to a degree in Water Resources Science (Hydrologic focus) and Botany Plant Pathology, I am studying human-related impacts on the environment. In particular, I am using a novel isotopic approach to address how physical watershed attributes influence the flux of dissolved organic material from forested, agricultural, and urban watersheds.

## Publications:

New Distributional Records for the Non-native Crayfish, *Procambarus clarkia*, in Maryland.” Authors: Jay V. Kilian, Jason Frentress, Ron J. Kluda, Andrew J. Becker, and Scott A. Stranko.

“Aquatic Conservation Targets: prioritization of streams in need of restoration and protection and the assessment of stream conditions in 2005 Watershed Restoration Action Strategy (WRAS) watersheds: Deer Creek, Prettyboy Reservoir, Port Tobacco River, Miles River and Assawoman Bay” February 2006. Authors: Jay Kilian, Scott Stranko, Jason Frentress. [http://www.dnr.state.md.us/streams/pubs/WRAS\\_FINAL.pdf](http://www.dnr.state.md.us/streams/pubs/WRAS_FINAL.pdf)

“Regional comparisons of watershed determinants of dissolved organic carbon in temperate lakes from the Upper Great Lakes region and selected regions globally”. *Limnology & Oceanography* 48(6), 2003, 2321-2334. Marguerite A. Xenopoulos, David M. Lodge, Jason Frentress, Timothy A. Kreps, Scott D. Bridgham, Elizabeth Grossman, and Caryn J. Jackson

## Presentations:

“Characterization of dissolved organic matter in subsurface flow and stream flow during a fall storm event in a small (10 ha) Pacific Northwest catchment.” (Poster) Authors: Jay Frentress, Carol Kendall, Kate Lajtha, and Julia Jones. Presented at the 2007 American Geophysical Union Conference.

“Using Stable Isotopes to Trace Sources of Nitrate in the Willamette Basin During Summer Baseflow.” (Poster) Authors: Jay Frentress, Kate Lajtha, Carol Kendall, Hank Johnson, Jeff McDonnell, Steve Griffiths, and Bob Grove. Presented February 2007 at Oregon State University Long Term Ecological Research Symposium.

“There goes the neighborhood: Urbanization effects on benthic macroinvertebrates.” Authors: Virginia Eaton, Jason Frentress, Amy Fowler, and Peter Markos. Presented at Mid-Atlantic Association of Aquatic Biologists (March 2006)

“Impacts of Waterfowl and Water Levels on Wetland Vegetation”. Poster presented at the 2002 Notre Dame Environmental Education and Research Symposium. Authors: Jason Frentress, Adrienne Froelich and David Lodge.

## Awards & Activities:

- Recipient of the 2008 Institute for Water and Watersheds research grant (\$7,272)
- Recipient of the 2008 OSU Alumni award for outstanding service to the hydrologic community (\$250)
- Recipient of the 2007 Anita S. Summers Graduate Student Travel Award (\$400)
- American Geophysical Union Student Member (2006 to present)
- OSU Hydrophiles president, an American Water Resources Association (AWRA) affiliate organization (2007/2008)
- OSU Coalition for Graduate Employees member (2007 to present)
- OSU Triathlon Club Secretary (June 2007 to June 2008)

## Research and Work Experience:

### Natural Resource Technician IV – Maryland Department of Natural Resources

January 2006 – June 2006

Provided technical support to the Maryland Biological Stream Survey.

- Created maps and visual aids for use in a watershed restoration action strategy for use by municipal authorities to implement restoration practices (ArcGIS 9.0 and Microsoft Access)
- Provided training to volunteers on current stream survey techniques using physical, biological and chemical methods.

- Conducted stream surveys for fish and macroinvertebrate communities as a part of the Maryland Biological Stream Survey

**Biologist – Washington State Department of Transportation** *September 2005 – December 2005*

Updated the state atlas of environmentally sensitive areas maintained by the Maintenance and Operations Division of the Washington State Department of Transportation.

- Surveyed hundreds of sensitive areas to assess quality and evaluate potential impacts from maintenance activities
- Updated dataset of environmentally sensitive areas using ArcGIS 9.0 and Trimble GPS
- Coordinated with regional offices and sub-regional maintenance facilities to effectively include maintenance personnel input in environmentally sensitive area atlas updates

**Field Research Technician - University of Notre Dame** *June 2005 – September 2005*

Assisted graduate students in installing and executing field research experiments examining the effects of invasive species in northern Wisconsin for the stream ecology lab of Dr. Gary Lamberti.

- Studied community ecology effects of invasive crayfish removal in two streams using electric enclosures
- SRP, NH<sub>4</sub><sup>+</sup> and Chl *a* analysis of streams and groundwater
- Examined effects of invasive earthworms on soil leachate and its consequent effects in aquatic systems

**Field Research Assistant – Luquillo LTER Canopy Trimming Experiment, Puerto Rico**

*January 2005 – April 2005*

Worked to set up a large-scale hurricane disturbance study in the rainforests of the Luquillo LTER in Puerto Rico

- As member of ten-person team, helped coordinate and facilitate our efforts at manually removing and reapplying 50,000 kg of forest leaf and wood material across the study grid
- Helped develop and install zip-lines (200-400 meters in length) to assist in moving forest material up, down, and across the steep, forested slopes
- Sampled soil, invertebrates, and plant growth during experiment installation

**Natural Resources Conservation and Development, Peace Corps - Chuuk State, Micronesia**

*August 2003 – January 2005*

Worked independently in rural lagoon islands and remote outer atoll islands on issues relating to Natural Resource Conservation and Development.

- Incorporated soil conservation education into agricultural projects of interest to community members
- Conducted community outreach programs to help prevent erosion, landslides and lagoon sedimentation
- Established and maintained ten community garden projects with two remote outer island communities
- Educated staff at the Department of Fisheries in areas of ecological data procurement, management, and analysis
- As Volunteer Leader assisted in the administration of Peace Corps Field Office to support Chuuk state volunteers

**Laboratory Technician - University of Notre Dame** *June 2001 - August 2003*

Worked as laboratory technician on multiple research projects in the invasive aquatic ecology lab of Dr. David Lodge.

- Delineated lake watersheds using Arcview 3.2
- Analyzed carbon and nitrogen stable isotopes on an Elemental Analyzer/Mass Spectrometer
- Conducted allometric analyses of crayfish to predict crayfish predation using stomach contents of fish
- Organized and executed field research trips to sites in Wisconsin, Michigan and North Carolina
- Sampled in multiple lakes using SCUBA for soil, plants, invertebrates and crayfish (PADI open-water certified)
- Procured basic limnological measurements (pH, DO, conductivity, Secchi depth, temperature etc.)
- Entered and managed data, including some statistical analysis (Excel, Access, Systat)
- Determined seed viability as part of a study examining effects of herbivory on wetland vegetation
- Responsible for general lab management and maintenance of safety equipment in a 13-person lab

**Field Technician - Michigan Technological University** *August 2000 – December 2000*

Worked independently as field technician on a fish ecology research project in Big Bay, MI in conjunction with the Michigan Department of Natural Resources and Dr. C.J. Huckins at Michigan Tech.

- Caught, identified and released various species of fish, (target species: coaster brook trout) in the Salmon-Trout River
- Recorded fish characteristics and maintained dataset for study
- Maintained trap-net system and surveyed river reach for likely coaster brook trout spawning sites
- Electroshocked for fish community studies

**Assistant Lab Technician - Michigan State University** *May 2000 – August 2000*

Worked as assistant technician in the plant ecology laboratory of Dr. K. Gross at Kellogg Biological Station/Michigan State University.

- Determined vegetative species composition of seven research sites in prairie/savannah habitat
- Processed vegetation samples from the Long Term Ecological Research site at Kellogg Biological Station
- As part of an undergraduate senior thesis, analyzed and reported on the relationship between seed bank species diversity and site productivity (annual above-ground biomass production)

**Languages:**

- German (conversationally fluent)
- Chuukese (working knowledge)
- Puluwatese (working knowledge)
- Spanish (beginner).