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## REBECCA L. MEREDITH

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rebeccamere@yahoo.com  
Krüner Strasse 15  
81373 Munich Germany  
Tel #: 017627973477

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### Objective

PhD Position Fall 2009

### Education

- Fall '07 – Present Ludwig-Maximilians University Munich, Germany
  - MS Candidate, Ecology, Evolution and Systematics (EES) program
- Spring '03-June '05 Western Washington University Bellingham, WA
  - BS in Biology, Emphasis in Ecology, Graduated cum laude (GPA 3.78)
- Summer '03 University of Washington Seattle, WA
- Fall '01- Fall '03 University of California, Davis Davis, CA

### Courses Taken

Ecology *Win '07*  
Evolution *Win '07*  
Systematics *Win '07*  
Ecological Modeling *Sum '08*  
Ecophysiology *Sum '08*  
Community Ecology *Sum '08* \*  
Micromicrobiology *Sum '08*

\* All courses were taken at Ludwig Maximilians University, except this one was taken at the University of Groningen, The Netherlands.

### Master's Thesis

I am working in the Community and Conservation Ecology Group (COCON) at the University of Groningen, The Netherlands on a project that is part of a greater European-wide project called ASSEMBLE (Jan Bakker's Lab). The main objective of the ASSEMBLE project is to understand the rules that govern the assembly of local plant communities based on functional traits and with a focus on making generalizations across particular systems. The goals of my portion of the project have two main parts: 1) To determine the relationship between plant trait attributes and environmental conditions and 2) To assess whether the northern European trait database (LEDA) appropriately estimates community trait composition on a local scale. The specifics of this project will be determined in the upcoming semester.

### Undergraduate Thesis

*The effect of initial functional group composition on the patterns of grassland community assembly*

Understanding how plant diversity affects ecosystem properties requires understanding how plant functional characteristics, related to resource uptake and partitioning, influence patterns of community assembly. Here, we focus on the following questions: 1) Did initial community composition influence final levels of species diversity? 2) Did initial community composition determine which species ultimately become dominant? And, 3) Did communities that started with similar initial compositions remain similar or diverge in terms of both species and functional group composition? Our results indicate that despite some historical effects on evenness and individual species' success, convergence of functional structure may indicate the importance of resource partitioning in these communities (Paper in progress).

## Publications

Meredith, R.L., Agerer R, Raidl S (2008b) "*Arbutirhiza littoralis*" + *Arbutus unedo* L. Descr Ectomyc 11: #-#. (In press)

## Presentations

Spring 2004                      Sigma XI                      Western Washington University  
*The effect of plant functional groups on community assembly*

Spring 2005                      Sigma XI                      Western Washington University  
*The effect of initial functional group composition on the patterns of grassland community assembly*

Summer 2005                      ESA                      Montréal, Canada  
*The effect of initial functional group composition on the patterns of grassland community assembly*

## Grants

Summer '08                      Travel/Study Grant                      EES, Ludwig- Maximilians University  
Money was used to travel to and from Groningen, The Netherlands for a community ecology course and also start work on my master's project.

## Research Experience

Aquatic Ecology                      S. Berger/S. Diehl                      Ludwig Maximilians Universität  
*May '08 – October '08*: As part of a lab rotation for my master's program I worked in the aquatic ecology lab of a global climate change freshwater mesocosm experiment. In my portion of the project I attempted to disentangle the food web dynamics by approximating algal growth rates, microzooplankton grazing rates and daphnia grazing rates using a dilution and dialysis technique. I was responsible for helping set-up and execute several of the dialysis samples, measuring chlorophyll *a*, and counting individual species using an inverted microscope technique.

Mycological Systematics                      Reinhard Agerer                      Ludwig Maximilians Universität  
*October '07 – March '08*: This was research experience in a laboratory rotation as part of my master program. I isolated mycorrhizal samples, made mantle preparations, cut samples on a microtome, dehydrated and imbedded mycorrhizal tips, and finally, completed the steps for anatomical and morphological description of a potentially new species of mycorrhizal fungus. The specimen we described, *Tomentella* + *Arbutus unedo* (and temporarily named *Arbutirhiza littoralis*), is thought to be a new Arbutoid mycorrhizal species of the genus *Tomentella*. The description is in the process of being published.

Sub-Alpine Ecology                      Matt Robson                      Laboratoire d'Ecologie Alpine of CNRS  
*June '05-November '05*: Work experience in the French Alps at the Laboratoire d'Ecologie Alpine of CNRS (Sandra Lavorel). I was involved in a research project in sub-alpine grasslands, focused on the effect of land-use change on the potential of plant communities to uptake nitrogen. This research made up one aspect of a Europe-wide project (VISTA) analyzing how land-use change is affecting grassland biodiversity. The main focus of my work experience was tracing the inoculations of N15 through the plants and soil, and analyzing the root systems from plant communities in each of the land-use treatment types. My duties included: making N15 injections into soil, taking soil and vegetation samples, separating roots from the soil, preparing samples for and completing chloroform fumigation extractions, assisting with nitrogen extraction, and also scanning and analyzing roots on a WinRhizo system.

Community Ecology            David U. Hooper            Western Washington University  
*March '03 – June '05:* Dr. Hooper's research takes place in the serpentine grassland outside of San Jose, CA and focuses on understanding the patterns of community assembly as determined initial functional group compositions. I began by working on Dr. Hooper's project, but by 2004 had started independent work in the form of a senior thesis. Field activities included point framing, plant collection and pressing, soil coring, biomass collection, GPS, and plant identification. In the lab I learned to analyze data using Microsoft Excel, Systat, and PCord.

Wetland Ecology            Melissa Brown            Lummi Natural Resources  
*Summer '03:* The purpose of this project was to analyze the habitat gradient in a coastal wetland as part of an effort to improve conservation methods. In the field I was responsible for helping set up transects and taking biomass samples. In the lab, I identified, sorted, dried, and determined dry weights of all of the species from samples collected in the field.

Agro-Ecology            Clyde Elmore            University of California, Davis  
*April '02 – June '02:* This was an invasive weed project that was geared towards the management of agricultural fields. We were testing the relative effectiveness of a suite of chemicals on weed seed germination. I was responsible for making seed bags and sorting and weighing seeds in preparation for the experiment. In addition, I performed fieldwork in Monterey County south of Santa Cruz where we established 100 plots, and sowed seed bags into the ground.

## Other Experience

Lab Technician            Ludwig Maximilians Universität            München, Germany  
*February '08 – August '08:* This was a lab technician job in the Evolutionary Genetics Laboratory where I mainly helped PhD students work on their projects on *Drosophila*. My duties included: general care of the flies (food making and changing), fly analyzing (looking for phenological markers of genomic inserts), PCR, making and running gels, extracting genomic DNA, completing sequence reactions, transforming bacteria and 'minipreps' of transformed bacteria.

Grocery Manager            Terra Organica            Bellingham, WA  
*December '05 – July '07:* While living in Bellingham I worked at a small organic grocery. As grocery manager my responsibilities ranged from ordering to stocking to dealing with employees and customers. In my buyer role I ordered product from all the small local producers as well as from the bigger national distributors. As a manager I was responsible for the schedules, efficiency, hiring, firing and evaluations of up to eight employees.

Lab Assistant            North Creek Analytical            Bothell, WA  
*Summer '02:* North Creek Analytical is an environmental analysis lab in and my duties included sonicating soil samples, performing hexane exchanges and Silica Gel extractions, and fractionating water samples.

YMCA            Bellingham, WA  
*Winter '05 – Fall '07:* To share my passion for rock climbing I belayed rock-climbers one night a week at the Bellingham YMCA.

