

## **J M Budke**

### **Esau Postdoctoral Fellow**

University of California, Plant Biology Department

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<http://jmbudke.github.io/>

### **FIELDS OF EXPERTISE**

Evolutionary Developmental Biology, Systematics, Taxonomy, Botany, Bryology, Maternal Effects, Structure-Function Relationships, Comparative Morphology, Science Communication.

### **POSTDOCTORAL EXPERIENCE**

2013 - Present: **Katherine Esau Postdoctoral Research Fellow, University of California - Davis**

Exploring calyptra function and the influence of auxin and HD-ZIP III transcription factors on sporophyte development using non-model moss taxa. Faculty Sponsor: Dr. Neelima R. Sinha

2011 - 2012: **Postdoctoral Researcher, University of Connecticut, Storrs, CT**

Analyzing calyptra cuticle anatomy across members of the Funariaceae.

NSF Grant, Dr. B. Goffinet: Rapid radiation and sporophyte evolution in the Funariaceae.

### **EDUCATION**

2011 **Ph.D. Ecology and Evolutionary Biology**, University of Connecticut, Storrs, CT

"Examining the gametophytic calyptra and its role in sporophyte development of the moss *Funaria hygrometrica* Hedw." Advisors: Dr. Bernard Goffinet & Dr. Cynthia S. Jones

2005 **M.S. Botany**, University of Connecticut, Storrs, CT

"Phylogenetic analysis of the Timmiaceae (Bryophyta: Musci) inferred from sequence data and a developmental study of the peristome-forming region of *Timmia megapolitana* (Timmiaceae)" Advisors: Dr. Bernard Goffinet & Dr. Cynthia S. Jones

2003 **B.S. Botany**, Miami University, Oxford, OH

### **PUBLICATIONS**

#### **Peer-Reviewed (16 papers)**

*In review* **Budke JM**, Goffinet B. Comparative cuticle development reveals taller sporophyte offspring are protected by thicker maternal calyptra cuticles in mosses. *Frontiers in Plant Science*

*In review* Ranjan A\*, **Budke JM\***, Rowland SD\*, Chitwood DH, Kumar R, Ichihashi Y, Zumstein K, Maloof JN, Sinha NR. eQTL in a precisely defined tomato introgression population reveal genetic regulation of gene expression patterns related to physiological and developmental pathways. *Plant Physiology* (\* equal co-first authors)

*In press* Busta L, **Budke JM**, Jetter R. Identification of  $\beta$ -hydroxy fatty acid esters and primary, secondary-alkanediol esters in cuticular waxes of the moss *Funaria hygrometrica*. *Phytochemistry*

2013 **Budke JM**, Goffinet B, Jones CS. Dehydration protection provided by a maternal cuticle improves offspring fitness in the moss *Funaria hygrometrica*. *Annals of Botany* 111: 781-789.

- 2013 Liu Y, Forrest LL, Bainard JD, **Budke JM**, Goffinet B. Organellar genome, nuclear ribosomal DNA repeat unit, and microsatellites isolated from a small-scale of 454 GS FLX sequencing on two mosses. *Molecular Phylogenetics and Evolution* 66: 1089-1094.
- 2012 **Budke JM**, Goffinet B, Jones CS. The cuticle on the gametophyte calyptra matures before the sporophyte cuticle in the moss *Funaria hygrometrica* (Funariaceae). *American Journal of Botany* 99: 14-22. **(Winner of the 2013 Grady L. Webster Publication Award)**
- 2012 Wynne MA\*, **Budke JM**. Examining the ability of calyptrae to produce protonema in *Funaria hygrometrica*. *Evansia* 29: 61-64. (\* undergraduate student collaborator)
- 2012 Liu Y, **Budke JM**, Goffinet B. Phylogenetic inference rejects sporophyte based classification of the Funariaceae (Bryophyta): rapid radiation suggests rampant homoplasy in sporophyte evolution. *Molecular Phylogenetics and Evolution* 62: 130-145.
- 2011 **Budke JM**, Goffinet B, Jones CS. A hundred-year-old question: is the moss calyptra covered by a cuticle? A case study of *Funaria hygrometrica*. *Annals of Botany* 107: 1259-1277.
- 2011 Goffinet B, **Budke JM**, Newman LC\*. Micromitriaceae: A new family of highly reduced mosses. *Taxon* 60: 1245-1254. (\* undergraduate student collaborator)
- 2011 Wickett NJ, Forrest LL, **Budke JM**, Shaw B, Goffinet B. Frequent pseudogenization and loss of the plastid-encoded, sulfate transport gene *cysA* throughout the evolution of liverworts. *American Journal of Botany* 98: 1263-1275.
- 2009 Larraín J, Herrera F, **Budke JM**, Goffinet B. Phylogenetic affinities and conservation status of the Chilean endemic *Costesia spongiosa* (Bryophyta: Gigaspermaceae). *The Bryologist* 112: 279-286.
- 2007 **Budke JM**, Jones CS, Goffinet B. Development of the enigmatic peristome of *Timmia megapolitana* (Timmiaceae; Bryophyta). *American Journal of Botany* 94: 460-467.
- 2006 **Budke JM**, Goffinet B. Phylogenetic analysis of Timmiaceae (Bryophyta: Musci) based on nuclear and chloroplast sequence data. *Systematic Botany* 31: 633-641.
- 2005 **Budke JM**, Hickey RJ, Heafner KD. Analysis of morphological and anatomical characteristics of *Isoetes* using *Isoetes tennesseensis*. *Brittonia* 57: 167-182.
- 2003 Luebke NT, **Budke JM**. *Isoëtes tennesseensis* (Isoëtaceae), an Octoploid Quillwort from Tennessee. *American Fern Journal* 93: 184-190.

#### Point of View (2)

- 2015 **Budke JM**. Postdocs: Improving our Visibility in the Research Workforce. *Plant Science Bulletin* 61(2): 40-44.
- 2014 Cain B\*, **Budke JM\***, Wood KJ, Sweeney NT, Schwessinger B. How postdocs benefit from building a union. *eLife* 3: e05614. (\* equal co-first authors)

#### Book Review (1)

- 2013 **Budke JM**. Common Mosses of the Northeast and Appalachians *Plant Science Bulletin* 59(3): 131-132.

#### Manuscripts in Preparation (2)

- In prep* **Budke JM**. Review: The maternal calyptra and its role in offspring protection in mosses. *International Journal of Plant Sciences*
- In prep* Busta L, **Budke JM**, Jetter R. Cuticular waxes from the gametophyte, sporophyte, and calyptra of the moss *Funaria hygrometrica*. *Annals of Botany*

**RESEARCH GRANTS & FELLOWSHIPS** (TOTAL \$174,974)

- 2015 Startup Allocation of 130,000 SUs of computing time & 1,500 GB of storage for “Identification and elucidation of gene regulatory networks influencing sporophyte development in the non-model moss *Physcomitrium pyriforme*.” from the Extreme Science & Engineering Discovery Environment (XSEDE) supported by the National Science Foundation.
- 2013 Katherine Esau Postdoctoral Research Fellowship, Univ. of Calif. – Davis (\$151,181)
- 2011 Graduate Summer Research Fellowship, Univ. of Conn. Graduate School (\$2,274)
- 2010 Doctoral Dissertation Fellowship Award, Univ. of Conn. Graduate School (\$2,000)
- 2009 International Association of Bryologists: Stanley Greene Award (\$1,100)  
Botanical Society of America: Graduate Student Research Award (\$500)  
American Microscopical Society: Graduate Student Research Award (\$700)  
Henry N. Andrews Endowment Fund: University of Connecticut EEB (\$1,000)
- 2008 East Asia Pacific Summer Institute Fellowship - EAPSI, NSF (\$10,000)  
NIBB, Okazaki, Japan - *Hosts*: Dr. M. Hasebe and Dr. Y. Hiwatashi
- 2007 Ronald Bamford Endowment Fund: University of Connecticut EEB (\$800)
- 2006 Ronald Bamford Endowment Fund: University of Connecticut EEB (\$1,100)
- 2004 Ronald Bamford Endowment Fund: University of Connecticut EEB (\$1,275)
- 2002 Academic Challenge Fund: Miami University Botany (\$1,030)  
W. S. Turrell Travel Grant: MU Herbarium, #181 *co-author C. Craig* (\$1,319)
- 2001 W. S. Turrell Travel Grant: MU Herbarium, #179 *co-author K. Gustafson* (\$695)

**AWARDS** (TOTAL \$2,800)

- 2014 Postdoctoral Scholar Association Travel Award to International Association of Bryology World Conference in Cape Horn Biosphere Reserve, Chile (\$400)
- 2013 Grady L. Webster Structural Botany Publication Award - “For the most outstanding paper published in the *American Journal of Botany* in the field of structural and developmental botany over the two-year period prior to the award year.” (\$1,000)
- 2011 Vernon I. Cheadle Student Travel Award, Botanical Society of America (\$500)
- 2010 Katherine Esau Award for the Best Student Paper in Developmental & Structural Botany, Botanical Society of America: *Beneath the calyptra’s veil: Exploring cuticle anatomy during moss sporophyte development* (\$500)
- 2010 Developmental & Structural Section Student Travel Award, BSA (\$150)
- 2007 Conant Botanical Images Student Travel Award: Second Place (\$250)
- 2005 Graduate Research Fellowship, National Science Foundation: Honorable Mention
- 2003 Young Botanist Award, Botanical Society of America: Special Achievement  
Outstanding Woman Senior in Science, Engineering, and Technology, Miami Valley Association for Women in Science (AWIS)

## **COLLABORATIVE PROJECTS**

- K. Khuu\* (University of California - Davis) – Using herbarium specimens for molecular phylogenetic analyses to examine morphological evolution in the Fissidentaceae.  
(\*undergraduate student collaborator)
- J. D. Bainard (University of Saskatchewan) – Phylogenetic analysis of moss genome evolution.
- R. Jetter & L. Busta (University of British Columbia) – Analyzing cuticle wax chemistry in mosses.

## **SOFTWARE & COMPUTATIONAL SKILLS**

R (statistical computing & graphics) – MrBayes – Mesquite – Geneious – DNA Subway

## **RESEARCH EXPERIENCE**

- 2015: Curatorial Assistant, University of California – Davis, JM Tucker & B Crampton Herbaria  
- **Identifying the bryophyte collections of ecologist Jack Major from AK, CA, CO, OR, & UT.**  
- **Identifying moss collections of KM Stevenson from the Center for Ecological Health Research's plant diversity surveys of the Lake Tahoe Basin, CA.**
- 2015, Spring: mRNAseq workshop for non-model organisms, University of California – Davis  
**Denovo transcriptome assembly on the Amazon Cloud.**
- 2014, Summer: DNA Subway Workshop at the Botany 2014 annual meeting, Boise, ID  
**Genomics, DNA barcoding, and RNA-seq. Bringing cutting-edge biology into the classroom.**
- 2009 – 2011: Research Assistant, University of Connecticut  
**Culturing Funariaceae for DNA extraction and morphological character scoring.**  
NSF Grant, B. Goffinet and C. S. Jones: Reduction and reversal in the Funariaceae
- 2008, Summer: Laboratory Workshop on *Physcomitrella patens*, NIBB, Okazaki, Japan  
**Developmental processes, gene targeting, bioimaging, and bioinformatics.**
- 2008, Spring: *Physcomitrella* Genome Workshop, University of Freiburg, Germany  
**Sequence analysis using the *Physcomitrella* genome browser and BLAST tools.**
- 2007, Spring: Research Assistant, University of Connecticut  
**Surveying for the presence/absence of *cysA* and *cysT* across liverworts.**  
NSF Grant (ATOL), B. Goffinet: Assembling the Liverwort Tree of Life
- 2004, Summer: Research Assistant, University of Connecticut  
**Establishing a protocol to grow dung moss (Splachnaceae) from spore isolates.**  
NSF Grant, B. Goffinet: Phylogenetic and geographic patterns in moss diversity
- 2002 - 2003: Dean's Scholar in the College of Arts and Science, Miami University  
**Screening ISSR markers to examine population genetics in *Isoetes canadensis*.**  
Advisors: Dr. Linda E. Watson and Dr. R. James Hickey
- 2002, Summer: Howard Hughes Internship, Miami University  
**Using PCR to isolate a single copy gene (*cycloidea*) across the Asteraceae.**  
Advisor: Dr. Linda E. Watson
- 2001, Summer: Undergraduate Summer Scholar, Miami University  
**Quantification and assessment of variation in anatomical leaf characteristics in *Isoetes tennesseensis*.** Advisor: Dr. R. James Hickey
- 1998, Summer: Howard Hughes Internship, University of Cincinnati, Cincinnati Zoo and Botanical Gardens, Center for Conservation and Research of Endangered Wildlife (CREW)  
**Tissue culture and cryopreservation of tropical herbs for the frozen garden.**  
Advisors: Dr. Valerie C. Pence and Bernadette L. Plair

## INVITED PRESENTATIONS

- 2015 **Lester Newman Seminar Series – Department of Biology, Portland State University**  
**Budke JM**, Maternal effects: Offspring protection from dehydration improves fitness in mosses.
- 2013 **Postdoctoral Research Seminar Series - University of California, Davis**  
**Budke JM**, Maternal effects in mosses: A maternal cuticle prevents dehydration and improves offspring fitness.
- 2008 **Connecticut Outdoor Environmental Education Association Annual Conference**  
**Budke JM**, Miniature Mosses Workshop: Teaching environmental educators how to integrate moss biology into their outdoor education programs.

## CONFERENCE PRESENTATIONS

- 2015 **Budke JM**. Comparative cuticle development in morphologically divergent mosses of the Funariaceae. Botanical Society of America (BSA) Annual Meeting  
**Budke JM**, Busta L, Jones CS, Goffinet B. Beneath the veil of the calyptra: exploring cuticle anatomy during moss sporophyte development in the Funariaceae. International Association of Bryologists Conference
- 2012 **Budke JM**, Jones CS, Goffinet B. Sporophyte development and calyptra cuticle function in *Funaria hygrometrica*. MOSS 2012
- 2011 **Budke JM**, Goffinet B, Jones CS. Experimental manipulation of the moss calyptra: The effect of cuticle removal and desiccation on sporophyte development in *Funaria hygrometrica*. BSA Annual Meeting  
Liu Y, **Budke JM**, Goffinet B. Phylogenetic inference rejects sporophyte-based classification of the Funariaceae (Bryophyta): a rapid radiation suggests rampant homoplasy in sporophyte evolution. BSA Annual Meeting
- 2010 **Budke JM**. Examining the gametophytic calyptra and its role in moss sporophyte development using the cord moss (*Funaria hygrometrica*). Society for Integrative and Comparative Biology Annual Meeting  
**Budke JM**, Goffinet B, Jones CS. Beneath the calyptra's veil: Exploring cuticle anatomy during moss sporophyte development. BSA Annual Meeting
- 2007 **Budke JM**, Wickett NJ, Goffinet B. Multiple losses of the *cysA* gene from the chloroplast genome of liverworts (Marchantiophyta). BSA Annual Meeting
- 2006 **Budke JM**, Goffinet B. Phylogenetic analyses of Timmiaceae (Bryophyta: Musci) inferred from nuclear and chloroplast sequence data. BSA Annual Meeting
- 2005 **Budke JM**, Jones CS, Goffinet B. Peristome development in *Timmia megapolitana* in relation to systematics and evolution of the Bryophyta. BSA Annual Meeting
- 2004 **Budke JM**. Peristome development in *Timmia megapolitana*. Northeast Ecology and Evolution Conference
- 2003 **Budke JM**, Hickey RJ, Heafner KD. Morphological characterization of North America's first octoploid *Isoetes*. BSA Annual Meeting
- 2002 **Budke JM**, Hickey RJ, Heafner KD. Morphological characterization of North America's first octoploid quillwort. Association of Southeastern Biologists Annual Meeting

## TRAINING IN EDUCATION

### College Teaching Seminar

Winter 2014

*University of California - Davis, Center for Excellence in Teaching and Learning*

## TEACHING EXPERIENCE

### Adjunct Lecturer: *University of California - Davis*

Everybody Eats: Threats to Your Favorite Foods

Fall 2014 & Spring 2015

Designed and taught an original course as instructor of record for ACCESS-R.

A UC Davis program to improve retention of first-generation to college and students from underrepresented groups in the sciences. Team-taught with Dr. H. Atamian, Spring 2015.

Awarded a \$500 mini-grant for supplies, both quarters.

### Guest Lectures

*University of California - Davis*

Graduate Course in Plant Development – Topic: Moss Developmental Genetics Winter 2015

Graduate Seminar – Topic: Preparing for the NSF GRFP Fall 2014 & 2015

iAMSTEM summer orientation program – Topic: Science Communication Summer 2014

*Western Connecticut State University, Biological and Environmental Sciences*

Genetics – Topic: Transformation of Non-Model Species Spring 2014

*University of Connecticut, Cooperative Extension Center, Master Gardener Program*

Biology and Identification of Mosses and Liverworts Oct 2012

*University of Connecticut, Ecology and Evolutionary Biology*

The Summer Flora – Topic: Bryophytes Summer 2011

Plant Anatomy – Topic: Shoot apical meristems Fall 2010

Bryology and Lichenology – Topic: Morphogenesis Spring 2006

### Teaching Assistant: *University of Connecticut, Ecology and Evolutionary Biology*

#### **Advanced Courses**

Phylogenetics Spring 2009

Plant Anatomy Fall 2008

Evolution of Green Plants Spring 2008

Developmental Plant Morphology Fall 2007

Bryology and Lichenology Spring 2006

#### **Introductory Courses**

Biology II (for majors) Fall 2003 – Fall 2006 (5 semesters)

Introduction to Botany Fall 2004

## TEACHING MATERIALS

### ***Peer reviewed brochure to teach plant biology concepts to students using mosses.***

Swanson J, Budke JM, and Goffinet B. 2012. A visit to the miniature forest: insights into the biology and evolution of bryophytes in Northeastern Connecticut. Available through the *PlantED Digital Library*.

### ***Peer reviewed laboratory exercises to teach the concept of chemical competition in plants.***

Swanson J, Budke JM, and Goffinet B. 2012. Chemical competition in plants using the moss *Sphagnum*. *PlantED Digital Library*. <http://planted.botany.org/> Featured in the *Plant Science Bulletin* 60(4): 198, 2014.

### ***Moss Culturing Protocol for high school teacher workshop at MOSS 2012 conference.***

Mosses and the Plant Life Cycle by LE Parker\*, JM Budke, and B Goffinet. (\* undergraduate collaborator)

### ***Biology Textbook Image - Invited***

Scanning electron micrograph of moss peristome teeth by JM Budke, in *Introduction to Plant Biology*, 4<sup>th</sup> and 5<sup>th</sup> editions by JD Mauseth, non-vascular plants chapter.

## UNDERGRADUATE STUDENT MENTORING

### **University of California, Davis**

Kristina Khuu - Major: Plant Biology June 2015 – Present  
Using herbarium specimens for molecular phylogenetic analyses of the Fissidentaceae.

Eunice Magat - Major: Genetics Apr 2014 – Present  
Creating DNA constructs for studying polar auxin transport in non-model mosses.

Sinja Taavitsainen - Major: Microbiology Apr 2014 – Present  
Analyzing reproductive resource allocation in *Timmia megapolitana*.

Stefanie Komar - Major: Biological Sciences, emphasis in Plant Biology Feb 2013 – Jul 2014  
Creating DNA constructs for genetic transformation of non-model mosses.  
Stanley and Jacqueline Schilling Award, College of Biological Sciences (\$2000)  
*Subsequently:* Research Technician, Arcadia Biosciences

PLANTS program - Botanical Society of America (Preparing Leaders and Nurturing Tomorrow's Scientists: Enhancing Diversity in Plant Science), Junior Mentor – 2012

### **University of Connecticut**

Lindsey Parker - Major: Biology Jan – Dec 2012  
Culturing Funariaceae mosses and stimulating laboratory-grown hybrid sporophytes  
*Subsequently:* Doctor of Pharmacy Professional Program, University of Connecticut

Xing Chen - Major: Pre-Pharmacy Jan – Dec 2012  
Optimizing lab protocols for analyzing moss genomes using flow cytometry.  
*Subsequently:* Doctor of Pharmacy Professional Program, University of Connecticut

Deborah Lee - Major: Physiology and Neurobiology Jan – Dec 2012  
Examining anatomical differences between polyploid races in the Funariaceae.

Pavitri Dwivedi - Major: Molecular Cellular Biology May 2010 – May 2012  
Culturing Funariaceae mosses and meiotic chromosome staining.  
*Subsequently:* Master's Student in Epidemiology, Boston University

Melissa Wynne - Major: Allied Health Sciences Aug 2008 – Dec 2011  
Examining calyptra senescence in *Funaria hygrometrica*.  
Office of Undergraduate Research Grant (\$500)  
2010 Frontiers in Undergraduate Research: Poster presentation  
*Subsequently:* Cytogenetics Technologist, Sloan Kettering Cancer Center

Leah Newman - Major: Biological Sciences Aug 2008 – May 2010  
Studying *Micromitrium* using DNA sequence data.  
Summer Undergraduate Research Fellowship (\$3500)  
2009 Frontiers in Undergraduate Research: Poster presentation  
*Subsequently:* Master's Student in Applied Genomics, University of Connecticut

Lauren Hensley - Major: Biological Sciences Jan – May 2008  
Culturing Funariaceae mosses using sterile techniques.

## **FIELD BOTANY EXPERIENCE**

### ***Botanical Outreach***

*Outdoor Presentations on Mosses (12 total) and Ferns (1)* Summers 2005 – 2012  
Leading botanical explorations at local nature centers and state parks in Connecticut.

*Connecticut Bioblitz* Summers 2005, 2007, 2009  
24-hour biological survey of a park with scientists, students, and the public.

*All Taxa Biodiversity Inventory (ATBI)* Summers 2001 – 2003  
Great Smoky Mountains National Park: Fern Foray Participant  
Coordinator: Dr. Patricia B. Cox

### ***Plant Collection Trips***

Multiple locations in eastern Kansas and central Missouri, USA Mar 12-16, 2012  
Collecting developing sporophytes of ephemeral mosses with B Allen & J Atwood.

Limestone Rise Nature Preserve, Knox, New York, USA 2004 – 2005  
Visited every two weeks to collect phenology data for the moss *Timmia megapolitana*.

Vermont, New York, USA & Quebec, Canada Oct 19-28, 2003  
Collecting *Timmia megapolitana* for systematic analyses of the Timmiaceae.

PowWow Pond, East Kingston, New Hampshire, USA May 3-8 & Jun 27-29, 2002  
Collecting *Isoetes canadensis* for population genetic analysis with M Barker & C Craig.

Hiwassee River, Polk Co., Tennessee, USA Three weekends in Jun & Jul 2001  
Collecting new species of aquatic quillwort *Isoetes tennesseensis* Luebke & **Budke**  
with P Cox, J Shaw, E Lickey, K Gustafson, K Heafner.

### ***Bryology Forays***

SoBeFree: Spring Outing; Botanical Excursion; Foray, Retreat, & Escape to the Environment  
San Bernardino Mountains, California Mar 27-30, 2015  
Santa Cruz County, California Mar 28-31, 2014

A. Leroy Andrews Foray, Woodstock Valley, Connecticut Sept 18-20, 2009

Blomquist Foray, Haywood County, North Carolina Oct 4-6, 2002

### ***Field Course Participation***

*Ecotourism with a Hand Lens in the Cape Horn Biosphere Reserve* Jan 10, 2015  
Exploring ways of defining, studying, communicating, and conserving both botanical and biocultural diversity in the Omora Ethnobotanical Park.  
Coordinators: Dr. Ricardo Rozzi and Dr. Francisca Massardo

*Tropical Ferns and Lycophytes, Organization for Tropical Studies* Jan 10-23, 2008  
Intensive, field introduction designed to build the diverse skills needed for floristic, taxonomic, phylogenetic, and ecological research on tropical ferns and lycophytes.  
Coordinators: Dr. Robbin C. Moran and Dr. James E. (Eddie) Watkins

*Tropical Flora of the Bahamas, Miami University* May 11-23, 2002  
Exploring local plants from ecological & evolutionary perspectives.  
Instructors: Dr. Michael A. Vincent and Dr. R. James Hickey



## PUBLIC AND COMMUNITY OUTREACH

### ***Moss Plants and More: Commentary on All Things Bryological***

Oct 2007 – Present

Monthly updated online bryology blog. Communicating science to the public.

<http://mossplants.fieldofscience.com>

Featured in Plant Cuttings: News in Botany. *Annals of Botany* 10: iv-vi, 2012.

Statistics as of 17 Oct 2015: **Average visits per day = 63**

On Twitter @MossPlants = 578 followers

### ***Kindergarten class at American Lakes School, Sacramento, California***

Apr 10, 2014

In collaboration with S. Komar, we designed and led students through two hands-on classroom activities exploring the relationships between plant structures & functions.

### ***Discovery Museum Science & Space Center – Volunteer with AWIS***

Feb 22, 2014

Helping families navigate activities about dinosaurs, fossils, rocks, and crystals.

## PROFESSIONAL SERVICE

***Manuscript Reviewer:*** *American Fern Journal, American Journal of Botany, Annals of Botany, Cryptogamie-Bryologie, Journal of Biogeography, Plant Biology, Plant Physiology, Protoplasma, The Bryologist.*

***Review Editor:*** *Frontiers in Plant Science - Plant Evolution and Development*

### ***Panel Discussion Participant:***

Postdoctoral Fellowship Writing: Learning from Colleagues

Feb 25, 2014

*Sponsored by the postdoc union (UAW 5810) at the University of California - Davis*

### ***Academic Service:***

2015 - Present Postdoctoral Union - UAW 5810: Sergeant-At-Arms, Executive Board Member

2013 - Present American Bryological and Lichenological Society: Member-at-Large

2015 Judging Committee - Grady L. Webster Award, Botanical Society of America

2013 - 2015 Judging Committee - Esau Award (Chair in 2015), BSA Conference

2013 - 2015 Postdoctoral Union - UAW 5810: UC Davis Campus Unit Chair

2014 Botanical Society of America, Strategic Planning Committee: Participant

2013 Judge - Triarch Botanical Images student travel award, BSA Conference

2010 Local Representative for the American Fern Society, BSA Conference

2004 - 2011 EEB Graduate Student Association at the University of Connecticut

2009 - 2011, Co-organizer of the Graduate Student Spring Symposium

2006 - 2007, President; 2004 - 2006, Treasurer

2004 Northeast Ecology & Evolution Conference - Housing & Recruitment

2003 Botany Dept. Chair Search Committee at Miami Univ. Undergrad. Representative

***Member:*** Botanical Society of America, Association for Women in Science, Microscopy Society of America, American Society of Plant Taxonomists, International Association for Plant Taxonomy, American Bryological and Lichenological Society, International Association of Bryologists.