Jean H. Burns, *Curriculum vitae*

Address:
Jean H. Burns, PhD
Assistant Professor
Case Western Reserve University
Department of Biology
10900 Euclid Avenue
Cleveland, Ohio 44106

Current position: Assistant Professor, Case Western Reserve University

Research program: I use phylogenetic comparative studies, field experiments, and demographic models, including studies of invasive plants, to answer questions about factors influencing invasions and community assembly.

Professional webpage:

Education and degrees:

2006 Florida State University. Ph.D. in Ecology and Evolution, (See married name: Jean Burns Moriuchi) Dec 2006. (Graduate Advisor: Thomas E. Miller)

1999 (Albertson) College of Idaho. Bachelor's of Biological Science and Mathematics (BS). *Summa Cum Laude*. 1999. (Undergraduate Advisors: Don Mansfield, Lynda Danielson)

Fellowships:

2008 Center for Population Biology Postdoctoral Research Fellow, University of California, Davis, **$82,000**.

2007 Tyson Research Center Postdoctoral Fellow, Washington University in St. Louis. **$72,000**.

2003 Florida State University Fellowships, **$48,000**.

Selected professional experience:

2010 **Instructor.** Bodega Applied Phylogenetics Workshop. *Community Phylogenetics*. http://bodegaphylo.wikispot.org/Community_Phylogenetics (2009, 2010)

2009 **Instructor.** University of California, Davis. *Modeling Invasion Speed using Demography and Dispersal.*

2007-08 **Instructor.** Washington University in St. Louis. *Practical Skills in Environmental Biology Research* course. Course included field trips.

- **Instructor.** Washington University in St. Louis. *Biological Conservation* lecture course.
- **Instructor.** Washington University in St. Louis. *Experimental Ecology Laboratory*.

1999-2006 (intermittently) **Teaching Assistant**. Laboratories: Biology for Non-majors, Experimental Biology: Plant Hormones and Foraging Ecology, Field Botany, Plant Biology Laboratory; Lectures: Plant Biology, Ecology, Evolution, Conservation Biology.

2004 **Curator** at the Godfrey Herbarium at Florida State University. Implement integrated pest

management strategy, including periodic sample freezing. Manage loan requests. Assist visiting scholars and researchers.

Grants, honors, and awards:

2008 Center for Population Biology Postdoctoral Research Fellow, University of California, Davis, Research Award, **$12,000**.

- American Association of University Women, Postdoctoral Research Grant, **$32,500**.

2007 Plant population syndrome workshop, Australian Research Council and Landcare Research. **$6,000**.

2006 Tyson Research Center Research award, **$5,000**.

- Graduate Student Publication Award in the Department of Biological Science, Florida State University (FSU). **$300.**
- Graduate Research and Creativity Award, FSU (inaugural). Laptop: **~$800.**

2003-04 Margaret Menzel Award in the Department of Biological Science, **$1,000.**

2003 Dissertation Research Grant, FSU, **$500.**

- U.S. National Science Foundation, competitive student travel grant for "Conference on Invasive Plants in Natural and Managed Systems." **$500.**
- Florida Exotic Pest Plant Council Research Grant Award, **$2,500**.

2002 Robert K. Godfrey Endowment Award for the Study of Botany, FSU, **$1,000.**

Publications (17, 9 first author):

2010 Yvonne M. Buckley, Satu Ramula**,** Simon P. Blomberg, **Jean H. Burns**, Elizabeth E. Crone, Johan Ehrlén, Tiffany M. Knight, Jean-Baptiste Pichancourt, Helen Quested, and Glenda M. Wardle. 2010. Causes and consequences of variation in plant population growth rate: a synthesis of matrix population models in a phylogenetic context. *Ecology Letters*. 13: 1182–1197.

Jean H. Burns, Robert B. Faden, and Scott J. Steppan. *in press*. Phylogenetic studies in the Commelinaceae subfamily Commelinoideae inferred from Nuclear Ribosomal and Chloroplast DNA Sequences. *Systematic Botany*.

Jean H. Burns, Simon P. Blomberg, Elizabeth E. Crone, Johan Ehrlén, Tiffany M. Knight, Jean-Baptiste Pichancourt, Satu Ramula, Glenda M. Wardle and Yvonne M. Buckley. 2010. Empirical tests of life-history evolution theory using phylogenetic analysis of plant demography. *Journal of Ecology*. 1-11.

2009 Harmon-Threatt, Alexandra N.**, Jean H. Burns**, Lyudmila A. Shemyakina, and Tiffany M. Knight. 2009. Breeding system and pollination ecology of introduced plants compared to their native relatives. *American Journal of Botany*. 96: 1544–1550.

Miller, Thomas E., **Jean H. Burns**, and Casey P. terHorst. 2009. The ghost of competition present. *The American Naturalist*. 173: 347–353.

2008 Ramula, Satu, Tiffany M. Knight, **Jean H. Burns**, and Yvonne M. Buckley. 2008.

General guidelines for invasive plant management based on comparative demography of invasive and native plant populations. *Journal of Applied Ecology*. 45: 1124–1133

Burns, Jean H., Pablo Munguia, Benjamin E. Nomann, Sarah J. Braun, Casey P. terHorst and Thomas E. Miller. 2008. The evolution of vegetative morphology in the Commelinaceae. *Botanical Journal of the Linnean Society*.158: 257–268.

Burns, Jean H. 2008. Demographic performance predicts invasiveness of species in the Commelinaceae under high nutrient conditions. *Ecological Applications*. 18: 335–346.

2007 Miller, T. E., **Jean H. Burns,** Pablo Munguia, Eric L. Walters, Jamie M. Kneitel, Paul Richards, Nicholas Mouquet, and Hannah Buckley. 2007. Evaluating support for the resource-ratio hypothesis: a reply to Wilson et al. *The American Naturalist*. 169: 707–708.

Burns, Jean H., Stacey L. Halpern, and Alice A. Winn. 2007. Do low quality environments limit the advantages of opportunism in invasive species? *Biological Invasions*. 9: 213–225.

2006 **Burns, Jean H.** 2006. Relatedness and environment affect traits associated with invasive and noninvasive introduced Commelinaceae. *Ecological Applications*. 16: 1367–1376.

Burns, Jean H. and Alice A. Winn. 2006. Are invasive species more plastic? A comparison of plastic responses to competition by invasive and noninvasive congeners in the Commelinaceae. *Biological Invasions*. 8:797–807.

2005 Miller, Thomas E., **Jean H. Burns,** Pablo Munguia, Eric L. Walters, Jamie M. Kneitel, Paul Richards, Nicholas Mouquet, and Hannah Buckley. 2005. A Critical Review of Twenty Years' Use of the Resource-ratio Theory. *The American Naturalist*. 165: 439–448.

2004 Buckley, Hannah, **Jean H. Burns,** Jamie M. Kneitel, Eric L. Walters, Pablo Munguia, and Thomas E. Miller. 2004. Small-scale patterns in community structure of *Sarracenia pururea* inquilines. *Community Ecology*. 5: 181–188.

Burns, Jean H. and Thomas E. Miller. 2004. Invasion of Chinese Tallow (*Sapium sebiferum*) in the Lake Jackson area, northern Florida. *American Midland Naturalist*. 152: 410–417.

Burns, Jean H. 2004. A comparison of invasive and non-invasive dayflowers (Commelinaceae) across experimental nutrient and water gradients. *Diversity and*

Distributions. 10: 387–397.

2002 Miller, Thomas E., Jamie M. Kneitel, and **Jean H. Burns.** 2002. Effect of community structure on invasion success and rate. *Ecology*. 83: 898–905.

Mentoring experience:

2008 Mentored 3 undergraduate summer research projects at Tyson Research Center.
Funding: Howard Hughes Medical Institute (HHMI). Summer Undergraduate Research Fellowship Program for Washington University in St. Louis students, in association with Tyson Research Center, $3750/each.
Student: Edward Erker (class of 2009). *Project*: Does spatial scale influence the relationship between phylogenetic novelty and invasiveness?
Student: Katherine Seidler (class of 2009). *Project*: The role of demography and dispersal in determining the relative invasion success of two congeneric dandelion (*Taraxacum*) species.
Student: Shulun Zang (class of 2009). *Project*: Does phylogenetic novelty result in costs to pollination success in introduced plant species?

2007 Mentored 2 undergraduate summer research projects at Tyson Research Center. *Funding*: HHMI, $3750.
Student: Anna Truszczynski (class of 2008). *Project*: Mechanisms driving the greater invasiveness of phylogenetically novel species: competitive ability and herbivory release.
This project became an undergraduate honor's thesis. Anna Graduated in 2008 and is now a graduate student in population biology at the University of California, Davis.
Student: Lyudamila Shemyakina (class of 2009). *Project*: The role of pollinators in determining the success of exotic plants.
The project resulted in a publication in the American Journal of Botany (Harmon-Threatt et al. 2009).

2004 Mentor, Young Scholar's Program at Florida State University, to introduce high school students to biological research.
Student: Alon Brodie. *Project:* Effects of environment on invasive and noninvasive dayflowers.
Student: Eliza Gonsalves. *Project:* Can invasiveness be determined by resistance to herbivory?
Student: Sunny Park. *Project:* Invasive species are more tolerant of herbivory than noninvasive congeners.
This set of projects resulted in a publication in *Biological Invasions* (Burns et al. 2006).

2003 Mentor, Young Scholar's Program at FSU. Joseph Rogan went on to volunteer for the YSP program in subsequent years.

Student: Joseph Rogan. *Project:* Why do only some introduced species become invasive? **This project resulted in a publication in *Biological Invasions* (Burns and Winn 2006).**

Invited presentations:

2010 Getting Ready for Tomorrow: Integrating Foresight and Emerging Trends into Timely Science Advice for Plant Risk Assessment organized by the Canadian Food Inspection Agency. Can demographic models be used to predict invasions? Jean H. Burns

- Indiana University/Purdue University Fort Wayne. Predicting biological invasions and community assembly: phylogeny, environment, and demography. Jean H. Burns
- Case Western Reserve University. Predicting biological invasions and community assembly: phylogeny, environment, and demography. Jean H. Burns

2009 Rhodes College. Predicting biological invasions and community assembly: phylogeny, environment, and demography. Jean H. Burns

- Bay Area Systematists. Panel discussion on community phylogenetics.
- Ecological Society of America. Organized oral session: Projection Matrix Models: Investigating General Patterns in Plant Demography. "Empirical tests of life-history evolution theory using phylogenetic analysis of plant demography" Jean H. Burns and Tiffany M. Knight
- International Congress of Ecology. Symposium: Comparative demography of plants. "Empirical tests of life-history evolution theory using phylogenetic analysis of plant demography" Jean H. Burns and Tiffany M. Knight
- University of Alberta, Canada. Workshop: "Developing methods to predict invasiveness of novel crops. Predicting and preventing invasions using demographic methods: strengths and pitfalls." Jean H. Burns.
- California State University, Chico. "The role of phylogeny in community assembly and biological invasions." Jean H. Burns.
- Bodega Bay Marine Laboratory. "The role of phylogeny in community assembly and biological invasions." Jean H. Burns.

2008 Southern Illinois University, Edwardsville. "Phylogeny, environment, and scale: can we predict and prevent invasions?" Jean H. Burns.

- University of California, Davis. "The influence of phylogeny, environment, and scale on the relationship between traits and invasiveness." Jean H. Burns.

2007 St. Louis University. "The influence of phylogeny, environment, and species traits on invasiveness in the Commelinaceae." Jean H. Burns.

- Washington University in St. Louis Evolution, Ecology and Population Biology Seminar. "Factors affecting invasion in the Commelinaceae." Jean H. Burns.
- Washington University in St. Louis, Plant Biology Retreat. "What makes some plants invasive? The role of phylogenetic novelty in invasions." Jean H. Burns, Anna Truszczynski, Tiffany M. Knight.
- Natural Areas Meeting. Reducing Seed Output and Seed Viability of Cultivars: "How Much Is Enough to Create a Plant That Will Not Be Invasive?" Tiffany Knight, Jean H. Burns, Kay Havens, Pati Vitt, Ed Guerrant.

2006 Tyson Research Center, Washington University in St. Louis. "Factors affecting invasion in the Commelinaceae." Jean H. Burns.

2005 Tropical spiderwort symposium, University of Georgia. "The effect of environment on invasibility in the Commelinaceae." Jean H. Burns, Alice A. Winn, Stacey L. Halpern, and Thomas E. Miller

Selected leadership and service:

2009 Member of the committee to select the Center for Population Biology Postdoctoral Fellow, University of California, Davis

- Judge for Buell/Braun awards at Ecological Society of America (ESA) meetings
- "How to get a postdoctoral position" discussion for Alliance for Graduate Education and the Professoriate, UC, Davis

2008 Instructor for Masters in Biology training program for high school science teachers, "Life Sciences for a Global Community," Tyson Research Center, Washington University in St. Louis.

- Volunteer for the Young Scientist's Program to bring science activities to local St. Louis high schools.

2007 Volunteer for the American Women in Science (AWIS) St. Louis chapter Women in Science day to expose high school girls to opportunities in the sciences at Washington University in St. Louis.

- Instructor for Masters in Biology training program for high school science teachers, "Life Sciences for a Global Community," Tyson Research Center, Washington University in St. Louis.
- Volunteer for Middle School Outreach "2007 ExxonMobil Bernard Harris Summer Science Camp" at Washington University in St. Louis.
- Design and organize a workshop on "Mentoring for Field Biologists," Tyson Research Center and Washington University in St. Louis. Focus on setting goals, establishing communication, responsibilities of good mentors, and mentoring resources.

2005 Graduate student representative to the Chair Search Advisory Committee for the Chair of the Department of Biological Science, Florida State University.

2002 President, Ecology and Evolution Research and Discussion Group (EERDG) at Florida State University.

Peer reviewer for:

National Science Foundation (NSF)

National Sciences and Engineering Research Council of Canada (NSERC)

Central Asia Research Travel (CART) competition, U.S. Civilian Research & Development Foundation (CRDF)

Journals: Acta Oecologia; American Naturalist; American Midland Naturalist; Annals of Botany; Biological Invasions; Botanical Journal of the Linnean Society; Diversity and Distributions; Ecological Applications; Ecology; Ecology Letters; Journal of Biogeography; Journal of Ecology; New Phytologist; Oecologia; Oiko; Sida, Contributions to Botany; Weed Science

Book reviews: Roberts and Company Publishers.

Professional Societies:

American Society of Plant Taxonomists (ASPT)
American Association of University Women (AAUW)
Ecological Society of America (ESA)

Professional References:

Thomas E. Miller	Florida State University Department of Biological Science Ecology and Evolution Program Tallahassee, FL 32306-1100 miller@bio.fsu.edu 850-644-9823
Tiffany Knight	Washington University in St. Louis Department of Biology St. Louis, MO 63130 tknight@wustl.edu 314-935-8282
Scott J. Steppan	Florida State University Department of Biological Science Ecology and Evolution Program Tallahassee, FL 32306-1100 steppan@bio.fsu.edu 850-644-6536
Sharon Y. Strauss	Section of Evolution and Ecology 2320 Storer Hall One Shields Avenue Davis, CA 95616 systrauss@ucdavis.edu 530-752-8415
Alice A. Winn	Florida State University Department of Biological Science Ecology and Evolution Program Tallahassee, FL 32306-1100 winn@bio.fsu.edu 850-644-9822