

• **Education**

- Ph.D. Washington State University, Dept. of Zoology 1998. “Host specialization and population differentiation in parasitoids”. Advisor: John N. Thompson.
- M.S. Washington State University, Dept. of Zoology 1994. “The effects of tail condition on survivorship and body growth of the lizard *Uta stansburiana*” Advisor: John N. Thompson.
- B.S. Ohio University, Dept. of Biological Sciences 1990, Zoology/Wildlife Biology. *Summa Cum Laude*

• **Professional Experience**

Assistant Professor, Syracuse University	2011–present
Research Affiliate, Archbold Biological Station	2011–present
Research Assistant Professor, Syracuse University	2006–2011
Adjunct Assistant Professor, Le Moyne College	2007
Research Associate, University of Idaho	2002–2005
Senior Lecturer, Vanderbilt University	2000–2002
Director, Molecular Evolution Laboratory, Vanderbilt University	1998–1999

• **Grantsmanship**

*Awarded:*

- 2015 NSF: Evolutionary Ecology. The role of species interactions and coevolution in speciation. \$149,777. (Althoff PI)  
  
National Geographic Society. Diversity in the pollination mutualism of yuccas and yucca moths. Althoff PI. \$15,000. (Althoff PI).  
  
Syracuse University Internal Grant Program. A New collaboration to explore the role of defensive chemistry in a famous insect-plant mutualism. Amount \$2,988. (Althoff PI).
- 2010 NSF: Ecology ROA Supplement, Dec 1. Funding for one community college instructor to new learn molecular techniques. \$19,250. (Althoff Co-PI).
- 2009 NSF: Ecology REU Supplement, Feb 1. Funding for two undergraduate projects: female choice in plants and genetic origins of polyploidy in alumroot. \$14,850. (Althoff Co-PI).
- 2007 NSF: Ecology. Direct and indirect effects of antagonists on mutualism. \$351,265. (Althoff Co-PI).

- 2003 NSF: Ecology panel, Jan 10<sup>th</sup>. Host specialization and differentiation in parasitoids. \$230,000. (Althoff Co-PI).
- 1996 James King Fellowship, Dept. of Zoology, WSU, “*Geographic structure in parasitoid-host interactions*”. Amount: \$2500.00
- 1993 Sigma Xi Grant-in-Aid of Research, funding renewed for previous grant, Amount: \$325.00
- 1992 Sigma Xi Grant-in-Aid of Research, “*Anti-predator defense in the side-blotched lizard*”, Amount: \$600.00

*Declined:*

- 2015 NSF: Invited proposal to Population and Community Ecology Panel. Ecological dynamics of multi-mutualist communities. \$676,067, Declined.
- NSF CAREER: Proposal to Evolutionary Ecology Panel. Evaluating the role of ecological speciation in diversification. \$968,255, Declined.
- 2014 NSF CAREER: Proposal to Evolutionary Ecology Panel. Ecological speciation in plant-feeding insects: linking host plant use to reproductive isolation. Declined--rated fundable but low priority
- NSF: Preliminary Proposal to Systematics Panel. Testing the role of mutualistic and parasitic interactions in diversification of an obligate pollination mutualism. Not invited.
- 2013 NSF CAREER: Proposal to Evolutionary Ecology Panel. Ecological speciation in plant-feeding insects: linking host plant use to reproductive isolation. Declined, rated fundable but low priority.
- NSF: Preliminary Proposal to Evolutionary Ecology Panel. Repeated host-associated differentiation in bogus yucca moths: testing the role of automatic isolating traits. Not invited.
- NSF: Preliminary Proposal to Systematics Panel. Testing the role of mutualistic and parasitic interactions in diversification of an obligate pollination mutualism. Not invited.
- 2010 USDA Pest and Beneficial Insects in Plant Systems Panel, June 2010. The importance of gene flow in limiting local adaptation in parasitoid-aphid interactions. Amount requested \$415,069, Declined.

- **Publications**

40. **Althoff, D.M.** Specialization in the yucca-yucca moth obligate pollination mutualism: a role for antagonism? *American Journal of Botany*, in press.
39. Hembry, D.H. and **Althoff, D.M.** Diversification and coevolution in brood pollination mutualisms: windows into the role of biotic interactions in generating biological diversity. *American Journal of Botany*, in press.
38. Darwell, C.T., Rivers, D.M. and **Althoff, D.M.** 2016. Rad-seq phylogenomics recovers a well-resolved phylogeny of a rapid radiation of mutualistic and antagonistic yucca moths. *Systematic Entomology*, in press.
37. Darwell, C.T., Segraves, K.A., & **Althoff, D.M.** 2016. The role of abiotic and biotic factors in determining coexistence of multiple pollinators in the yucca-yucca moth interaction, *Ecography*, <http://onlinelibrary.wiley.com/doi/10.1111/ecog.02193/abstract>.
36. **Althoff, D.M.** and Segraves, K.A. 2016. The evolutionary ecology of mutualism. *Encyclopedia of Evolutionary Biology*, Elsevier Publishing
35. Rivers, D.M., Darwell, C.T. & **Althoff, D.M.** 2016. Phylogenetic analysis of NextGen data: examining the influence of gene genealogy conflict on analysis of concatenated data. *Cladistics*, <http://onlinelibrary.wiley.com/doi/10.1111/cla.12149/abstract>.
34. Darwell, C., Fox, K.A. and **D.M. Althoff**. 2014. The roles of geography and founder effects in promoting host- associated differentiation in the generalist bogus yucca moth *Prodoxus decipiens*. *Journal of Evolutionary Biology* 27:2706-2718.
33. **Althoff, D.M.**, Fox, K.A., and T. Frieden\*. 2014. The role of ecological availability and host plant characteristics in determining host use by the bogus yucca moth *Prodoxus decipiens*. *Ecological Entomology* 39: 620-626. \*high school student
32. \***Althoff, D.M.**, K.A. Segraves and M.T.J Johnson. 2014. Testing for coevolutionary diversification: linking pattern with process. *Trends in Ecology and Evolution* 29:82-89. \*featured on cover
31. **Althoff, D.M.** 2014. Shift in egg-laying strategy to avoid plant defense leads to reproductive isolation in mutualistic and cheating yucca moths. *Evolution* 68:301-307.
30. **Althoff, D.M.**, W. Xiao, S. Sumoksi, and K.A. Segraves. 2013. Florivore impacts on plant reproductive success and pollinator mortality in an obligate pollination mutualism. *Oecologia* 173:1345-1354.
29. **Althoff, D.M.**, K.A. Segraves, C.I. Smith, J. Leebens-Mack, and O. Pellmyr. 2012. Geographic isolation trumps coevolution as a driver of yucca and yucca moth diversification. *Molecular Phylogenetics and Evolution* 62:898-906.
28. Siefert, A., Ravenscroft, C., **Althoff, D.M.**, Alvaer-Yepiz, J., Carter, B., Glennon, K., Heberling, Jr., J., Jo, In Su, Pontes, A., Sauer, A., Willis, A., and Fridley, J. 2012. Scale

- dependence of vegetation-environmental relationships: a meta-analysis of multivariate data. *Journal of Vegetation Science*, 23:942-951.
27. **Althoff, D.M.** 2010. The evolutionary underpinnings of macroecology. *Evolution* 64:291-294.
  26. Sumoski, S.E., A.J. Johncox, **D.M. Althoff** and K.A. Segraves. 2009. Impact of urbanization on tri-trophic interactions in an endemic scrub community. *Florida Entomologist* 92:582-587.
  25. Kolaczan, C.R., S.B. Heard, K.A. Segraves, **D.M. Althoff** and J.D. Nason. 2009. Spatial and genetic structure of host-associated differentiation in the parasitoid *Copidosoma gelechiae*. *Journal of Evolutionary Biology* 22:1275-1283.
  24. Sklaney, M, **D.M. Althoff**, and K.A. Segraves. 2009. Characterization of polymorphic microsatellite loci in *Yucca filamentosa*. *Molecular Ecology Resources* 9:894-896.
  23. **Althoff, D.M.** 2008. A test of host-associated differentiation across the 'parasite continuum' in the tri-trophic interaction among yuccas, bogus yucca moths, and parasitoids. *Molecular Ecology* 17:3917-3927.
  22. Pellmyr, O., M. Balcázar -Lara, K.A. Segraves, **D.M. Althoff**, and R.J. Littlefield. 2008. Phylogeny of the pollinating yucca moths, with revisions of Mexican species (*Tegeticula* and *Parategeticula*; Lepidoptera, Prodoxidae), *Zoological Journal of the Linnean Society* 152:297-314.
  21. Segraves, K.A., **D.M. Althoff**, and O. Pellmyr. 2008. The evolutionary ecology of cheating: does preadaptation facilitate the evolution of a cheater yucca moth? *Ecological Entomology* 33:765-770.
  20. Smith, C.I., O. Pellmyr, **D.M. Althoff**, M. Balcázar-Lara, J. Leebens-Mack, and K.A. Segraves. 2008. Patterns and timing of diversification in *Yucca* (Agavaceae): specialized pollination does not escalate rates of diversification. *Proceedings Royal Society of London Series B* 275:249-258.
  19. **Althoff, D.M.**, M.A. Gitzendanner, and K.A. Segraves. 2007. The utility of AFLPs in phylogenetics: a comparison of homology within and between genomes. *Systematic Biology* 56:477-484.
  18. **Althoff, D.M.** 2007. Linking ecological and evolutionary change in multitrophic interactions: assessing the evolutionary consequences of herbivore-induced changes in plant traits. In eds., T. Ohgushi, T. Craig and P. Price, *Ecological communities: plant mediation in Indirect Interaction webs*. Cambridge University Press.
  17. **Althoff, D.M.**, Svensson, G.P., and O. Pellmyr. 2007. The influence of interaction type and feeding location on the phylogeographic structure of the yucca moth community associated with *Hesperoyucca whipplei*. *Molecular Phylogenetics and Evolution* 43:398-406.
  16. Pellmyr, O., K.A. Segraves, **D.M. Althoff**, M. Balcázar-Lara, and J. Leebens-Mack. 2007. The phylogeny of *Yucca*. *Molecular Phylogenetics and Evolution* 43:493-501.

15. Eigenbrode, S.D., M. O'Rourke, J. D. Wulforst, **D.M. Althoff**, C. Goldberg, K. Merrill, W. Morse, M. Nielsen-Pincus, J. Stephens, L. Winowiecki, N. Bosque-Pérez. 2007. Employing philosophical dialogue in collaborative science. *BioScience* 57:55-64.
14. **Althoff, D.M.**, K.A. Segraves, J. Leebens-Mack, and O. Pellmyr. 2006. Patterns of speciation in the yucca moths: parallel species radiations within the *Tegeticula yuccasella* species complex. *Systematic Biology* 55:398-410.
13. Pellmyr, O., M. Balcázar-Lara, **D.M. Althoff**, K.A. Segraves, and J. Leebens-Mack. 2006. Phylogeny and life history evolution of *Prodoxus* yucca moths (Lepidoptera: Prodoxidae). *Systematic Entomology* 31:1-20.
12. **Althoff, D.M.**, K.A. Segraves, and O. Pellmyr. 2005. The community context of an obligate mutualism: assessing the role of pollinators and florivores in fruit set of *Yucca filamentosa*. *Ecology* 86:905-913.
11. Segraves, K.A., **D.M. Althoff**, and O. Pellmyr. 2005. Limiting cheaters in mutualism: evidence from hybridization between mutualist and cheater yucca moths. *Proceedings Royal Society of London Series B*, 272:2195-2201.
10. Svensson, G.P, **D.M. Althoff**, and Pellmyr, O. 2005. Replicated host-race formation in bogus yucca moths: genetic and ecological divergence of *Prodoxus quinquepunctellus* on sympatric yucca hosts. *Evolutionary Ecology Research* 7:1139-1151.
9. **Althoff D.M.**, K.A. Segraves, and J.P. Sparks. 2004. Characterizing the interaction between the bogus yucca moths and yuccas: do bogus yucca moths impact yucca reproductive success? *Oecologia* 140: 321–327.
8. **Althoff, D.M.** 2003. Does parasitoid attack strategy influence host specificity? A test with New World braconids. *Ecological Entomology* 28:500-502.
7. **Althoff, D.M.** and O. Pellmyr. 2002. Examining genetic structure in a bogus yucca moth: a sequential approach to phylogeography. *Evolution* 56:1632-1643.
6. **Althoff, D.M.**, J.D. Groman, K.A. Segraves, and O. Pellmyr. 2001. Phylogeographic structure of the bogus yucca moth *Prodoxus quinquepunctellus*: comparisons with coexisting pollinator moths. *Molecular Evolution and Phylogenetics* 21:117-127.
5. **Althoff, D.M.** and J.N. Thompson. 2001. Geographic structure in the searching behavior of a specialist braconid: combining molecular and behavioral approaches. *Journal of Evolutionary Biology* 14:406-417.
4. **Althoff, D.M.** and J.N. Thompson. 1999. Comparative geographic structures of two parasitoid-host interactions. *Evolution* 53: 818-825.
3. Thompson, J.N, and **D.M. Althoff**. 1999. Insect diversity and the trophic complexity of communities. In *Ecological Entomology* 2nd edition, eds. C. Huffaker and A. Gutierrez, John Wiley and Sons. pp. 537-552.
2. Thompson, J.N., B.M. Cunningham, K.A. Segraves, **D.M. Althoff** and D. Wagner. 1997. Plant polyploidy and insect/plant interactions. *American Naturalist* 150:730-743.

1. **Althoff, D.M.** and J.N. Thompson. 1994. The effects of tail autotomy on survivorship and body growth of *Uta stansburiana* under conditions of high mortality. *Oecologia* 100:250-255.

*In Review*

Darwell, C.T. and **Althoff, D.M.** Determinants of the geographic distributions of closely related *Yucca* species in Texas. *Journal of Biogeography*.

- **Professional Service**

Associate Editor, *Scientific Reports* (Nature Publishing group) 2016--present

NSF Evolutionary Ecology/Evolutionary Genetics Panel member April 2016.

Hamilton Award Committee, Society for the Study of Evolution 2013-2015.

Ad hoc reviewer for National Science Foundation grant panels (2010-2016)

NSF Population and Evolutionary Processes DDIG panel member Feb. 2008.

Society of Systematic Biologists symposium, SUNY-Stony Brook, NY, June 2006. "Patterns of co-diversification in specialized communities". Co-organized with Kari Segraves. \$4000

Ad hoc Reviewer for *American Journal of Botany*, *American Naturalist*, *Annals of the Entomological Society of America*, *Biological Journal of the Linnean Society*, *BMC Evolutionary Biology*, *Ecological Entomology*, *Ecography*, *Ecology*, *Entomologia Experimentalis et Applicata*, *Environmental Entomology*, *Evolution*, *Evolutionary Ecology*, *Heredity*, *Journal of Biogeography*, *Journal of Ecology*, *Journal of Heredity*, *Molecular Ecology*, *Molecular Phylogenetics and Evolution*, *Oecologia*, *Oikos*, *PLOS Biology*, *Scientific Reports*, *Systematic Biology*, and *University of Chicago Press*.

- **Professional Memberships**

Ecological Society of America  
Society for the Study of Evolution  
American Society of Naturalists

- **Presentations**

*Invited:*

2015 Virginia Commonwealth University, "Species interactions, coevolution, and speciation"

2013 Drexel University, "The role of coevolution in speciation—lessons from yuccas and yucca moths"

- 2012 University of Buffalo, “The role of coevolution in speciation—lessons from yuccas and yucca moths”
- 2011 Mathematical Biosciences Institute, Ohio State University, “The relative importance of geography and coevolution in yucca-yucca moth diversification
- 2008 SUNY-ESF, “Perspectives on engaging students: general biology and freshman learning experiences”
- 2006 University of Rochester, “Diversification within the yucca-yucca moth interaction--exploring the continuum from mutualism to antagonism”
- 2004 Washington State University, “Specialization in the tritrophic interactions between yuccas, yucca moths, and their parasitoids”
- 2002 University of Idaho, “Specialization in species interactions and the consequences for diversification”
- 2002 Archbold Biological Station, “Chance encounters, fine dining, and the rest is history: host use and the evolution of the yucca-yucca moth interaction”
- 2001 Murray State University, “Patterns of speciation within the bogus yucca moth: comparisons with the true pollinator moths”.
- 1998 Vanderbilt University, “Geographic structure in parasitoid-host interactions”

*National Meetings:*

- 2015 Botanical Society of America Colloquium, “The role of mutualism and antagonism in diversification of yuccas and yucca moths”
- 2014 Society for the Study of Evolution, Raleigh, NC. “Nextgen data: can we ignore incomplete lineage sorting and gene tree conflicts”
- “Investigating parameterization and missing data in RAD-tag phylogenetic inference”
- 2013 Society for the Study of Evolution, Snowbird, UT. “Host shifts lead to reproductive isolation in a rapid radiation of yucca moth pollinators and cheaters”
- 2007 Ecological Society of America, San Jose, CA. “To specialize or not to specialize: host use and genetic differentiation in the insect community associated with yuccas”.
- 2006 Society of Systematic Biologists Symposium, SUNY-Stony Brook, NY. “Patterns of diversification in yucca moths and their parasitoids”.
- 2005 Society for the Study of Evolution, Fairbanks, AK. “Diversification of yucca moths and their parasitoids”
- 2004 Society for the Study of Evolution, Fort Collins, CO. “The impact of community members on the obligate pollination mutualism between yuccas and yucca moths”

- 2002 Ecological Society of America, Tucson, AZ. “Does parasitoid attack strategy influence host specialization? A test with North American braconid parasitoids”.
- 2001 Ecological Society of America, Madison, WI. “Phylogeographic structure in the bogus yucca moth *Prodoxus quinquepunctellus*: comparisons with coexisting pollinator yucca moths”.
- 1998 Society for the Study of Evolution, Vancouver, B.C. “The geographic structure of parasitoid-host interactions”.

## • Educational Service

### Course taught at Syracuse University:

BIO 105 Technology inspired by nature (F 2008, 2009, 2010, 2014)  
 BIO 345 Ecology and Evolution (F 2011, 2012, 2013, 2014)  
 BIO 400/600 Biomimicry (S 2013)  
 BIO 400/600 Species Interactions and Biodiversity (S 2014)  
 BIO 400/600 Molecular Ecology (F 2015)  
 BIO 400/600 Advanced Field Biology (S 2016)  
 BIO 448 Evolutionary Medicine (F 2009, 2010)  
 BIO 700 Being Successful in Grad School (F 2006, 2007)  
 BIO 793 Grad seminar in Plant Ecology (F 2011, 2012)  
 BIO 793 Grad seminar on Insect-fungal Interactions (S 2016)

**Postdocs:** Annika Moe (2011–2012), David Rivers (2013–2104), Clive Darwell (2013 - 2015)

**Graduate students:** Haley Plasman, M.S. 2012-2105, Shengpei Wang, Ph.D., 2014–present

### Independent undergraduate research mentoring:

Jonathon Stryer	Bioinformatics and NextGen phylogenetics of yucca moths, Syracuse University
Alexandra Chapman	Characterization of gut bacterial communities in yucca moths, Syracuse University
Alison Agresta	Local adaptation of <i>Daphnia</i> to polluted lakes in New York, Syracuse University
Anna Conrad	The effects of fire on mycorrhizal associations of <i>Palafoxia feayi</i> in Florida scrub, Syracuse University
Nathan Schwarting	Impact of invasive anoles on native anoles in Florida Scrub, Syracuse University
Mylene Salinas	Female choice and sexual selection in the wild radish, Syracuse University



Sarah Sumoski	The effects of urbanization on plant morphology and plant-insect interactions, Syracuse University
Andrew Johncox	The effects of urbanization on plant morphology and plant-insect interactions, Syracuse University
Kristina Leedham	DNA barcoding in wasps, Syracuse University
Andrea Wigle	Sequence database for parasitic wasps, Univ. of Idaho
Sheila Arias	Host use by parasitic wasps of the yucca moths, Univ. of Idaho
James Goldmeyer	Molecular systematics of the yucca moths, Vanderbilt Univ.

### **Undergraduate Research Training:**

Molecular Systematics:	Noel Romero, Jeremiah Degenhardt, Sarah Hird, Christopher Jarosh, Michael Lacey, Kate Law, and Amy Telerone
Field Ecology:	Joel McGlothlin, Rachel Forbes, and Nicole Lang

### **Outreach**

2014-2015	Science Horizons--half day research workshops (2014 and 2015) for Syracuse area 7-8 <sup>th</sup> graders on plant-insect interactions.  Syracuse University Project Advance: research demonstration for minority high school students from the Syracuse area.
2013	Second Syracuse Biomimicry Challenge— see below. Students from my Bio 400/600 Biomimicry participated and presented posters at this Challenge.
2012	First Syracuse Biomimicry Challenge-- co-organizer of event to bring together SU students and faculty from diverse disciplines such as biology, industrial design, architecture, engineering, and business, to meet with national business leaders to discuss ways develop new technologies based on nature. The Challenge was attended by over 80 people and included a total of 4 local, regional, and national businesses.
2011	Science Horizons-- half day research workshop for Syracuse area 7-8 <sup>th</sup> graders on Biomimicry: technology inspired by nature.  <i>Adaptation in Florida Scrub: The process of evolution.</i> Co-developed a 76-page evolution module for 3 <sup>rd</sup> -5 <sup>th</sup> grade students ( <i>‘Discovering Florida Scrub’</i> ) for underrepresented groups in a rural county of Florida. The evolution module is available online at the Archbold Biological Station and my website.