

## Joshua Ladau

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CONTACT INFORMATION	Gladstone Institutes, GICD 1650 Owens Street San Francisco, CA 94158	<i>voice:</i> (541) 359-5758 <i>fax:</i> (415) 355-0960 <i>email:</i> joshua.ladau@gladstone.ucsf.edu
RESEARCH INTERESTS	Theoretical Ecology, Community Ecology, Null Models, Metagenomics, Mathematical Statistics, Convex Geometry, Geometric Probability, Entomology.	
PROFESSIONAL PREPARATION	Postdoctoral Fellow, Gladstone Institutes (October 2008 - present) Postdoctoral Fellow, Santa Fe Institute (October 2005 - October 2008) Ph.D., Neurobiology and Behavior, Cornell University (conferred January 18, 2006) <ul style="list-style-type: none"><li>• Dissertation: "Robust Statistical Tests for Detecting the Effects of Interspecific Competition on Ecological Communities"</li></ul> B.S., Entomology, <i>Summa Cum Laude</i> with Distinction in Research, Cornell University (2000)	
APPOINTMENTS	Research Intern <i>Archbold Biological Station</i> , Lake Placid FL Antlion allomones and trench geometry	July 2001 – October 2001
	Supervisor of Invertebrate Research, <i>Sierra Nevada Aquatic Research Lab.</i> , Mammoth Lakes CA Ecological effects of fish introductions	June 2000 – June 2001
	Research Intern <i>Archbold Biological Station</i> , Lake Placid FL Prey capture in praying mantids	June 1999 – August 1999
	Research Intern <i>Cornell University</i> , Ithaca NY Ambidextrous singing in crickets	August 1998 – June 2000
	Research Intern <i>Archbold Biological Station</i> , Lake Placid FL Singing behavior of pygmy mole crickets	July 1998 – August 1998
SELECTED HONORS & AWARDS	National Science Foundation Graduate Research Fellowship Barry M. Goldwater Scholarship American Wildlife Research Foundation Research Grant Cornell Presidential Research Scholar Explorers Club Research Grants National Merit Scholar Westinghouse Science Talent Search Finalist	2001-2004 1999-2000 1998 1997-2000 1997, 1996 1997 1997
PUBLICATIONS	Ladau, J. and S.J. Ryan. 2010. <i>M</i> Powering ecologists: community assembly tools for community assembly rules. <i>Oikos</i> , 119: 1064-1069.  Ladau, J. 2010. Optimal Inference in Ecology. Submitted.  Ladau, J., J.L. Green, and K.S. Pollard. 2010. Beta Diversity Follows a Universal Model. Submitted.	

PUBLICATIONS  
(CONTINUED)

Sharpton, T.J., S.J. Riesenfeld, S.W. Kembel, J. Ladau, J.P. O'Dwyer, J.L. Green, J.A. Eisen, K.S. Pollard. 2010. PhylOTU: A High-throughput Procedure Quantifies Microbial Community Diversity and Resolves Novel Taxa from Metagenomic Data. Submitted.

Ladau, J. 2010. The importance of unbiased algorithms for assessing the statistical significance of species co-occurrence patterns. In preparation.

Ladau, J., J.A. Dunne. 2010. Optimal inference about interspecific interactions using Bayesian Networks. In preparation.

Ladau, J and K.S. Pollard. 2010. Inferring the shapes of species ranges from distance-decay relationships. In preparation.

Ladau, J., S.J. Ryan, and S.J. Schwager. 2010. *CoOccur*: Software for Implementing Robust Null Model Tests of Presence-Absence Data. In preparation.

Ladau, J. and S.J. Schwager. 2010. Four Fundamental Processes of Community Assembly. In preparation.

Ryan, S.J. and J. Ladau. 2010. Structure in a savanna community: applying robust models of species assemblage in the Kruger National Park, South Africa. In preparation.

Ladau, J. 2008. Validation of null model tests using Neyman-Pearson hypothesis testing theory. *Theoretical Ecology*, 1: 241-248.

Ladau, J. and S.J. Schwager. 2008. Robust Hypothesis Tests for Independence in Community Assembly. *Journal of Mathematical Biology*, 57: 537-555.

Crandall, J.H., R. Ensafi, S. Forrest, J. Ladau, B. Shebaro. 2008. The Ecology of Modern Malware. *Proceedings of the 2008 New Security Paradigms Workshop*, 99-106.

Knapp, R., C. Hawkins, J. Ladau, and J. McClory. 2005. Fauna of Yosemite National Park lakes has low resistance but high resilience to fish introductions. *Ecological Applications*, 15(3): 835-847.

Bezzerides, A., T. Yong, J. Bezzerides, J. Hussein, J. Ladau, M. Eisner, and T. Eisner. 2004. Plant-derived pyrrolizidine alkaloid protects eggs of a moth (*Utetheisa ornatrix*) against a parasitoid wasp (*Trichogramma ostrinia*). *Proceedings of the National Academy of Sciences USA*, 101(24): 9029-9032.

Ladau, J. 2004. Territoriality and singing-site preferences in the cricket, *Cyphoderris monstrosa* (Orthoptera : Haglidae) in Western North America. *Entomological News*, 114(4): 197-204.

Ladau, J. 2003. Prey capture in a mantid (*Gonatista grisea*): does geotropy promote success? *Canadian Journal of Zoology*, 81(2): 354-356.

RECENT  
INVITED TALKS

- Inferring large-scale effects of interspecific interactions. Colloquium for the Ecology and Evolutionary Biologists, San Francisco State University, 2009.
- Null Model Tests of Community Assembly. Center for Complex Systems Research Seminar, University of Illinois at Urbana-Champaign, 2007
- Null Model Tests of Community Assembly. Adaptive Computation Laboratory Seminar, University of New Mexico, 2006

RECENT  
COLLOQUIA &  
SEMINARS

- Inferring the shapes of species ranges from distance-decay relationships. Ecological Society of America 95th Annual Meeting, Pittsburgh, 2010
- Inferring the spatial distributions of microbes from metagenomic data. 13th International Symposium on Microbial Ecology, Seattle, 2010.
- Null Model Software for Informing Conservation Policy. Society for Conservation Biology Annual Meeting, Chattanooga, TN, 2008
- Robustness and Bias of Null Model Tests. Bay Area Conservation Biology Symposium, University of California, Berkeley CA, 2007
- Should theoretical biology be formalized? Santa Fe Institute Researcher Meeting, Santa Fe NM, 2007
- “Fractional” categories and the assembly of ecological communities. Santa Fe Institute Researcher Meeting, Santa Fe NM, 2007
- Application of a robust null model test for detecting effects of interspecific competition. Bay Area Conservation Biology Symposium, San Francisco State University, San Francisco CA 2006
- Robust null model tests for detecting effects of competition on communities. Ecological Society of America 91st Annual Meeting, Memphis TN, 2006

SYNERGISTIC  
ACTIVITIES

- Working Group Organizer, National Institute for Mathematical and Biological Synthesis, 2008-present.
- Seminar Series Organizer, Santa Fe Institute, 2008.
- Postdoctoral Representative, Santa Fe Institute, 2006 - 2008.
- Teaching Assistant for Introductory Biology Laboratories, Cornell University BI0104, 2003.
- Teaching Assistant for Introductory Biology Laboratories, Cornell University BI0103, 2002.

COLLABORATORS  
AND  
OTHER  
AFFILIATIONS

- Jediah R. Crandall (University of New Mexico, *Collaborator*)
- Jennifer A. Dunne (Santa Fe Institute, *Collaborator*)
- Stephanie Forrest (University of New Mexico and Santa Fe Institute, *Collaborator*)
- Jessica L. Green (University of Oregon, *Collaborator*)
- Sadie J. Ryan (Stanford University, *Collaborator*)
- Steven J. Schwager (Cornell University, *Collaborator*)
- Katie S. Pollard (University of California, San Francisco, *Postdoctoral Advisor*)
- Thomas Eisner (Cornell University, *Ph.D. Advisor*)