

**Biological Sciences 2361: Advanced Ecology
Fall 2015**

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Course Requirements

Research Paper: 100 points

Final exam: 100 points

Discussions Questions: Two discussions (10 points each)

Quizzes: I reserve the option to have one or two surprise quizzes at the beginning of the class during the semester (20 points total). This ensures that students stay on top of the readings.

Extra Credit: I will be holding an evening reception for Dr. Steve Yanoviak at my house on Sept. 29. You can obtain 5 extra credit points for attending. The Reception will be at 1234 Resaca Place, Pittsburgh, PA 15212 and will begin at 7:30 pm. At this reception, we will spend a bit of time discussing the following:

Binkley, D. 1988. Some advice for graduate advisers. *Bulletin of the Ecological Society of America* 69:10-13.

Stearns, S. C. 1987. Some modest advice for graduate students. *Bulletin of the Ecological Society of America* 68:145-150.

Huey, R. B. 1987. Reply to Stearns: some acynical advice for graduate students. *Bulletin of the Ecological Society of America* 68:150-153.

Witz, B. W. 1994. Some pragmatic advice to graduate students: a hybridization of Stearns, Huey, and Binkley. *Bulletin of the Ecological Society of America* 75:176-177.

Final Grade: Your final grade will be the total number of points you have earned divided by the total number available. Extra credit points will not be a part of the total points but added on to your score on the final exam.

Research Paper: To be arranged with the instructor to fit the students research interests.

Statistics Primer Katie Barry and Nathan Brouwer will be offering two different primers on statistics. Times and dates will be arranged.

Plagiarism: Please understand that a single incident of plagiarism will result in a zero for the course. I will use both Turnitin and Google searches to evaluate possible plagiarism.

Schedule

Date	Topic	Readings
Sept. 1	<p>Speaker: Dr. Walter Carson, University of Pittsburgh</p> <p>Title: Forest dynamics</p>	<p>Nuttle, T., A.A. Royo, M.B. Adams, and W.P. Carson. 2013. Historic disturbance regimes promote tree diversity only under low browsing regimes in eastern deciduous forest. <i>Ecological Monographs</i> 83:3-17.</p> <p>Schumacher, H.B., and W.P. Carson. 2013. Diversity loss and biotic homogenization in 19 late-successional and old-growth forest stands in Pennsylvania. <i>Journal of the Torrey Botanical Society</i> 140:313-328.</p>
Sept. 8	<p>Speaker: Dr. Walter Carson, University of Pittsburgh</p> <p>Title: Dominance and rarity</p>	<p>Silvertown, J. 2004. Plant coexistence and the Niche. <i>Trends in Ecology and Evolution</i> 19:605-611.</p> <p>Pendergast, T.H., A.J. Baumert, and W.P. Carson. A super competitor is a master of all traits: Positive correlations among plant traits predicts dominance.</p>
Sept. 15	<p>Speaker: Dr. Walter Carson, University of Pittsburgh</p> <p>Title: Maintenance of species diversity</p>	<p>Kurten, E.L., and W.P. Carson. 2015. Do ground dwelling vertebrates promote diversity in a neotropical forest: Results from a long-term experiment. <i>BioScience</i> In press.</p> <p>Kurten, E.L., S.J. Wright, and W.P. Carson. 2015. Hunting alters functional seedling trait composition in a neotropical forest. <i>Ecology</i> 96:1923-1932.</p>
Sept. 22	<p>Speaker: Dr. Walter Carson, University of Pittsburgh</p> <p>Title: Enemies and species coexistence</p>	<p>Carson, W.P., and R.B. Root. 2000. Herbivory and plant species coexistence: Community regulation by an outbreaking phytophagous insect. <i>Ecological Monographs</i> 70:73-99.</p> <p>Carson, W.P., J.P. Cronin, and Z.T. Long. 2004. A general rule for predicting when insects will have strong top-down effects on plant communities: on the relationship between insect outbreaks and host concentration. Pages 193-211 in W.W. Weisser and E. Siemann, editors. <i>Insects and ecosystem function</i>. Ecological studies 173. Springer-Verlag, Berlin, Germany.</p>
Sept. 29	<p>Speaker: Dr. Steve Yanoviak, University of Louisville</p> <p>Title: If you can't glide, then swim: Selection pressures of an arboreal lifestyle</p>	<p>Yanoviak. S.P., M. Kaspari, and R. Dudley. 2009. Gliding hexapods and the origins of insect aerial behavior. <i>Biology Letters</i> 5:510-512.</p> <p>Yanoviak. S.P., and D. N. Frederick. 2014. Water Surface Locomotion in tropical canopy ants. <i>The Journal of Experimental Biology</i> 217:2163-2170</p>
Oct. 6	<p>Speaker: Dr. Jonathan Pruitt, University of Pittsburgh</p> <p>Title: The ecology of individual variation</p>	<p>Pruitt JN, Stachowicz JJ, Sih A (2012) Behavioral types of both predator and prey jointly determine prey survival: potential implications for the maintenance of within species behavioral variation. <i>The American Naturalist</i>. 179:217-227</p> <p>Pruitt JN, Modlmeier AP (2015) Succession on a silken reef: behavior of a foundation species drives community divergence, convergence, and collapse. <i>Journal of Animal Ecology</i>.</p>

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Oct. 13	<p>Speaker: Dr. John Wenzel, Powdermill Nature Reserve</p> <p>Title: What evolves and what does not.</p>	<p>Hormiga, G. et al. 2000. The Phylogenetic basis of sexual size dimorphism in orb-weaving Spiders. <i>Syst. Biol.</i> 49:435-462.</p> <p>Vollrath, F. and G. Parker. 1992. Sexual size dimorphism and distorted ratios in spiders. <i>Nature</i> 360:156-159.</p>
Oct. 20	No Class	
Oct. 27	<p>Speaker; Dr. Alex Royo, US Forest Service</p> <p>Title: Sustaining forest biodiversity</p>	<p>Royo, A.A., S.L. Stout, D.S. deCalesta, and T.G. Pierson. 2010. Restoring forest herb communities using landscape-level deer herd reductions: Is recovery limited by legacy effects? <i>Biological Conservation</i> 143:2425-2434.</p> <p>Tanentzap, A.J., K.J. Kirby, and E. Goldberg. 2010. Slow responses of ecosystems to reductions in deer populations and strategies for achieving recovery. <i>Forest Ecology and Management</i> 264:159-166.</p>
Nov. 3	<p>Speaker: Dr. Nate Morehouse, University of Pittsburgh</p> <p>Title: Ecology, sexual selection, and speciation</p>	<p>McNett, G.D. and R.B. Cocroft. 2008. Host shifts favor vibrational signal divergence in treehoppers. <i>Behavioral Ecology</i> 19:650-656.</p> <p>Wagner, C.E., L.J. Harmon, and O. Seehausen. 2012. Ecological opportunity and sexual selection together predict adaptive radiation. <i>Nature</i> 487:366-369</p>
Nov. 10	<p>Speaker: Katie Barry, University of Wisconsin</p> <p>Title: Are we missing the forest for the trees? Quantifying diversity maintenance in temperate forests</p>	Forthcoming
Nov. 17	<p>Speaker: Eric Griffin, University of Pittsburgh</p> <p>Title: The diversity, host specialization, and impact of foliar bacteria on regenerating trees in a tropical forest</p>	Forthcoming
Nov. 24	<p>Speaker: Dr. David Flagel, University of Notre Dame</p>	Forthcoming