

Syllabus for Biology 282: Seminar in Genetics and Evolution, Winter 2006

"Phylogenies and the Comparative Method" Wednesdays 2:10 - 4:00 in the Darwin Room of Spieth Hall

Instructor: Theodore Garland, Jr., Professor of Biology
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5 April 2006 - Organize and Lecture

Felsenstein, J. 1985. Phylogenies and the comparative method. *American Naturalist* 125:1-15.
[Note typo in Table 1]

Garland, T., Jr., and S. C. Adolph. 1994. Why not to do two-species comparative studies: limitations on inferring adaptation. *Physiological Zoology* 67:797-828.
[Note worked example of independent contrasts in Fig. 2]

12 April 2006 - Lecture

Blomberg, S. P., and T. Garland, Jr. 2002. Tempo and mode in evolution: phylogenetic inertia, adaptation and comparative methods. *Journal of Evolutionary Biology* 15:899-910.
Garland, T., Jr. 1992. Rate tests for phenotypic evolution using phylogenetically independent contrasts. *American Naturalist* 140:509-519.

19 April 2006 - Lecture

Garland, T., Jr., A. W. Dickerman, C. M. Janis, and J. A. Jones. 1993. Phylogenetic analysis of covariance by computer simulation. *Systematic Biology* 42:265-292.
Garland, T., Jr., and A. R. Ives. 2000. Using the past to predict the present: Confidence intervals for regression equations in phylogenetic comparative methods. *Amer. Naturalist* 155:346-364.

26 April 2006 - Lecture; Organize for student leaders; Students present outlines of project idea (5 min each)

Schluter, D., T. Price, A. O. Mooers, and D. Ludwig. 1997. Likelihood of ancestor states in adaptive radiation. *Evolution* 51:1699-1711.
Paradis, E. 2005. Statistical analysis of diversification with species traits. *Evolution* 59:1-12.

3 May 2006 - Students lead discussion of papers (to be chosen)

10 May 2006 - Students lead discussion of papers; Pointers for your presentations (e.g., sans-serif fonts, large fonts, fill frame, maximize ratio of data ink/non-data ink, build complex graphs)

17 May 2006 - Students lead discussion of papers; Guidelines for paper format

24 May 2006 - PowerPoint presentations of Student Projects

(31 May 2006 - No Class Meeting)

7 June 2006 - PowerPoint presentations of Student Projects

14 June 2006 - Papers due by 5:00 P.M.