

## SYLLABUS

Biodiversity Theory, Zoo4926 (section 2458), and Zoo6927 (section 0219). 1 credit

Instructor, Robert D. Holt, visiting scientist, Samuel Scheiner

Understanding the origins and maintenance of biodiversity is one of the principal goals of ecology and evolutionary biology. One challenge is coming up with effective measures to quantify biodiversity, at different scales of biological organization, and in particular to devise measures that can provide insight into ecological and evolutionary processes. One real difficulty is that the term 'diversity' has many facets and interpretations. It can encompass familiar concepts like species richness, evenness, and patterns of relative abundance, but the term also broadly denotes aspects of geographical distributions, phylogenetics, and the richness of functional traits. There are practical issues that arise in applying biodiversity metrics to biological data, and then in extracting the conceptual insights provided by these measures. This seminar will explore a wide range of theoretical, computational, conceptual, and practical issues revolving around the theme of quantifying biodiversity.

Logistics : Time and place: to be arranged at first class meeting. We will meet for an hour per week, at a time that is optimal for the participation of all interested parties.

First class meeting: Thursday 11 a.m., January 11, Bartram 110.

If you would like to enroll, please contact Robert Holt

Required text: *Biological Diversity: Frontiers in Measurement and Assessment*, editors Anne E. Magurran and Brian J. McGill, Oxford University Press (2011).

There will also be additional required readings from the primary literature, assigned as the semester proceeds.

Each enrolled student will be expected to be a regular participant in discussions of the readings, and also to make a presentation on the topic of the relationships between metrics of biodiversity and ecological and/or evolutionary processes.