

Jigsaw

*Advancing
Student-Active Learning in
Ecology Education*



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Photo from EcoEdDL: [Image showing the impact of deer browse on hardwood forest](#), Kenneth Klemow, Wilkes University

Special Feature: Abundance

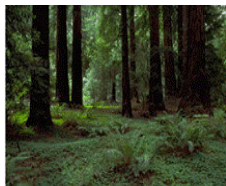
What's new in EcoEdDL

Resources are free but an account is required. This is to help us understand our users better. Login to EcoEdDL to download the resource

Processes that Regulate Patterns of Species and Genetic Diversity

Anna M. McKee, Gary T. Green and John C. Maerz, The University of Georgia

This activity focuses on how colonization and drift affect distribution of biodiversity in small versus large communities with varying degrees of isolation through a simulation using candies. By tossing, replicating, and removing candies, students simulate colonization and drift in communities over time and discuss results.



How many species are there? Determining species richness

Isaac W. Park, University of Wisconsin at Milwaukee, and David W. Tonkyn, Clemson University

In this single three-hour lab session, students learn how to collect data in the field, obtain their own estimates of species richness, and evaluate the underlying assumptions and validity of these estimates that is mainly focused on richness of tree species. The exercise can be adapted for plant or animal communities too.

Biology Scholars Program

Assessment Residency
March 2015 – May 2016
Measuring Student Learning
Institute: June 17-20, 2015
Washington, DC
Capstone: Mid-May
Location TBD

Research Residency
Measuring Student Learning
Institute: July 22-25, 2015
Washington, DC
Capstone: Mid-May 2016
Location TBD

Transitions Residency
Science Education Research
to Publication Institute: July
22-25, 2015
Washington, DC
[Applications](#) Due Feb 1, 2015

PKAL Summer Leadership Institute for STEM Faculty

Institute I: July 14–July 19,
2015

The Claggett Center:
Adamstown, Maryland

Institute II: July 21–July 26,
2015

The Claggett Center:
Adamstown, Maryland

Institute III: July 25–30, 2015
The Baca Campus of Colorado
College: Crestone, Colorado
[Applications](#) Due Feb 10,



Patterns and process in Landscape Ecology: Physical template, biotic interactions, and disturbance regime

Cari Ficken, Megan Fork, and Matthew Fuller, Duke University

This figure set introduces students to the variability in scales of pattern, process and to the fundamentals of Landscape Ecology. Three sections ask students to examine how three types of drivers influence landscape pattern: the physical template, biotic

interactions, and disturbance regimes using the Sierra Nevada Mountains and the Florida Scrub as examples.

Announcements

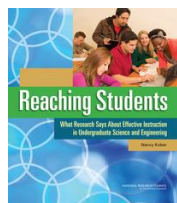
Share Your Teaching Resource this Winter!

We invite you to share your teaching resources to one of these peer-reviewed collections.

- [ESA EcoEd Digital Library](#), a portal of the LifeDiscoveryEd Digital Library. Accepts images, datasets, videos, figures and tables and learning activities. All resources should be accompanied with recommendations for pedagogical use.
- [CourseSource](#) ESA has developed the Ecology Learning Framework to guide the development of teaching material for submissions. Articles in the new journal spans across all the undergraduate biological sciences.
- [Teaching Issues and Experiments in Ecology \(TIEE\)](#), an online education journal coordinated by ESA's Committee for Education and Diversity. Accepts teaching ideas for labs, and those using figure sets and data sets.

Reports

Next Generation Science Standards (NGSS) Evidence Statements: NGSS Evidence Statements are now ready for high school science. The evidence statements are intended to identify clear, measurable components described within the NGSS.



Reaching Students: What Research Says About Effective Instruction in Undergraduate Science and Engineering: This report strives to answer which teaching strategies motivate and engage student to develop their skills and knowledge in science and engineering. Concrete examples and case studies are

included.

2015

Biological and Ecological Sciences Coalition

Congressional Visits Day

May 13-14, 2015

By AIBS

[Applications](#) Due March 13, 2015

AAC&U's Institute on General Education and Assessment

June 2-6, 2015

University of Central Oklahoma

[Applications](#) Due Feb 13, 2015

New Institute on Project-Based Learning by AAC&U, WPI

June 25-27, 2015

Worcester Polytechnic Institute, Worcester, MA

[Applications](#) Due Feb 16, 2015



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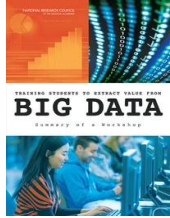
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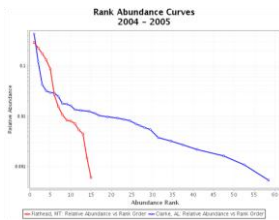
Training Students to Extract Value from Big Data: Summary of a Workshop (2014): This report provides a variety of perspectives about the structure and content of teaching big data and their integration into courses and curricula. Some participants noted that teaching Big data differs from teaching data science. Students with prior knowledge of computation, statistics, and visualization are likely to benefit most from Big Data courses.

Resources



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Geographic Gradients in Community Patterns of Forest Trees

Tom A. Langen, Psychology Clarkson University

This exercise provides a guided inquiry approach to understanding continental scale patterns of species richness, and patterns of relative abundance within

community species assemblages. Students evaluate whether species richness varies with latitude, whether evenness of relative abundance parallels the latitudinal pattern of species richness, whether coastal locations have higher species richness and evenness than continent interior locations.



Life Under Your Feet: Measuring Soil Invertebrate Diversity

Richard Boyce, Northern Kentucky University

This experiment provides the general framework for a soil diversity lab. Students test hypotheses about the diversity of invertebrates in soil in different places or under different conditions. Students sample invertebrates using Berlese-Tullgren funnels and compare the abundance and diversity (using diversity indices) of different sample types.



Rocky Intertidal Community Containing a Keystone Species

John Kominoski, University of Georgia

This photograph demonstrates the influence of a keystone species in maintaining biodiversity among coexisting organisms through predation. The orche sea star (*Pisaster ochraceus*), a classic example of a keystone species, maintains diversity of molluscs, crustaceans, and cnidarians in coastal intertidal communities.

Gerd Kortemeyer
Nora Bynum
Philip Bourne

Life Discovery Partners

Botanical Society of America
Society for the Study of Evolution
Society for Economic Botany

Committee on Diversity and Education (CDE)

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