FIELD NATURALIST (PLANT BIOLOGY)

http://www.uvm.edu/cals/plantbiology/field-naturalist-program

OVERVIEW

The Field Naturalist Program is a unique field-based degree program that develops the potential of future conservation leaders by emphasizing scientific integration, oral and written communication, and environmental problem solving. Students receive a solid grounding in field-related sciences and are trained to integrate scientific disciplines into a coherent whole at the landscape level. Students also develop competence in evaluating field sites from a number of perspectives and/or criteria, translating scientific insights into ecologically sound decisions, and communicating effectively to a wide range of audiences.

DEGREES

Field Naturalist (Plant Biology) M.S.

FACULTY

Barrington, David Stanley; Professor Emeritus, Department of Plant Biology; PHD, Harvard University
Beckage, Brian; Professor, Department of Plant Biology; PHD, Duke University
Keller, Stephen Robert; Associate Professor, Department of Plant Biology; PHD, University of Virginia
Molofsky, Jane; Professor, Department of Plant Biology; PHD, Duke University
Paris, Catherine Ann; Senior Lecturer Emerita, Department of Plant Biology; PHD, University of Vermont
Poleman, Walter Mallery; Director, Field Naturalist Program: Senior Lecturer, Rubenstein School of Environment and Natural Resources; PHD, University of Vermont

Courses

PBIO 5220. Ecology of Invasive Species. 3 Credits.
Focuses on reading, writing and discussing the primary scientific literature in the field of invasion biology, which draws from many disciplines, including genetics, evolution, population, community, and ecosystem ecology. Students will pursue one of these areas in depth through the preparation of a research paper and a grant proposal. Credit not awarded for both PBIO 5220 and PBIO 3220.

PBIO 5750. Gr Global Change Ecology. 3 Credits.
Survey of the drivers and mechanisms of climate change and its impacts on the distribution and abundance of species and ecological communities. Uses a systems approach that places global change ecology in the context of the Earth system, emphasizing the interactions and feedbacks within and between the ecological and climate systems. Credit not awarded for both PBIO 5750 and PBIO 3750.

PBIO 5820. Botany Seminar. 0 Credits.
Presentations of personal research by faculty, Graduate students, and outside guest speakers. Attendance required of Plant Biology Graduate students and Seniors in botanical research programs. Without credit.

PBIO 5940. Ecological Modeling. 3 Credits.
Provides an introduction to process-based modeling of ecological systems. Explores system dynamics and agent-based approaches to modeling ecological systems and processes. Includes a focus on the system dynamics modeling software Stella and the agent-based language Netlogo. Credit not awarded for both PBIO 5940 and PBIO 3940. Prerequisite: BCOR 2100 or Instructor permission.

PBIO 5990. Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

PBIO 6110. Field Naturalist Practicum. 0-3 Credits.
Landscape analysis; planning and designing field projects; integrated problem solving. Prerequisite: Field Naturalist student.

PBIO 6230. Field Naturalist Fundamentals. 3 Credits.
From bedrock geology to experimental design, conservation science to public communications, prepares students for the varied challenges that field naturalists encounter. Consists of field exercises in natural areas and farmscapes around northwestern Vermont and discussions featuring a diversity of pieces written by naturalists, field scientists, and environmental thinkers. Prerequisite: Field Naturalist Graduate student or Instructor permission.

PBIO 6240. Landscape Inventory&Assessment. 3 Credits.
A comprehensive, practical, hands-on training exercise that teaches how professionals go about making sense of a landscape and its many possible values. Designed for Graduate students, the class functions as a pro bono consulting team on a specific land parcel, helping the community sponsor understand the parcel's biota, soils, hydrology, geology, and natural communities. Prerequisite: Instructor permission.

PBIO 6330. Intro to Professional Writing. 1 Credit.
Writing seminar that focuses on close observation of the natural world and interpreting scientific findings for public audiences. Includes preparation of an animal encounter and science brief, as well as reading of published natural history and ecology essays. Prerequisite: Field Naturalist Program Graduate student.

PBIO 6340. Nature & Science Essays. 1 Credit.
Writing seminar focuses on natural history and science essay writing, while producing a magazine, Field Notes, the annual publication of UVM's Field Naturalist program. Working as a team, the class takes on responsibilities of publishing: planning, writing, editing, designing, printing, and distributing the magazine. Prerequisites: PBIO 6330; Field Naturalist Program Graduate student.

PBIO 6350. Writing: Science&Investigation. 1 Credit.
Writing seminar on interviews, opinion writing, feature stories, and effective scientific storytelling. Students conduct interviews, investigate scientific stories of general interest, and write public-facing articles. Prerequisites: PBIO 6330; Field Naturalist Program Graduate student.

PBIO 6360. Writing for a Popular Audience. 1 Credit.
Writing seminar in which students pitch, write, and publish a feature story, essay, or opinion piece in a general publication such as a newspaper, a trade or professional magazine, or website. Also explores news releases, fundraising appeals, and other institutional writing. Prerequisites: PBIO 6330; Field Naturalist Program Graduate student.

PBIO 6391. Master's Thesis Research. 1-18 Credits.
Research for the Master's Thesis. Credit as arranged.

PBIO 6392. Master's Project Research. 1-3 Credits.
Final project under the direction of a graduate faculty mentor. Credit as arranged.

PBIO 6690. Field Botany for NR Profession. 3 Credits.
Identification of flowering plants and ferns; survey of prominent Vermont plant families; natural communities, ecological determinants of plant distribution, especially soils; preparation of herbarium specimens. Prerequisite: Instructor Permission.

PBIO 6800. Ecological Genomics. 4 Credits.
An exploration of the merger of ecology and genomics to address the genetic basis of adaptive variation in natural populations. Emphasis on integrating quantitative approaches and hands-on analysis of large genomic and ecological data sets. Pre/Co-requisites: BCOR 2300, BCOR 2100, STAT 1410; basic knowledge of statistics, probability, genetics, and evolution required; familiarity with programming in R or bash is recommended. Cross-listed with: BIOL 6200.

PBIO 6940. Data Modeling for Envir Scienc. 3 Credits.
Introduction to data modeling using R statistical computing language, emphasizing likelihood, information theoretic, and Bayesian approaches to inference. Course focuses on the R language as a tool for data modeling. Class time divided between lectures that introduce statistical concepts and R language constructs and labs that stress applications. Successful participants will have some statistical background. Prerequisite: A course in introductory Statistics.

PBIO 6990. Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

PBIO 6991. Internship. 1-18 Credits.
On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

PBIO 6993. Independent Study. 1-18 Credits.
A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

PBIO 6995. Graduate Independent Research. 1-18 Credits.
Graduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

PBIO 7491. Doctoral Dissertation Research. 1-18 Credits.
Research for the Doctoral Dissertation. Credit as arranged.

PBIO 7990. Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

PBIO 7991. Internship. 1-18 Credits.
On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

PBIO 7995. Graduate Independent Research. 1-18 Credits.
Graduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.