

Ph.D. Fellowships in Ecosystem Informatics
Department of Mathematics
Oregon State University
NSF Interdisciplinary Graduate Education and Research Training (IGERT) Program

What is Ecosystem Informatics?

Ecosystem Informatics builds on synergies among ecosystem science, computer science, and mathematics in the context of regional, national and global natural resource management and policy. Informatics – which includes modeling, data analysis, interpretation, and management of information using computerized systems – combined with ecosystem science –study of the biotic (living) and abiotic (nonliving) components of complex systems and their interactions – contributes to basic theory as well as natural resource policy and management. Practically every government agency, national and international organization involved in natural resources and ecosystem management is engaged in Ecosystem Informatics.

What will I study?

Research and training for IGERT fellowship students integrate the **four ecosystem science areas** of (1) diversity, stability, and invasion in communities; (2) carbon and nitrogen fluxes in watersheds and airsheds; (3) disturbance dynamics in landscapes, oceans, and coastal zones; and (4) fluxes of material and energy through physical networks, with **five areas of informatics**: (a) software engineering for model construction, experimentation, and replication; (b) representation and modeling of complex ecosystems; (c) information management and access; (d) spatio-temporal database systems; and (5) data mining and pattern recognition. Students also may participate in internships with national and international organizations around the US and in Australia, Austria, Finland, and Italy.

What kind of jobs would I be qualified for?

Jobs in local, state, federal, and international agencies and educational institutions dealing with research and management of wildlife, fisheries, forests, agricultural systems, natural hazards (earthquakes, flood, fire), and conservation and restoration of native ecosystems.

What kind of support is provided by an IGERT fellowship?

An IGERT fellowship provides a full stipend and covers tuition and research expenses for qualified Ph.D. students who (1) have been accepted into a Ph.D. program in one of the six departments at OSU participating in the IGERT (Mathematics, BioEngineering, Computer Science, Fisheries and Wildlife, Forest Science, Geosciences), and (2) have proposed a research and study plan consistent with the goals of this IGERT. (The anticipated stipend level is \$ 27,500 per year). U. S. citizenship is required to qualify for IGERT support.

What should I do to apply?

Submit an application to the Oregon State Department of Mathematics graduate program. Also, send a separate inquiry directly to: Julia Jones, IGERT Program Director, Department of Geosciences, Oregon State University, Corvallis, OR 97331; e-mail: jonesj@geo.oregonstate.edu

Further questions about the program?

Contact one of the following people:

- Ron Guenther, guenth@math.orst.edu
- Mina Ossiander, ossiand@math.orst.edu
- Enrique Thomann, thomann@math.orst.edu
- Ed Waymire, waymire@math.orst.edu
- Larry Chen, chen@math.orst.edu