

Research Link 2000

Research Link 2000 is creating a new kind of learning community and resource center to support the introduction of more research-based experimentation in the undergraduate biology curriculum.

Bringing Research-based Experimental Systems to the Undergraduate Biology Curriculum

**Sponsored by the Council on Undergraduate Research
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What is Research Link 2000?

Research Link 2000 is a project that has brought together biology faculty from colleges and universities to select, develop and disseminate a group of field-tested, research-based systems and instructional materials for introductory biology courses. Its major objective is to promote research activities by students and faculty on all levels of the undergraduate curriculum.

What Need Does It Serve?

The Council on Undergraduate Research believes that education is best served by faculty-student collaborative research combined with investigative teaching strategies. Involving undergraduates in research activities is a very valuable learning experience, whether it is part of the standard laboratory course or a special project with a professor.

Biology departments that adopt one or a few research systems as the core of a research-based curriculum will derive many benefits. Faculty will be able to collaborate on their research efforts, equipment costs will be reduced, lab courses will have a common research-based core, and students will become better prepared for advanced research studies due to their prior experience with the system.

The Research Link 2000 web site permits students and faculty using the same system to share/compare data, to engage in meaningful discussions about research with their peers, and to share ideas and strategies for strengthening undergraduate research programs.

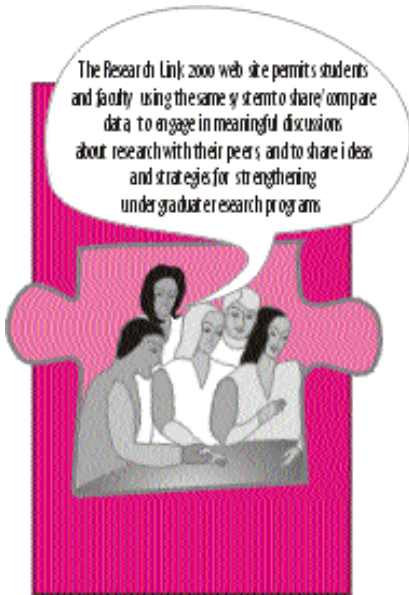
How Was It Developed?

Research Link 2000 was funded by a three-year National Science Foundation grant to the Council on Undergraduate Research. The first phase of the project was held at the University of Wisconsin-Whitewater, November 6-9, 1997. Sixty-five biology faculty members from more than forty different universities and colleges presented seminars describing in detail research systems that have potential for introducing research-based labs into the undergraduate curriculum. Descriptions of the research systems can be found at the Research Link web site (<http://www.researchlink.ferris.edu>).

Ten research systems were selected for further development at the Research Link 2000 Workshop, held at Carleton College, August 5-9, 1998. During this second phase of the project, system authors, project team members, and Carleton faculty and students reviewed each system and representative experiments. Each author demonstrated the research system and received suggestions as to how the system could be modified to accommodate the objectives of Research Link 2000. Guidelines were adopted for the design of the web site.

The final formal phase of the Research Link 2000 Project took place on the campus of Ferris State University, August 12-15, 1999. The purpose of the institute was to assist faculty in adopting one or two of research systems at their home institution. Twenty-five institutional teams were selected to participate based on proposals that outlined how they planned to utilize the systems and the anticipated impact on the curriculum.





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Web Site

The Research Link 2000 web site (<http://www.researchlink.ferris.edu>) describes ten experimental systems and research-based lab experiments (LabCore) that can be easily implemented in an undergraduate laboratory, along with references, techniques and sources for securing stock cultures and equipment. Faculty and undergraduate students can share data, discuss results, and explore and discover connections in related laboratory experiments via bulletin boards (LabLink) accessed over the web site.

What's in the Future for Research Link 2000?

Research Link 2000 offers beginning and advanced institutes that will introduce faculty members to the systems and their advantages for integrating research into the undergraduate curriculum. The web site will continue to evolve more effective ways to serve as a central resource and communication center for those who are interested in moving toward a more research-based undergraduate curriculum. We will add to the information contained in the LabCore and LabLink sections of the web site as more and more sites adopt the Research Link 2000 systems and provide feedback. Watch the Research Link 2000 web site for details of these ongoing activities.

Experimental Systems

Each system has some unique characteristics that allow it to be used to answer some very important questions about life at all levels of organization. Research scientists are using many of these organisms all over the world to learn more about reproduction, genetics, cancer, ecology and evolution. The organisms are simple to maintain and require a minimum of advanced instrumentation. These are the systems, and their authors:

Blue Plants

Sue Karcher, Purdue University

Chlamydomonas

Mike Adams, Eastern Connecticut State University and Steve Daggett, Avila College

C-Fern

Leslie Hickok and Tom Warne, University of Tennessee

Fast Plants

Paul Williams, University of Wisconsin

Freshwater Spring Organisms

Doug Glazier, Juniata College

Sea Anemone

Drew Ferrier, Hood College

Tobacco Hornworm

Sarah Deel, Carleton College and Amy Mulnix, Earlham College

Trematodes

Ron Rosen, Berea College

Yeast

Beth Montelone, Kansas State University and Brian White, University of Massachusetts

Zebrafish

Janice Chang, Massachusetts Institute of Technology

Research Link 2000 Project Team

Jim Hoerter, Project Coordinator, Ferris State University

Lisa Baird, University of San Diego

Sibdas Ghosh, University of Wisconsin-Whitewater

Elaine Hoagland, Council on Undergraduate Research

Kipp Kruse, Eastern Illinois University

Michael Tannenbaum, Marist College

Council on Undergraduate Research

734 15th Street NW Suite 550

Washington, D.C. 20005

202-783-4810

cur@cur.org

<http://www.cur.org>

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