PANEL DISCUSSION: TEACHING THE LIBRARY RESEARCH PROCESS (OR, HOW WOULD A GREAT DANE, A COLLIE AND A POODLE TEACH THE NEW DOGS SOME OLD TRICKS)

Joan Parker
Moss Landing Marine Laboratory

Maureen Nolan
University of Washington and Friday Harbor Labs

Barbara Butler
Oregon Institute of Marine Biology

Panelists Barbara Butler, Maureen Nolan and Joan Parker discussed the different approaches we took in teaching library research methods. The discussion, as synthesized here, focused on teaching library research methods at the undergraduate, graduate and even library school level.

The panelists shared instructional philosophies and strategies. We agreed that there is no "right way" to teach the research process but we leave you with our three contrasting examples and have included our syllabi.

There are some common elements in each of these programs, but the primary differences are the way in which the information is delivered. We agree that knowing our evolving client base is the best way to tailor our educational programs to their changing needs, and their changing way of incorporating information into their knowledge base.

Case 1:
Barbara Butler, Oregon Institute of Marine Biology

Working primarily with upper division and graduate students I have found that the best way to educate them about library resources and the research process is to give them the tools they need to manage their bibliographies. Students advise their peers to take my class to learn how to use EndNote. While they learn to use this bibliographic management software I can touch a number of issues that related to information fluency (see: http://www.colleges.org/%7Eif/if_definition.html) and discuss the scholarly publishing process with this next generation of faculty (see: http://www.arl.org/sparc/home/index.asp).

Case 1 sample syllabus:

Marine and Environmental Research: Information and Technology
Library 407/507 (Instructor: Barbara Butler)
Wednesday evenings: 6-6:50

Course Objective:
The objective of this course is information fluency. Using library and other information resources available in marine and environmental studies you will be able to:

- Determine the extent of information needed
- Access the needed information effectively and efficiently
- Evaluate information and its sources critically
- Incorporate selected information into your knowledge base
- Use information effectively to accomplish a specific purpose
- Understand the economic, legal and social issues surrounding the use of information and access and use information ethically and legally
- Use appropriate technology to track and convey the above (in our case we will be using EndNote bibliographic software)

Text:
No text will be used but we will do selected readings in the current literature (see bullets under each weekly class meeting description). Handouts will be provided for each class session.

Grading:

- 75% attendance
- 25% class participation
- 100-90%(A); 89-80%(B); 79-70%(C)
- Students will create and add to an EndNote bibliography each week and graduate students will be required to produce a bibliography of their thesis-related materials to date.

Class sessions:

Week 1
You will learn how to manage citations with bibliographic software (EndNote). During class we will download citations from online library catalogs and upload these citations into EndNote. Class members should leave with an understanding of the benefits and drawbacks associated with using EndNote connection files versus catalog specific download options.

Week 2
Building on experiences from last week, you will search and download citations from online journal indexes. We will learn how to make use of EndNote import filters to parse the data into appropriate fields within your bibliography. Students will learn to identify the supplier of their journal databases and how to choose the appropriate filter, downloading from www.niles.com if necessary.

- Pechenik. 2001. Should auld acquaintance be forgot: possible influence of computer database on citation patterns in the biological literature. *Bioscience* 51(7): 583-588.

Week 3
You will learn to go beyond Google. We will discuss effective web searching techniques (including the deep and invisible web), develop the skill to critically evaluate sources on the web and learn how to cite electronic resources.

Week 4
You will learn about maps and geospatial resources including gazetteers, USGS topographic maps, NOAA harbor and coastal charts, commonly used map symbols, and township and range notation. Class participants will learn how to cite map and geospatial resources in their EndNote bibliography.

Week 5
We will have a guest speaker who will describe a specific application of a geographic information system in the sciences. We will see demonstrations of ArcView and ArcGIS software. You will learn how to incorporate data layers into an existing GIS project and how to cite GIS products within your bibliographies.

Week 6
Citation indexes. We will look at print copies of *Science Citation Index* and search this source online via *Web of Science*. Class members will be expected to expand their bibliographies based on searches in these two sources for cited references.

Week 7
What makes a good journal? We will discuss *Journal Citation Reports* and the ISI Impact Factor as one method of ranking the influence of a journal. Class members will find impact factors for the journals in which their major professors publish.

Week 8
What are the alternatives to the scholarly publishing process? We will discuss SPARC, societal publications versus commercial journals, open archive initiatives and alternative publishing models.

- Marshall. 2000. Publish and perish in the Internet world. *Science* 289:223-225.

Week 9
Copyright -- what it means and what it costs. Using one of the course readers for the term we will look at the copyright clearance fees for each of the articles included. We will switch gears and also discuss peer review and what that adds to the scholarly publishing process.

Final Week:
Wrap up, review, learn to use "Cite While You Write" with EndNote and Word and print EndNote bibliographies.

Case 2:
Maureen Nolan, Friday Harbor Librarian, University of Washington

Trying to do library instruction at a remote marine laboratory, while not in regular attendance at the lab, presents unique challenges. In addition to presenting some research methods in person at the beginning of the quarter, creating some follow-up materials that students could refer to during the course of their research was essential. A tri-fold brochure was developed listing the most relevant databases, a written example of how to do a typical search, and methods for ordering materials from the Seattle campus. Also, the library's web page was enhanced to include links to live "chat" reference. From the questions that we still receive from students at the labs, we've found that these measures, while helpful, are not completely addressing the obvious need for library instruction for these students. It was also interesting to discover that library school students are not immune from "Google-ing" in an awkward attempt to do library research, and also benefited from a class addressing research methods in the sciences. It is my hope that this class could be adapted into a one-unit course for the students at the Friday Harbor Labs.

Case 2 sample syllabus:

- Overview of science and technology
- Brief History of the Internet
- Theory and practice of reference--overview
- Overview of science disciplines
- Scientific and Technical Communication
- Evaluating resources
- Information seeking behavior of scientists and engineers
- Print resources:
  - Dictionaries, Handbooks and Encyclopedias
  - *Ulrich's* (in print)
  - *Science Citation Index* (in print)
  - Article indexes: e.g., *Biological Abstracts, Zoological Record, Engineering Index*
  - *CASSI* (in print)
- Catalogs and Indexes Electronic indexes and databases (lab)
  - UW Catalog
  - WebSPIRS (Silver Platter) Databases
  - Science Citation Index (Web of Science)
  - Ulrichs, CASSI
  - OCLC
- Scientific Publishing, SPARC
- Serials:
- Copyright issues
- Document delivery
- Table of Contents Services

- Vendors and aggregators/Publishers
- Consortia
- Putting it all together: Bad Citations
- Government information
- Technical reports and other grey literature
- NTIS
- Maps and GIS
- Patents, trademarks and standards

Case 3:
Joan Parker, Librarian, MLML/MBARI Research Library

As the librarian for a marine laboratory with a focus on graduate education, developing a library research methods course was an obvious solution. The problem was more students entering the program unprepared for graduate work, especially that involving library research. A one-unit graduate course, which students may count toward their degree, was first taught during the Fall 2001 semester. Students are presented with an historical context for scientific information in addition to the more traditional topics covered in a library research methods course. Attention is also given to emerging issues relevant to decisions scientists make concerning scholarly publishing.
Case 3 sample syllabus:

Syllabus MS201
Library Research Methods in Marine Science
Fall 2003

Week 1	Bibliographic landmarks and their scientific context
Week 2	The journal and the role of scientific societies
Week 3	Exploring the world: the literature of expeditions, surveys and international programs
Week 4	B.C. (before computer) bibliographic tools
Week 5	The case of "Historical over fishing"
Week 6	A.C. bibliographic tools
Week 7	No class
Week 8	The web as a bibliographic tool: expectations versus results
Week 9	Government reports, environmental reports and other types of grey literature
Week 10	Locating facts, statistics, biographies

Week 11 Developing a good search strategy; effective research habits

Week 12 Metadata, OAI, OpenURL, DOIs and other information technologies

Week 13 Implementing information technologies: societies versus publishers

Week 15 Copyright and intellectual property issues

Week 16 Turn in and discuss final project