The Library as laboratory

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Contributing to the Undergraduate Research Mission: The Library as Laboratory

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I’m going to spend a little time talking to frame issues - but I will also be posing specific questions for small group discussion -- and at the end we will be doing a bit of action planning for ourselves and our campuses
I’m going to address the relationship between the library and undergraduate research in two ways -- one is to focus on ways that the library contributes directly to the improvement of the quality of undergraduate research -- working both with students and with instructors - both within the curriculum and through individual undergraduate research mentoring programs.

And the second issue is to focus on ways that libraries do and can help advance the undergraduate research agenda on campus -- how the library - particularly in partnership with others - can develop strategies and initiatives that overall support and advance creating a campus culture that values undergraduate research.
Why is this important - for libraries and for the university and for students?

Librarians have been doing it - but we cannot do it alone -- some instructors assume this responsibility as well - but far too many still define their responsibility as delivery of content and assessing the student product -- and don’t concern themselves extensively with the process - the methods used by the student to create the product - and all the skills and abilities needed to succeed in creating that product.
We need them to be intelligent consumers - we need them to discriminate, analyze, and create

This fast food generation --seeking instant information gratification, can be indiscriminate and uncritical

but instead we are seeing evidence of what one of our deans calls “Intellectual laziness”
I’d like to share a few facts that I’ve gathered from various studies and reports about student information seeking patterns and behaviors:. The source documents are referenced in your list of resources.

**Pew Internet and American Life Project**


Accessibility and Distribution of Information on the Web,

Steve Lawrence and Lee Giles http://www.wwwmetrics.

**ARL Libraries Comparison of Yearly Increases in Electronic Resources and Total Materials Expenditures Average Counts**

Everybody in this room has spent their careers becoming experts not only in your content area - but in connecting to and maneuvering through the scholarly publishing pathways for your disciplines -- whether it’s the biologists and engineers who know how to use the tools - BIOSIS, Medline, Web of Science - and Compendex, and INSPEC to find preprints and tech reports and conference proceedings.. Or it’s the humanists and social scientists who have added the exploration of electronic texts to their use of printed monographs…use primary sources in special collections and in digital libraries -and use a wide array of bibliographic management tools to capture and manipulate bibliographic output.

What skills and abilities do your students need to function successfully in this information environment?

Technical skills -- critical thinking skills
The literature is relete with sources that describe the learning process expected from a science lab that accompanies a lecture.
And this is a list detailing the process expected from students in a laboratory course.

Now let's go back and think about the information environment and learning to function within it. Let's consider the Library not just as a place - a big building with lots of stuff - and compare it NOT to the physical laboratory with a storeroom of materials and work areas to use tools -- but a place where learning occurs using those tools and those materials...

Suddenly this list of developmental skills expected from students in their laboratory is the same as what we expect from students in the information research process.
And this is how the library functions as laboratory for student learning
If libraries tease out the research skills articulated in the information literacy standards
Such as these

devels a thesis statement and formulates questions...
identifies the value and differences of potential resources...
selects the most appropriate investigative methods...
constructs and implements effectively designed search strategies...refines and revises...
articulates and applies criteria for evaluating information and sources...
summarizes main ideas, synthesizes to construct new concepts, compares new knowledge with prior...

applies new and prior information to the planning and creation of a product
follows laws, regulations, policies, etiquette...acknowledges sources when communicating product...
Libraries can design and deliver programs that support the development of these learning outcomes…

Librarians are functioning like laboratory instructors - providing guidance, assistance – taking advantage of the teachable moment - providing context - directing towards tools - teaching research methods
We can’t do it alone -- curriculum of labs is developed to complement course objectives. That curriculum is intentional, designed from the beginning.

Some library instruction modules are also developed that way, intentionally and as part of overall course design with the librarian collaborating with instructor on course - or with academic department on curriculum. These are the most effective. But far too many research based courses let students loose to develop these skills and abilities “on their own” without any thought to an intentional relationship with the Libraries where that exploration will occur.

Libraries are working with faculty but also with others on campus who are involved in teaching initiatives on campus especially with teaching centers

* new faculty orientation
* teaching fellows
* learning management system - as new courses go on web
Let’s think about the following:

*How can the library contribute to the quality of undergraduate research projects completed as part of individual mentoring programs?*

Any more ideas - examples
Advancing the Undergraduate Research Agenda on Campus

- **Strategies**
  - align with other campus initiatives

- **Partners**
  - collaborate with academic partners who share values

- **Projects**
  - put creative ideas into practice
It’s important to start with a review of the initiatives on YOUR campus – to identify strategies to help them, to identify partners to work with, to design projects that help the campus succeed.
You will need to think through your own set of key partners
How can the library contribute to the quality of undergraduate research projects completed as part of individual mentoring programs?

Any more ideas - examples
Now we are going to work on an action plan for your own campus.