Libraries and Stem Cell Research

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MIT Libraries

Library Role?

http://assets.espn.go.com/photo/2008/1228/nfl_a_smith01_400.jpg Downloaded 5/9/09

MIT Libraries

Objectives

- Understand how libraries can contribute to molecular-level bioscience research and education.
- Explore strategies for beginning or growing a library program to support molecular bioscience.
- Build on *University of Massachusetts and New England Area Librarian E-Science Symposium* - http://library.umassmed.edu/escience_symposium09.cfm

Outline

- Subject matter in perspective: What is different, what is familiar?
- Understanding barriers and opportunities.
- Building a program: MIT experience.
- Getting started with group exercise.

What is different?

- New families of content databases
  - NCBI, Protein Data Bank…
- New tools to work with biological data
  - BLAST, UCSC Genome Browser
- Funding mandates to manage data from bench research.
  - NSF, NIH

What is familiar?

- Interdisciplinary
- Purchase and license resources
- Organize content
- Service and training
- Preservation and curation
  - Checklist example

Barriers: Three Cs

- **Comfort:** We don't know the subject matter, we don't know the language, we don't know the resources and tools.
- **Credibility:** see above.
- **Capacity:** time to learn, create workspace for new service.
- **Sustainability:** How would we cope with success?

Getting Started: Case Study

- Step 1: Get a PhD in Molecular Biology

Program Building: MIT Libraries BTeam

- Study group - 2005
- Survey of faculty bioscience research & research centers
- Review of collections and liaison responsibilities
- Create plan for bioinformatics program

MIT Interdisciplinary Bioscience Centers, Labs and Programs

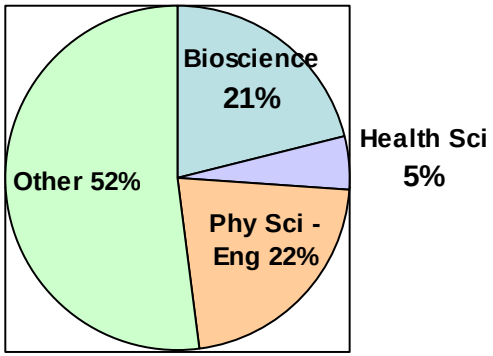
Biotechnology Process Engineering Center	http://web.mit.edu/bpec/
Broad Institute	http://www.broad.mit.edu/
Center for Biomedical Engineering	http://web.mit.edu/cbe/www/
Center for Biomedical Innovation	http://web.mit.edu/cbi
Center for Cancer Research	http://web.mit.edu/ccr/
Center for Environmental Health Sciences	http://cehs.mit.edu/
Center for Global Change Science	http://web.mit.edu/cgcs/www/
Center for Materials Science and Engineering	http://web.mit.edu/cmse/www/
Center for Space Research	http://space.mit.edu/
Clinical Research Center	http://web.mit.edu/crc/www/
Computational and Systems Biology	http://csbi.mit.edu/
Earth Resources Laboratory	http://www-eaps.mit.edu/erl/
Earth Systems Initiative	http://web.mit.edu/esi/
George Russell Harrison Spectroscopy Laboratory	http://web.mit.edu/spectroscopy/
Institute for Soldier Nanotechnologies	http://web.mit.edu/isn/
McGovern Institute for Brain Research	http://web.mit.edu/mcgovern/
Microsystems Technology Laboratories	http://mtlweb.mit.edu/
Picower Center for Learning and Memory	http://web.mit.edu/picower/
Program in Polymer Science and Technology	http://web.mit.edu/ppst/
Program on the Pharmaceutical Industry	http://web.mit.edu/popi/
Whitehead Institute for Biomedical Research	http://www.wi.mit.edu/

Interdisciplinary Bioscience @MIT

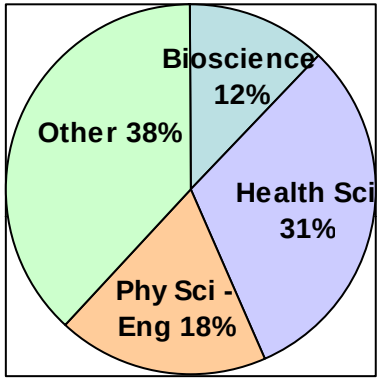
Aeronautics	4.7%
Chemical engineering	53.3%
Chemistry	55.0%
Civil and Environmental Engineering	22.2%
EAPS	20.0%
EECS	25.8%
Materials science	27.0%
Mathematics	6.0%
Mechanical engineering	15.1%
Nuclear Engineering	30.4%
Ocean Engineering	4.2%
Physics	5.0%

UW Students, Faculty and Doctorates Awarded by Academic Area

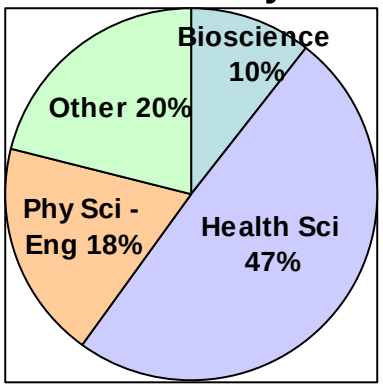
Undergraduate Majors



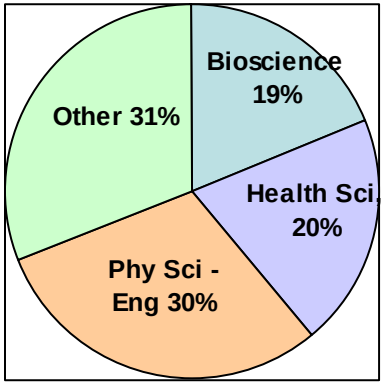
Grad/Professional Students



Faculty



Doctorates Awarded



UW Libraries Biosciences Review Task Force Report http://www.lib.washington.edu/assessment/reports/

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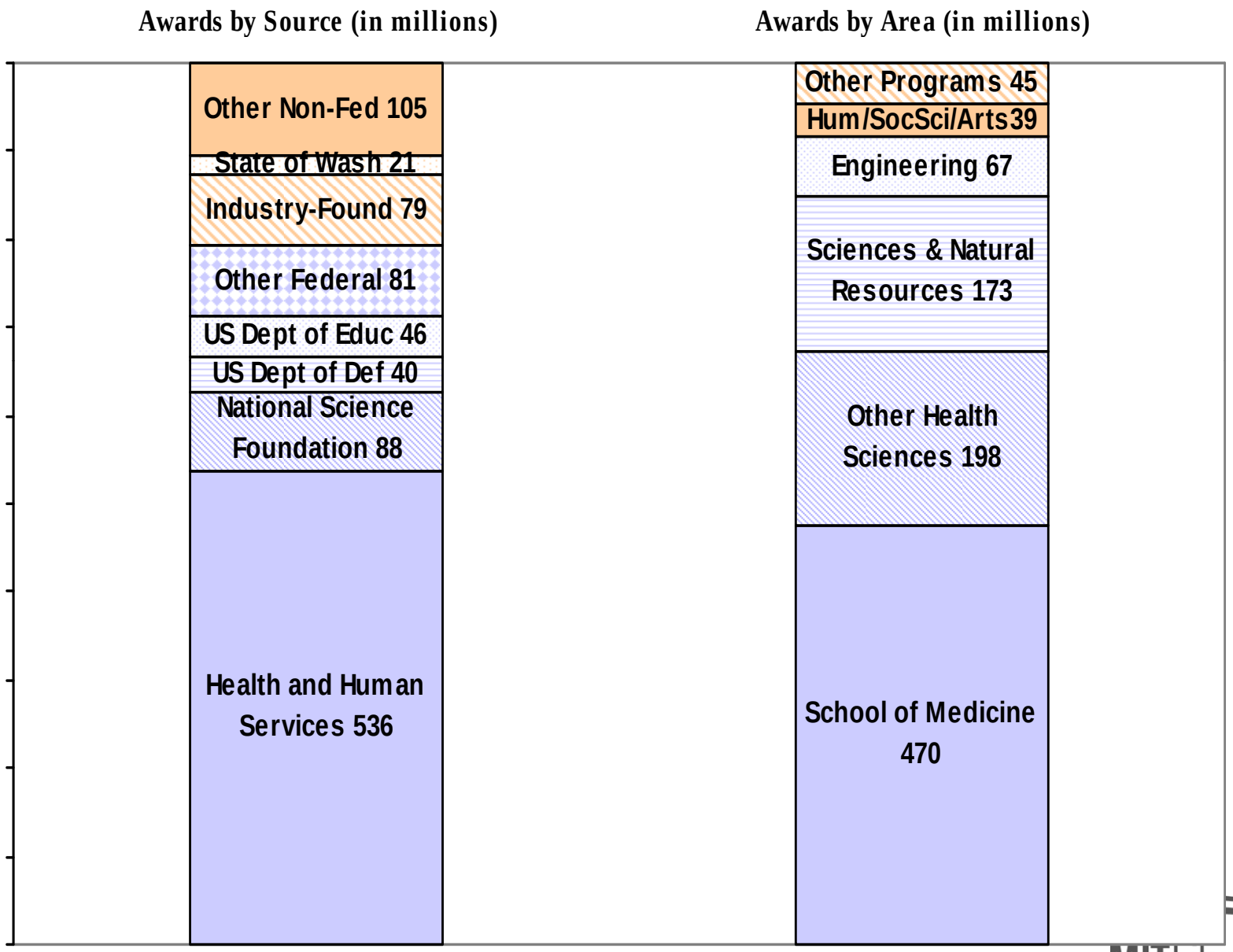
FY 2005 External Funding By Source and UW Faculty Area



Program Building: Interdisciplinary Bioscience Group

- Oversee development of a Bioinformatics Program
- Assign liaison to new Biological Engineering Department
- Develop RFP for NLM 2nd Year Fellowship program

Program Building (cont.): Bioinformatics

- Internal staff development
  - NCBI 3 day; Woods Hole BioMedical Informatics program
- Invited speakers
  - David Osterbur – BLAST training
- Hosted instruction
  - Cancer Center, Broad Institute
- Co-funded purchase of resource
  - BioBase purchase

Program Building: Early Lessons

- There was interest in our early programming.
- Our instructional facilities were a key asset.
- Our ability to communicate broadly was highly valued.
- There was support for building a community infrastructure.

Program Building (cont.)

- Recruited NLM Fellow
- Outreach projects
  - Health Sciences and Technology Program, Biological Engineering
- Cross Institutional Partnerships
  - Countway Library
- Scholarly Publishing
  - NIH Mandate, MIT Open Access Policy, Faculty publishing practices research

Getting Started

- Institutional knowledge
  - Who are the players?
- Follow the Money
  - Who is funded, what are the sources, how much?
- Interview
  - What people are doing, and what are their challenges?
- Learn the basics

Learn the Basics

- Attend seminars at your institution.
- Online training
  - NCBI materials - http://www.ncbi.nlm.nih.gov/About/outreach/courses.html
  - Bioinformatics Tutorials (BITS) - http://libraries.mit.edu/tutorials/video/index.html
- MIT OpenCourseWare - http://ocw.mit.edu/OcwWeb/Biology/7-342Fall-2006/CourseHome/index.htm
- Find/Develop Peer Group – eg. MLA's Molecular Biology and Genomics SIG - http://medicine.wustl.edu/~molbio/

Library Role!

http://images.smarter.com/blogs/soxseries.jpg 5/9/09

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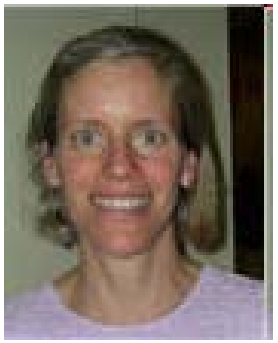
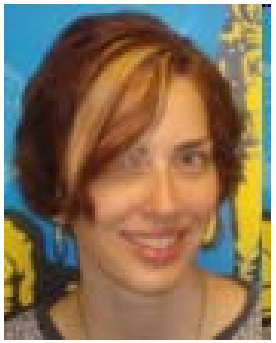
IBG – Past and Present

Courtney Crummett

Tracy Gabridge



Anne Graham



Remlee Green

Erja Kajosalo

Michael Noga

Louisa Rogers

Amy Stout

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Getting Started: Institutional Knowledge

- Individually, Make a list of things (3-5) that you would like to know about your organization? (3 minutes)
- Discuss at table (3 minutes).
- How can find answers to your questions? Group discussion (3 minutes)
- Share results in whole group (5 minutes).

Getting Started: Identifying Opportunities

- Individually, make a list of questions (3-5) that you would ask a professor or researcher in an interview (3 minutes)
- Discuss at table (5 minutes)
- Share with room (5 minutes)

Thank You!

Questions?

Comments?

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