Library-based Bioinformatics Support: Changing Perceptions, Changing Roles

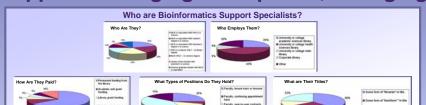
Abstract

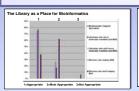
This poster presents a quantitative and qualitative overview of library-based bioinformatics support. Issues to be explored include what do they do and how are they supported: successes reported by library-based bioinformatics programs; and potential barriers to the success of such programs. Data will be presented from three separate entities; an online survey of library-based bioinformatics

Why Bioinformatics in the Library?

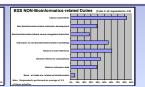
A number of factors were reported concerning the appropriateness of libraries for the base of bioinformatics support services:

- The "neutral" or "central" nature of the library
- Librarians' abilities in terms of information management and instruction
- 4. Institutional "gap" waiting to be filled
- ... the notion that the library is sort of Switzerland, that it doesn't have a strong departmental affiliation, it has, it's at the crossroads of four missions are, education, patient care, research and community involvement, I mean, that's, that's the library in a nutshell. ... The training can not be done effectively in each department, you duplicate a lot of things. The basic access to the kind of information resources that we are trying to promote at this level is best done in some sort of central fashion, we don't have a bioinformatics department here, we don't have another place that really would take ownership of it, and so we were basically opportunistic and said "look, it makes sense to put it in the library". Library director who has hired BSS
- ..when we did the NCBI classes, when I saw the response we were getting 150 or so signing up, that was a huge thing. The other thing was ...there was a lunch meeting, and the NCBI trainers were meeting with faculty, and I was just astounded with the feeding frenzy, that went on, because they were giving them guestions about their research and how they were analyzing data and suddenly you could see the lights going off where they were saving "that just saved me weeks, weeks of data analysis" and so, when I saw that, that was probably the most impressive because I really got it at that point, that, you know, there's a service here, that really could help speed research here on campus. And it's not something that exists presently...as the library in terms of thinking about information, not just bibliographic information, but now we have moved into another area and that's really where as a research institution there's such a huge focus-that we really needed to be part of that in order to provide it." Library director who has hired BSS
- "I think part of their work here is learning, for them, it's learning the librarian language. And because they've done that, they've almost provided a bridge between some of the more scientific faculty into the library and into other resources that the library. not, not just the bioinformatics resources, but other resources as well." Librarian speaking about BSS at her institution
- "In some sense, in the ways that libraries are changing, becoming much more multimedia, and computer-oriented, because that's how we get most of our information now to me it does make sense, but I think we are still in the middle of that conversion. So for a library, I think that, I think it makes sense ... but there are still some people who see it just as a collection of books. that they have no relationship to anymore, all articles are available online, they don't need to go to the library. I do think it makes sense ... libraries are evolving and what they're becoming and growing into, but I think that it still needs to be advertised and kind of promoted as the being such that this is something libraries can really do." Graduate student in a hinscience field
- "The library is a neutral place that "presents" and makes available information and systems that use that information." Library director who has hired BSS
- "The centralized and "neutral" library provides an obvious setting for bioinformatics support. Additionally, libraries are traditionally units that deal with databases and information, so it is a natural match." BSS
- "I think that the library is an appropriate "command center" for bioinformatics training, but it is critical to form partnerships with groups across campus for success." BSS
- "From what I understand of bioinformatics, a large part of that field is understanding and organizing data. Libraries are the logical place to host such expertise since many skills are those already in place in traditional librarianship." Librarian who does not serve genetics-, molecular- or bioinformatics-related researchers
- *Libraries are service-oriented organizations whose main goal is to provide information and information resources to the various constituencies at their respective institutions. Bioinformatics support fits this model quite well." BSS









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Greatest Successes of Library-based **Bioinformatics Support Programs**

A number of successes were reported via interviews and surveys, paralleling those in the literature:

- New clients coming to the library and taking advantage of the bioinformatics (and other services)
- The creation of partnerships with academic faculty, departments, and units
- Integration into the curriculum
- Funding for bioinformatics-related positions or resources

"Developing partnerships within the university and with neighboring institutions. Sponsoring instructional content from internal and external experts for the entire university community." Library director who has hired BSS

in CTSA proposal of library's important role in training." Library director who has hired BSS

"Our program has grown so much in the past 5 years that it is now a 2-person team with the potential to expand even more. It is my understanding we provide more licensed resources to our users than any other institution in the US." BSS

"Integrating into the graduate curriculum with a semester-long bioinformatics course and a vearly overview seminar." BSS

"The creation of a Bioinformatics Interest Group of librarians across several disciplines." BSS

"Invitation to become part of the curriculum this year in biochemistry." BSS

Potential Barriers to the Success of Librarybased Bioinformatics Support Programs

Perceived potential barriers to the success of library-based bioinformatics programs were reported from four main areas:

- 1. Client perceptions of libraries
- Lack of funding 3. Lack of qualified bioinformatics support personnel
- 4. Competition with other bioinformatics-related units at the institution
- "Lack of faculty rank for bioinformatics specialists ignorance among scientists of the
- capabilities of library bioinformatics specialists" Library director who has hired BSS "Being based in the library (the library= books and dust to many people)" BSS
- "Many faculty still view library as a traditional reference service-based institution." BSS
- "Many of the same barriers that exist for any library-sponsored program-what can a librarian possibly teach me that I don't already know? The librarian image is not good for reaching
- out to teach technical information skills that most researchers believe that they already know " RSS
- "Librarians don't have the knowledge and if they had, scientists wouldn't ask librarians," Librarian from library without molecular-related support
- "Ensuring faculty are aware that the librarian can assist them (marketing) and that the librarian is confident in her/his ability to help (training)," Librarian who serves geneticsmalecular- or bioinformatics-related researchers
- "Credibility of the librarian-a science degree isn't the key-the librarian needs to demonstrate value to the researcher. Librarians are already struggling to be relevant." Librarian from library without molecular-related support

Other Survey Findings

80% of directors who have not yet hired a Bioinformatics Support Specialist indicated that the largest barrier to hiring

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Attitudes Toward Service Provision

	Support Specialists (BSS)	Assigned to Researchers	Assigned to Researchers	with BSS	without BSS
A knowledge & understanding of science culture & values can help librarians better meet the information needs of research scientists	4.7	4.7	4.8	4.6	4.5
Laboratory research experience can help librarians understand the scientific method & culture & better meet the information needs of research scientists	4.3	4.2	4.2	4.3	4.0
Librarians must have a degree in science in order to provide successful information services to research scientists	3.1	2.8	2.8	3.1	2.8
It is important for library-based BSS to understand library culture & values	3.6	4.1	4.0	4.0	4.1
It is important for library-based BSS to exhibit a strong service orientation	4.4	4.6	4.6	3.8	4.4
BSS must have laboratory research experience in order to provide successful library-based bioinformatics support services	3.5	3.5	3.0	3.0	2.4
BSS must have at least a masters-level degree in science in order to provide successful library-based bioinformatics support services	3.5	3.0	3.4	3.4	2.9
BSS must have at least a PhD or equivalent degree in science in order to provide successful library-based bioinformatics support services	2.4	2.1	2.5	2.8	2.1
BSS must have a library/information science-related degree in order to provide successful library-based bioinformatics support services	2.2	2.9	2.6	2.4	2.9
BSS must have a library/information science-related degree in order to understand & fit into library culture	2.4	2.9	2.6	2.1	2.9
Librarians without a formal science background can provide basic but useful library-based bioinformatics support services and/or instruction	3.2	3.8	3.4	3.8	3.8
1=Strongly disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly agree					

Related Literature

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