

INTRODUCTION: This poster addresses the iConference themes of "What is 'engagement' in a research institution?" and "personal information management." It presents findings from a qualitative study of information behaviors in a population of scientists and clinicians that seeks to understand how the respondents search for information, what sources of information they use, and what decisions they make around the management of their information resources. It is specifically a project that exemplifies the iConference review criterion on "multi- (or inter- or cross-) disciplinarity" in both its research team and its subject participants. It also speaks to the iConference review criterion of "addressing ways in which scholarly work and educational activities can connect to constituencies beyond the iSchool community."

The poster reports on work currently underway by an interdisciplinary team of investigators who are studying collaboration behaviors among personnel in a large multi-disciplinary clinical research environment, as part of an NIH-funded initiative in translational research. This poster is a by-product of the larger work; the larger work is focussed on two main research questions: what are the key social issues that researchers face when attempting to form collaborations and how do they currently solve these problems?

LITERATURE REVIEW: Evidence from systematic reviews, reviews of the literature and methodologic papers suggest that ethnographic and qualitative studies of interdisciplinary and multidisciplinary populations of medical scientists and clinicians are rare (1, 2, 3, 4, 5, 6, 7, 8). The literature on information behavior in medicine and science consists largely of descriptive surveys of clinicians–primarily physicians and nurses—at work in patient care settings (9, 10, 11, 12, 13). Only a few information behavior studies have specifically targeted interdisciplinary and multidisciplinary groups in biomedicine (14, 15, 16, 17, 18).

POPULATION: As part of a large NIH-funded research project on collaboration in the biomedical sciences, the project team conducted 27 semi-structured interviews with faculty members, including both clinicians and bio-medical researchers, purposively sampled from the six health sciences schools at the University of Pittsburgh, a major public research university (i.e., a School of Dental Medicine, a School of Health and Rehabilitation Sciences, a School of Medicine, a School of Nursing, a School of Pharmacy, and a School of Public Health,). These individuals held either a professional medical doctorate or a research doctorate, and were members of collaborative research teams doing interdisciplinary research. The interviews focused on these individuals' current and previous collaborations, and on their problem solving activities, particularly in the area of research and publishing. The sample was selected to represent a range of fields (e.g., basic, clinical, or translational science) and different levels of academic appointment (e.g., entry-level, senior scientists, etc.), backgrounds, faculty rank, and gender.

METHODS: A five-member team--four faculty researchers and one staff member--from the University's iSchool, its Business School, and its School of Dental Medicine conducted the interviews individually in informal contexts (e.g., in the cafeteria over lunch, or over coffee in a faculty office). The interviews were semi-structured in order to garner specific information but also to allow for a frank exchange and conversation on faculty activities. The team members conducting the interviews took notes, and transcribed their findings immediately after each interview; the notes were then reviewed for themes of engagement with information tools and systems, and strategies for information management and dissemination. The researchers also collected the current *curricula vitae* for the scientists/clinicians, and mined these documents for additional background information about their careers.

FINDINGS: The poster presents the findings from four of the 23 questions asked by the interviewers:

- Can you tell me what, in general, you do when questions come up during your research that you cannot answer?
- Thinking about a specific event, was there an incident when you found a particularly good answer to a difficult question particularly quickly?
- Which information resources/services outside of your department do you use?
- What biomedical informatics tools (of any kind) are you using in your research right now?

These findings provide a snapshot of their information-related behaviors, illustrated with quotations from their interviews; the subjects' own words provide a picture of the information problems that these scientists and clinicians encounter. In future, these findings may inform the planning for the development of information management tools that speak to some of the problems that these individuals described to the investigators.

ACKNOWLEDGMENTS: This research is supported in part by grant number UL1 RR024153 from the National Center for Research Resources (NCRR), a component of the NIH Roadmap for Medical Research. This study was approved by the University of Pittsburgh Institutional Review Board (#0612065). Other work from this project was reported at the IEEE eScience 2008 conference (19), and additional work is under review for ACM Conference on Organizational Computing and Groupware Technologies (GROUP2009).

REFERENCES:

- 1. Dawes M, Sampson U. Knowledge management in clinical practice: a systematic review of information seeking behavior in physicians. *Int J Med Inform.* 2003 Aug;71(1):9-15.
- 2. Detlefsen EG. The information behaviors of life and health scientists and health care providers: characteristics of the research literature. *Bull Med Libr Assoc.* 1998 Jul;86(3):385-90.
- 3. Haug JD. Physicians' preferences for information sources: a meta-analytic study. Bull Med Libr Assoc. 1997 Jul;85(3):223-32.

- 4. Coumou HC, Meijman FJ. How do primary care physicians seek answers to clinical questions? A literature review. *J Med Libr Assoc.* 2006 Jan;94(1):55-60.
- 5. Revere D, Turner AM, Madhavan A, Rambo N, Bugni PF, Kimball A, Fuller SS. Understanding the information needs of public health practitioners: a literature review to inform design of an interactive digital knowledge management system. *J Biomed Inform.* 2007 Aug;40(4):410-21.
- 6. 12. Lomax EC, Lowe HJ. Information needs research in the era of the digital medical library. Proc AMIA Symp. 1998:658-62.
- 7. Forsythe DE. Using ethnography to investigate life scientists' information needs. Bull Med Libr Assoc. 1998 Jul;86(3):402-9.
- 8. Gruppen LD. Physician information seeking: improving relevance through research. Bull Med Libr Assoc. 1990 Apr;78(2):165-72.
- 9. Andrews JE, Pearce KA, Ireson C, Love MM. Information-seeking behaviors of practitioners in a primary care practice-based research network (PBRN). *J Med Libr Assoc.* 2005 Apr;93(2):206-12.
- 10. Bennett NL, Casebeer LL, Kristofco R, Collins BC. Family physicians' information seeking behaviors: a survey comparison with other specialties. *BMC Med Inform Decis Mak.* 2005 Mar 22;5:9.
- 11. Forsythe DE, Buchanan BG, Osheroff JA, Miller RA. Expanding the concept of medical information: an observational study of physicians' information needs. *Comput Biomed Res.* 1992 Apr;25(2):181-200.
- 12. Dorr DA, Tran H, Gorman P, Wilcox AB. Information needs of nurse care managers. AMIA Annu Symp Proc. 2006:913.
- 13. Tenopir C, King DW, Bush A. Medical faculty's use of print and electronic journals: changes over time and in comparison with scientists. *J Med Libr Assoc*. 2004 Apr;92(2):233-41.
- 14. Grefsheim S, Franklin J, Cunningham D. Biotechnology awareness study, Part 1: Where scientists get their information. *Bull Med Libr Assoc.* 1991 Jan;79(1):36-44.
- 15. Grefsheim SF, Rankin JA. Information needs and information seeking in a biomedical research setting: a study of scientists and science administrators. *J Med Libr Assoc.* 2007 Oct;95(4):426-34.
- 16. Korjonen-Close H. The information needs and behaviour of clinical researchers: a user-needs analysis. *Health Info Libr J.* 2005 Jun;22(2):96-106.
- 17. Bird G, Heekin JM. Survey on the use of information sources in the field of aging. Bull Med Libr Assoc. 1994 Jan;82(1):30-5.
- 18. Wessel CB, Tannery NH, Epstein BA. Information-seeking behavior and use of information resources by clinical research coordinators. *J Med Libr Assoc.* 2006 Jan;94(1):48-54.
- 19. Spallek H, Schleyer T, Butler BS. Good partners are hard to find: the search for and selection of collaborators in the health sciences. In: *Proc. eScience 2008*. Los Alamitos: IEEE Computer Society; 2008. pp. 462-7.