Development of a post-master's online certificate in health sciences librarianship*† EC

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INTRODUCTION

Health sciences librarians function in environments that are constantly undergoing rapid and drastic changes in a range of divergent arenas, including scientific, technological, social, political, and financial changes. To keep up with these changes, health sciences librarians require lifelong learning opportunities. The Medical Library Association (MLA) recommends that library educators provide opportunities and programs to meet the librarians' need to "retool their skills" throughout their professional careers [1].

In this brief communication, the authors describe the process of developing and implementing an online, fifteen-credit, post-master's certificate of advanced study in health sciences librarianship (HealthCAS) and the steps we followed during this process.

BACKGROUND

The University of Pittsburgh Health Sciences Library System (HSLS) supports the educational, research, clinical, and service activities of the health sciences community of the University of Pittsburgh and the University of Pittsburgh Medical Center (UPMC), through innovative information resources and services. The School of Information Sciences (SIS) at the University of Pittsburgh is one of the nation's pioneering schools in the education of information professionals, with a history that reaches back more than 100 years. Its master of library and information science (MLIS) degree program is ranked tenth in the nation by *U.S. News & World Report* [2]. Currently, more than 800 students are enrolled at SIS.

In 2001, SIS began offering an online MLIS degree program, called FastTrack MLIS. Since its inception, FastTrack has enabled more than 400 students from 35 states to work toward their MLIS degrees. The FastTrack program is designed so that students can advance through the program in a cohort, replicating the on-campus environment. This cohort design allows students to interact with each other and with the faculty, even though the program is delivered asynchronously. The addition of the HealthCAS augmented the offerings of this very successful online degree program.

In December 2008, HSLS and SIS partnered to apply for funding from the Institute of Museum and Library Services (IMLS) to support the development and implementation of the HealthCAS program. The 3-year grant, for $991,311, was awarded in June 2009. The grant from IMLS supported the costs of curriculum development and evaluation, online course delivery infrastructure, and student recruitment. In addition, the grant provided tuition and travel scholarships for students throughout the United States for the first 2–3 years of the program. Librarians who desire entry- to mid-level health sciences library positions, seek additional knowledge and skills, or practice outside the health sciences and wish to pursue entry into the specialty; hospital librarians in rural and remote areas who do not have ready access to continuing education programs; and underrepresented minority librarians in the health sciences were identified as the primary audience for the program.

CURRICULUM DEVELOPMENT

There were many critical steps in developing the online fifteen-credit HealthCAS program. These included course development, selection of instructors, instructional design support, and marketing and recruitment of students.

After a petition to the University of Pittsburgh for permission to offer the HealthCAS program was approved, a task force of HSLS librarians participated in a series of brainstorming sessions to identify topics to be covered in the curriculum. The MLA educational policy statement, *Competencies for Lifelong Learning and Professional Success*, was used as a basis for curriculum development [1]. Topics were then grouped into appropriate courses to be offered over three terms (Table 1, online only). The curriculum consists of the following courses:

■ Term I: "The Healthcare Environment" (4 credits): Examines the health care environment; the main players; and internal and external factors such as finances, regulations, and legislation as they affect and drive the provision and delivery of library and information services in this environment.
■ Term II: "Collections and Resources" (4 credits): Examines selection, collection management, and access to print and electronic information resources in the health care environment.
■ Term III: "Reference Services and Instruction: (4 credits): Reviews reference services, the reference interview, expert literature searching, teaching and instructional methods, embedded librarianship, PubMed, and Medical Subject Headings (MeSH), with

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Table 2
Certificate of advanced study in health sciences librarianship (HealthCAS) course evaluations* (n=30)

	Number	Percent
Would you recommend this course to other students?		
Definitely not	1	(3.3%)
Probably not	2	(6.7%)
Probably yes	8	(26.7%)
Definitely yes	19	(63.3%)
Would you recommend this instructor to other students?		
Definitely not	0	(—)
Probably not	3	(10.0%)
Probably yes	11	(36.7%)
Definitely yes	16	(53.3%)

* Mean evaluation, averaged over all courses (3) and all students (12). Not all students completed evaluation forms for all courses.

special focus on evidence-based medicine, systematic reviews, and meta analyses.

■ Individual Research Project (3 credits): Each student plans and completes a 3-credit applied research project. This research project runs throughout the entire year of the HealthCAS program.

The courses were approved by the voting faculty of the library and information science program, in accordance with the SIS policies for curricular development.

The program was designed to be delivered to students using a combination of web-based, asynchronous course delivery and synchronized real-time conferencing for interactive sessions between instructor and students, one introductory meeting on location in Pittsburgh, and a capstone event immediately prior to MLA's annual meeting. Even though the program was designed to be primarily asynchronous, every effort was made to ensure that the communication flow between teacher and learners, and between learners themselves, remained seamless.

An essential part of the curriculum is the cohort design, modeled after the successful SIS FastTrack program. In this model, each student is part of a "cohort," a community of students who travel through the program together. The cohort allows the students to share valuable experiences both intellectually and socially. As part of cohort building, an in-person campus visit is required during the first term, usually four to five weeks after the course begins. The students spend two and a half days in Pittsburgh, interacting with each other, the program team, and the course

instructors. The visit includes face-to-face instruction sessions, as well as several social activities. The capstone event is held at the end of the HealthCAS program year and immediately prior to the MLA annual meeting in May. The capstone is both a graduation ceremony and an opportunity for the students to present the results of their research.

A critical element in the implementation of the program was the selection and development of the instructional faculty. To encourage collaboration and assure efficiency in the program administration, only HSLS librarians were recruited for the course. Identification and selection of instructors were based on a survey of HSLS librarians about their interests in developing course material for HealthCAS, as well as their interest in and availability for teaching in the program. Nine librarians—three instructors per term of study—were selected as faculty. Additionally, one HSLS librarian and two SIS faculty members instructed and guided students in the CAS individual research project. The credentials of the HSLS instructors were reviewed by the voting faculty of the library and information science program at SIS. They were granted the rank of adjunct professorship, based on evidence of relevant professional experience and expertise in medical library and health information sciences.

Course instructors worked with the university's Center for Instructional Design and Distance Education (CIDDE) to develop the online coursework. CIDDE consultants met regularly with the instructors and program principals to facilitate collaborative approaches to the design and delivery of the courses. The HSLS instructors received training in principles of instructional design, online teaching, and cohort building and extensive orientation to CourseWeb (Blackboard at the University of Pittsburgh). HealthCAS faculty also worked with instructional designers and members of the SIS faculty.

Another critical step was developing a marketing plan for student recruitment. Working in concert with marketing staff at SIS and the University of Pittsburgh, the program team devised a marketing strategy based on targeted mailings, the use of online discussion forums, and a dedicated website. To establish a "brand" for the program, it was decided to refer to the program consistently as "HealthCAS." Marketing efforts focused mainly on distributing print marketing

Table 3
Sample student comments from HealthCAS course evaluations

	Sample comments
About the instructors	"Each of the instructors was very knowledgeable about their course section."
	"Responsive to student questions, enthusiastic about course content."
	"The instructors' major strengths are that each of them practice daily what they are teaching."
	"I would have liked more feedback on my assignments and discussion questions."
About the course	"The type of assignments provided very useful and timely information."
	"I liked the real world examples (approval plans, ILS/OPAC discussions, ILL visit, etc.) and felt that much of what we learned was immediately applicable."
	"The course readings were fabulous."
	"I would suggest to *not* use group projects in a distance education course. This was very difficult to implement."
	"A few of the modules and assignment instructions were a bit disorganized or confusing."

materials, posting messages to various professional email discussion lists, releasing the HealthCAS website for public viewing <http://www.ischool.pitt.edu/health/>, and conducting a series of virtual ''open house'' events in January 2010.

Online applications and admissions to HealthCAS began in December 2009 and were completed in February 2010. In response to recruitment efforts by SIS and the program team, thirty-three applications were submitted to the HealthCAS program. The program team conducted a thorough review of the completed applications and eventually admitted twelve students who met all the qualifications to the first cohort. To qualify for the HealthCAS program, applicants are required to possess a master's degree from a program accredited by the American Library Association or a master's degree in information science with a quality point average of 3.00. Selection criteria for admission to the program include 3 letters of recommendation from individuals who are in a position to evaluate the applicant's academic performance or potential as a health sciences library professional and a professional portfolio of 3 items that provide evidence of presentations, publications, website development, or other materials. In addition, applicants are required to submit a statement of intent outlining their career goals in the health care environment and listing any relevant experience in health sciences or health sciences libraries, or other relevant work. Additionally, every applicant must supply an explanation of why they believe they will succeed as an independent learner in the online CAS program as well as explain contributions they expect to make to the program [3].

OUTCOMES

The first cohort of students enrolled in the program included librarians with an average of seven years of professional library experience. Eight of the librarians in the first cohort came from academic health center libraries; three were employed in health-related library positions in non-health-related institutions, and one was at a general academic library. Geographically, the students were distributed throughout the country; four students were from the East, three from the Midwest, three from the South, one from the Southeast, and one from the Northwest.

All twelve of the students completed the HealthCAS program. It is notable that every student's applied research project was accepted as a poster for MLA '11 in Minneapolis. Students also presented the results of their projects at the capstone event held at the University of Minnesota Bio-Medical Library (Appendix B, online only).

The majority of students surveyed at the end of each course gave positive evaluations (Tables 2 and 3). The students acknowledged the instructors' strong subject expertise and commented that the instructors were enthusiastic and approachable. The majority of students agreed they would recommend the courses to others. Students noted small problems with some assignments and with course flow in part of one of the courses. The biggest negative assessment was of the group projects assigned in some courses, as students found it difficult to coordinate their schedules and balance the work assignments. Based on feedback from the students, HealthCAS faculty implemented changes in some assignments, reexamined the use of group projects, and strengthened or removed some topics in the curriculum as suggested by the students.

DISCUSSION

Compared to an MLIS program such as FastTrack where the focus is on advanced core topics in academic courses, HealthCAS offers a comprehensive specialty program grounded in the realities of practical librarian interactions with diverse user groups in the health care environment.

Moreover, a program such as HealthCAS not only offers experienced health sciences librarians the opportunity to enhance their teaching skills and share their knowledge and skills with fellow librarians, it also benefits the library. At HSLS, many of the instructors are also liaison librarians to the university's schools of the health sciences, and they are now better positioned to expand their instructional support into the online environment in their school.

CONCLUSION

This brief communication described the development and implementation process to offer an online certificate of advanced study in health sciences librarianship. The HSLS faculty librarians and project team successfully implemented this yearlong, fifteen-credit program that is currently in its second year. The unique partnering of a school of information science and a health sciences library was the key to the success of the program. While other programs are available to librarians to retool their skills—such as continuing education courses offered by MLA or the one- to two-year Associate Fellowship Training Program at the National Library of Medicine, which accepts only about five new fellows each year—no programs of advanced study are aimed specifically at the needs and requirements of health sciences librarians or health sciences library managers. None of the programs in existence offer a learning experience as rich or as thorough as the one offered in Pittsburgh.

Looking forward, a challenge will be to locate support for student scholarships and financial aid strategies after the end of the IMLS grant. Even with funding uncertainty, the program is well positioned to continue into the future. It is clear that HealthCAS helps to fulfill the MLA recommendation that librarians be provided with a ''range of programs and opportunities that meet needs throughout a professional career, rather than focus solely on the master's degree'' [1].

ACKNOWLEDGMENTS

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