Request for Authorization to Establish a New Degree Program

Submitted by:

The Faculty of the School of Information and Library Science
at the University of North Carolina at Chapel Hill

Submitted to:

Vice President for Academic Affairs
UNC General Administration

October 6, 2000

Resolved

By the Faculty of the School of Information and Library Science at the University of North Carolina at Chapel Hill on March 22, 2000.

That we believe the role of information in our knowledge-based society is crucial and ever-expanding, and the School of Information and Library Science at the University of North Carolina is prepared to shape that role.

That we believe a Bachelor of Science in Information Science will prepare students for excellent career opportunities in almost any industry, in the area of analyzing, processing, developing and managing information and information tools in our knowledge-based economy.

That we believe this Bachelor of Science in Information Science will offer world-class education for students.

Therefore, know that we support this Request for Authorization to Establish a New Degree Program, and endorse the plans herein.

Constituent Institution: University of North Carolina at Chapel Hill

API Discipline Specialty Title: Information Sciences and Systems

API Discipline Specialty Number: 0702 Level: Bachelor's

Specify Type of Degree: B.S.

Propsed program is at a more advnaced level than those previously authorized: No

Proposed program is in a new discipline division: No

Program Tracks (if any): None

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Executive Summary

Information science is the study of cognitive, social, technological and organizational roles of information in all its forms. The importance of information science has grown, and will continue to grow as society increases its reliance on creating, storing, transmitting, securing, communicating, evaluating and managing information.

The Bachelor of Science in Information Science is proposed as a new undergraduate major at UNC-CH. It is expected that 60 students will enter the major in the fall semester of its first year, as juniors; that the major will expand to 120 in the second year; and that it will reach its maximum enrollment of 180 students in the third year of implementation.

The BSIS will consist of 10 courses (30 credit hours). Students will identify a concentration area from those available when they enter the Major, or propose an alternate concentration area. The three concentration areas to be offered initially are:

i. Information Technology, emphasizing concepts and principles for understanding, implementing, evaluating, selecting and integrating ever-changing technologies for information development, processing, storage, transmission and use.
ii. Management of Information Resources, preparing students to manage the information resources of their organizations.
iii. Information Design, focusing on effective means of communication and knowledge discovery through effective design of information systems and services

Each concentration will have specific required courses, and all will build on a common core. Service learning projects are encouraged. An honors thesis option will be available beginning in the third year of implementation.

The BSIS degree will expand the size of the SILS faculty, space needs and budget by approximately 40%, while doubling the size of the SILS student body.

I: DESCRIPTION OF THE PROGRAM

A. Describe the proposed degree program and associated degree program tracks

The Bachelor of Science in Information Science is a proposed undergraduate major. The BSIS will prepare students for careers of all types related to information, or for graduate study in information science or related disciplines.

Information science is the study of cognitive, social, technological and organizational roles of information in all its forms. As embodied in this degree program, information science rests on three foundational pillars. The first pillar is content: the substance of the information being created, communicated, stored, and/or transformed. Information scientists are particularly concerned with the representation and organization of content/knowledge. The second pillar is the people who interact with the content; they may be creators of information, recipients of information, or intermediaries in the communication process. Information scientists are particularly interested in the processes by which people create, transform, seek, and use information. The third pillar is the technology used to support the creation, communication, storage, or transformation of the content. Of particular interest to information scientists are information storage and retrieval systems and the computer networks that can be used to transmit information. Each concentration of the proposed degree program varies in its emphasis on these three pillars, but each relies on all three to serve the overall goals of information science.

Historically, information science emerged as an academic discipline in the first half of this century, as an expansion of the field of documentation arising through the application of computers to the organization of collections of documents. In the U.S., information science is usually linked with professional schools of librarianship, based on their common interests in information storage and retrieval. Contemporary information science also has strong ties to computer science, business administration, communication, psychology, sociology, economics and other disciplines.

Students will apply for entry to the major in the fall semester of their sophomore year, and start the major at the beginning of their junior year. They will choose from three concentrations described here, or propose their own concentration (to be approved by the SILS Undergraduate Committee). Specific requirements for the concentrations (discussed below) will be subject to revision over time.

i. Information Technology. This concentration will emphasize concepts and principles for understanding, implementing, evaluating, selecting and integrating technologies for information storage, transmission and use.
ii. Management of Information Resources. This concentration will prepare students for important roles in managing the information resources of their organizations, especially those organizations that deal with information as a commodity.
iii. Information Design. This concentration will focus on effective means of communication and knowledge discovery through appropriate information design.

All three concentrations share a common set of core courses, ensuring all students will have a common background in information science.

B. List the educational objectives of the program

The BSIS will build on the strong liberal arts education that is common to all UNC-CH undergraduates, in order to shape information professionals who will be active and informed participants in the continuing evolution of the Information Age.

Graduating students will:

- Understand the many ways in which information can be created, communicated, stored, and/or transformed, in order to benefit individuals, organizations, and society at large.
- Possess practical skills for analyzing, processing and managing information and developing and managing information systems in our knowledge-based society. They will possess problem solving and decision-making skills, be able to effectively utilize information tools, and be able to take a leadership role in our information economy.
- Comprehend the value of information and information tools, and their role in society and the economy.
- Be prepared to evaluate the role of information in a variety of industries, in different organizational settings, for different populations, and for different purposes.
- Maintain a strong sense of the role of information in society, including historical and future roles.

Opportunities for employment of BSIS graduates are excellent, as discussed further below. See Appendix A for a listing of potential job opportunity areas.

C. Indicate the relation of the program to other programs currently offered at the proposing institution, including the common use of: (1) courses, (2) faculty, (3) facilities and (4) other resources

Three academic disciplines at UNC-CH that are most closely related to information science are business administration, computer science and journalism. The BSIS will allow (and encourage) students to take courses, concentrations or minors related to these areas, as well as others.

The points that distinguish information science from these closely-related disciplines are:

i. Information science studies the role of information in all organizational settings, for all cultures, and for all application areas. Other disciplines tend to be specific to types of organizations, cultures or application areas.
ii. In information science, evaluation of information systems emphasizes the perspective of the user, more than system-based performance or organizational outcomes such as profit.

iii. Information science studies information in its many roles, rather than focusing on the roles themselves, e.g., it focuses on the use of information to support problem solving rather than focusing on problem solving itself.

The BSIS will draw on other academic units at UNC-CH to strengthen ties to professional domains. The primary means will be through (a) incorporating courses from other UNC-CH units in BSIS concentrations, and (b) providing opportunities for students to pursue minors or dual majors in other units.

(1) Courses. The *Degree Requirements* section below lists specific courses from other units that will be required or electives for BSIS majors.

(2) Faculty. Some SILS faculty already have adjunct appointments in other UNC-CH academic units. Additional adjunct or joint appointments or other faculty-level cooperation are envisioned. However, all of the new courses proposed in this Request will be offered by SILS faculty.

(3) Facilities. SILS currently houses state of the art laboratories and classrooms. These will be expanded to support the BSIS major. Because of the specialized technology needs of information science, there are no plans to integrate these facilities extensively with other campus facilities.

(4) Other Resources. As mentioned in *Degree Requirements* below, some concentrations for the BSIS will be integrated with course offerings in other academic units. Cooperation for advising and course enrollment will be required to facilitate students' success.

D. Identify similar programs offered elsewhere in North Carolina. Indicate the location and distance from the proposing institution. Include both publicly supported and private institutions of higher education.

No program offers an undergraduate major in information science in North Carolina, including public and private institutions. Although there are programs in "computer and information science" or "management information systems" at the undergraduate and graduate level, their disciplinary homes (in computer science and business, respectively) make them substantially different than the BSIS propsed here (see section I.C. above).

SILS is one of few academic units in the University system that offers degrees for information professionals that are accredited (by the American Library Association). Two other ALA-accredited programs for MS degrees in Library Science are available in North Carolina, at North Carolina Central University and at UNC-Greensboro. In addition, NCCU offers a Masters' Degree in Information Science. However, neither of these programs has any significant course offerings for undergraduates, such as SILS' undergraduate minor in information systems or the proposed major.

The importance of new degree programs related to information science has been recognized at other UNC institutions. At UNC-Charlotte, a new MS in Information Technology has been developed (information is available online at http://www.sit.uncc.edu). This degree, in the School of Information Technology, is taught primarily by faculty trained in computer science or business. It is more tools and skills based than the BSIS, with a foundation in business systems rather than information science.

At NC State, a new concentration in e-commerce is offered as part of the Master of Science in Management and Master of Science in Computer Networking. Like UNC-C's degree, the concentration is taught by faculty primarily from computer science and business. This degree includes a strong foundation in legal issues, commerce issues and business issues.

The BSIS will be a unique degree in North Carolina, with fewer than 10 comparable degrees at other institutions in the United States. The SILS faculty believes the proposed BSIS degree will benefit from the reputation of the existing SILS degrees, and rapidly gain high visibility and status. Graduate degrees in areas related to the BSIS, such as those offered by SILS, at UNC-C and NC State will all benefit from BSIS graduates who enter their graduate programs.

E. List the names of institutions with similar offerings regarded as high quality programs by the developers of the proposed program

In 1999, *US News and World Report* ranked programs in "library science." These rankings included all the programs regarded as similar to SILS' Master of Science professional degrees (a total of 48 academic institutions). Among the 48, SILS tied for first place with the University of Illinois at Urbana-Champaign. (The full rankings are online at http://www.usnews.com/usnews/edu/beyond/bcinfos.htm).

Among the top 20 programs, four have undergraduate majors. The proposed BSIS has a similar intellectual foundation to these other majors, but a substantially different implementation. The top-20 institutions with highly regarded majors most closely related to the proposed BSIS are:

i. Syracuse University, which offers a BS in Information Management and Technology (described online at http://istweb.syr.edu/academic/degrees/ugrad/index.html). This program has substantially more credit hours than the proposed BSIS major (51 credits) and starts at the freshman level.

ii. The University of Pittsburgh, which offers a BS in Information Science (described online at http://www.sis.pitt.edu/~dist/bsis/bsis.html). Because Pittsburgh divides its School of Information Sciences into two departments (the Dept. of Library and Information Science, and the Dept. of Information Science and Telecommunications), their major does not have as much involvement with information organization and information use as our proposed BSIS does.

iii. Drexel University, which offers an undergraduate major in Information Systems (described online at http://www.cis.drexel.edu/undergrad/index.html). This is a 5-year program with a required co-op, but otherwise is similar in emphasis to the proposed BSIS.

iv. Florida State University, which offers a major and minor in Information Studies (described online at http://www.fsu.edu/~lis/bsis/index.html). This program offers similar concentrations and structure to our proposed BSIS.

Among those institutions, UNC-CH is the most highly ranked overall, compared to both private and public institutions. An important structural difference between the proposed BSIS and the other programs mentioned above is the UNC-CH perspectives requirements. At the other institutions, students enter courses for the major as early as their first semester freshman year. The BSIS is designed for students to start in their junior year, after completing most of the BSIS-specific perspectives requirements.

F. List other institutions visited or consulted in developing this proposal. Also list any consultant reports, committee findings, and simulations (cost, enrollment shift, induced course load matrix, etc.) generated in planning the proposed program

A variety of constituencies have been consulted in the process of developing the current plans for the BSIS. Notably, input and support have been received from representatives of all four of the undergraduate programs described in I.E. Dr. Ray von Dran, Dean, School of Information Studies, Syracuse University, served as a consultant to these planning efforts. He evaluated the program plans in detail and met with the SILS faculty in mid-February to review his findings. Additional letters commenting on the plans (see Appendix B) have been received from:

Dr. Jane Robbins, Dean, School of Information Studies, Florida State University,
Dr. Thomas Childers, Professor and Associate Dean, College of Information Studies and Technology, Drexel University, and
Dr. Ida Flynn, Director, Undergraduate Program, School of Information Sciences, University of Pittsburgh.

During SILS' recent graduate program reviews (one by a team from the ALA Committee on Accreditation and one by a team appointed by the UNC-CH Graduate School), a variety of faculty members from other institutions and practitioners in library and information science were asked to consider the effects of an undergraduate major on the graduate programs.

Input was also received from potential employers of BSIS graduates. A focus group of potential employers was convened in March, facilitated by Dr. Evelyn Daniel. Suggestions from this group have been used to refine the program plans, and are summarized in Appendix C.

The development of a new program of this scale also requires careful resource planning. Appendix D includes the current and planned course load matrix.

G. Indicate how the proposed new degree program differs from other programs like it in the University. If it is a program duplication, why is it necessary or justified? If it is a first professional or doctoral degree program, compare it with other similar programs in public and private universities in North Carolina, in the region and in the nation.

The BSIS will not duplicate any existing program at UNC-CH, and has minimal overlap with existing programs.

Compared to the undergraduate major in Mathematics, with an emphasis on Computer Science (which may become a separate major in the future):

i. The BSIS includes a strong background in management, social and ethical issues of information use, while CS tends to focus on principles underlying computer systems design and implementation.
ii. The BSIS emphasizes the *use* of contemporary information tools, while CS tends to focus on the design and programming of such tools.
iii. The BSIS emphasizes aspects of applications of information systems not found in most CS curricula (e.g., information system use and management). The BSIS does not focus on topics central to the CS curriculum such as (i) understanding algorithms analysis, theory of computability, computer architecture, and so forth and (ii) extensive training in structured software development.
iv. The BSIS requires fewer mathematics courses as entry requirements, while CS requires a much more rigorous grounding in mathematics, that is (currently) 3 semesters of calculus.

Compared to the undergraduate major in business administration:

i. The BSIS is focused on information use in all types of settings, including government, non-profit and voluntary organizational settings. Business tends to focus on for-profit business settings.
ii. The BSIS focuses on user-oriented outcomes (such as relevance, information seeking and information use), instead of organizational outcomes (such as profit, efficiency and materials use).
iii. The BSIS requires significant training in information system applications, but does not require training in more specialized management topics, such as accounting, operations management, and human resources.

Compared to the undergraduate major in journalism and mass communications:

i. The BSIS students will have strengths in a wide variety of areas, while journalism students tend to be especially strong in visual or written communication.
ii. The BSIS is not focused on a specific profession, while journalism prepares professional journalists and thus requires all students to master the key skills of that profession (e.g., news writing).

iii. The BSIS emphasizes design and evaluation based on the individual information needs of users, while journalism tends to emphasize design and evaluation based on organizational needs such as public relations, community awareness or profit.

The BSIS will provide a new major for UNC-CH undergraduates to prepare for employment and educational opportunities related to information in all settings. Other majors at UNC-CH partially cover some of the emphases found in the BSIS, but the overlap is minimal.

II: JUSTIFICATION FOR THE PROGRAM

A. Narrative statement. Describe the program as it relates to:

1. ***the institutional mission***
2. ***overall state plans (higher education and service programs)***
3. ***student demand (NOTE: for graduate, first professional and baccalaureate professional programs, cite manpower needs in North Carolina and elsewhere.)***
4. ***the strengthening of the existing undergraduate and graduate academic programs of your institution.***

The institutional mission

> "The mission of the University is to serve all the people of the State, and indeed the nation, as a center for scholarship and creative endeavor. The University exists to expand the body of knowledge; to teach students at all levels in an environment of research, free inquiry, and personal responsibility; to improve the condition of human life through service and publication; and to enrich our culture" (UNC-CH Faculty Handbook, page 6).

As a top-ranked school within a prestigious research university, SILS has made significant contributions toward fulfilling the University's mission. SILS offers world-class education at the master's and doctoral levels and the faculty are very productive in "expanding the body of knowledge" in information and library science.

The School has recently begun to address the needs of the UNC-CH undergraduate population by introducing a strong undergraduate minor in information systems. By expanding its role in undergraduate education to include a Bachelor of Science in Information Science degree, the SILS faculty believes it can further help UNC-CH to achieve its mission. This degree will be the only one in the state, and one of few in the nation, to specifically prepare undergraduate students for work and life in the emerging information age. By implementing such a program in a research university, these students will receive the additional benefit of being involved in faculty research during their undergraduate careers.

Overall state plans

North Carolina is already a national leader in technology- and information-related industries, and has the potential for increased excellence if the state's population is appropriately educated. The proposed BSIS can play an important role in helping North Carolina achieve its full potential in the new information-based economy.

Learning about how information tools, concepts and design affect everyday life is a strong need throughout the state. At public and private institutions of all types, from schools to government offices to businesses of any size, people are changing the way they work, live and learn. The increased role of information technology, such as the PC and the Internet, is only part of the picture. In addition, citizens of the future need to be aware of how information can be used to

further their goals, i.e., how to find and apply information in a diversity of contexts. The BSIS degree is designed specifically to position UNC-CH graduates to take a leadership role in this future.

Student demand

It is expected that student demand for the BSIS will meet and possibly exceed demand for the undergraduate minor in information systems currently offered by SILS. The minor in information systems has been very well received on campus. Admission is extremely competitive; each semester, highly qualified undergraduates apply for admission to the minor, but only about 40% are accepted due to the relatively small size of the minor (about 70 students). SAT and GPA scores of minors are well above the campus mean, and the minor draws students from nearly every major on campus. SILS has received many inquiries from minors and others about the possibility of an undergraduate major. We anticipate that the BSIS, like the minor, will be extremely competitive, and fully subscribed. Enrollment in the BSIS will be limited to approximately 180 students, as described in section B below.

Job prospects for BSIS graduates are outstanding. There is a large amount of evidence, both anecdotal and objective, that indicates that there is and will continue to be a large demand for graduates trained in information science. A survey conducted jointly by Virginia Tech and the Information Technology Association of America[1] indicates a severe shortage of workers in information technology – close to 350,000 current vacancies nationwide. Of the 532 industry respondents, 78% indicated that they found it "very difficult" or "somewhat difficult" to hire workers in IT professions. In addition, 91% indicated a key strategy for them to address the IT personnel shortage was to simply "hire more employees." The ITAA also sponsored a study of the skills needed by IT workers in the new economy.[2] They found that "the demand for IT workers is large and growing. Employers will attempt to fill 1.6 million new IT jobs in 2000." Technical support skills, Web-related skills, and database development skills are among those areas most in demand, and four-year undergraduate education was the highest-rated method of pre-hire skill acquisition methods.

In addition to data from the ITAA, independent data from the federal government corroborates the need for IT workers. Projections from the Bureau of Labor Statistics indicate that "between 1996 and 2006, the U.S. will require more than 1.3 million new IT workers… to fill newly created jobs (1,134,000) and to replace workers who are leaving these fields (244,000)."[3] Computer engineers, computer support specialists, systems analysts, and database administrators head the list of occupations with the fastest employment growth[4]; some of the workers most in demand will be "Webmasters, LAN operators, help-desk operators, [and] knowledge

[1] Help Wanted 1998: Executive Summary. Information Technology Association of America and Virginial Polytechnic Institute and State University. http://www.itaa.org/workforce/studies/hw98.htm.
[2] Bridging the Gap: Information Technology Skills for a New Millennium: Executive Summary. Information Technology Association of America. http://www.itaa.org/workforce/studies/hw00execsumm.htm.
[3] U.S. Dept. of Commerce, Office of Technology Policy. (1998, January). *Update: America's New Deficit.* http://www.ta.doc.gov/PRel/ANDII.PDF.
[4] U.S. Dept. of Labor, Bureau of Labor Statistics. (2000, February 9). Economic and Employment Projections, 1998-2008. http://www.bls.gov/news.release/ecopro.toc.htm.

engineers."[5] Programs like the one proposed here can contribute to meeting this demand for well-educated IT workers. Appendix A lists some specific job opportunity areas for which BSIS graduates will be particularly qualified.

As noted in section I.F., SILS conducted a focus group session in order to gain the perspective of local employers (see Appendix C). The participants, representing both technology/information firms and non-IT employers, were very enthusiastic about the potential of the BSIS to educate their future employees. Some of the skills/knowledge areas that they were particularly pleased to see evident in the BSIS offerings included information gathering and analysis, information architecture, technology-related skills and knowledge, and business-related knowledge. In addition, according to informal data gathered by Melanie Cinche in UNC-CH's University Career Services, 60 companies interviewing on-campus during the 1999-2000 academic year indicated that computer and information skills are extremely important for prospective employees.

Strengthening existing programs at UNC-CH

The BSIS will strengthen SILS in many ways. Faculty expansion will allow us to offer new courses related to information and library science. The faculty are committed to ensuring that all faculty will teach at the undergraduate or graduate level as desired, so that the expansion will benefit SILS' MS and PhD degree programs, as well as supporting the BSIS.

By including an undergraduate major in its program offerings, SILS will benefit from the synergy among the students at various levels. One clear benefit will be the entry of these undergraduates into the MS or PhD programs. Whereas the MSIS and MSLS degrees currently do not have discipline-specific entry requirements, the presence of a strong BSIS degree will help to raise our expectations about the preparation of our students for graduate work.

In addition to directly benefiting SILS, the BSIS will benefit other programs on campus by offering courses of interest to their students, or by covering aspects of their disciplines for which SILS is better equipped. In some cases, jointly offered courses may be developed. For example, the Department of Computer Science will not need to consider undergraduate courses in database design, because these will be offered as part of the BSIS. Similarly, the Kenan-Flagler School of Business will not need to offer a full-scale program in management information systems for their majors, because the BSIS will provide support in this area. For these, as well as other campus programs, the BSIS will complement or obviate their focus on information processes, systems or concepts.

B. Enrollment (upper division program majors, juniors and seniors only, for baccalaureate programs): Use the format in the chart below for projected enrollment for 4 years. Explain the projections and cite source(s).

Applications from the first cohort of students will be accepted from sophomores during the spring of their sophomore year for admission in the fall of their junior year. It is expected that all

[5] U.S. Dept. of Labor. (1999). *Futurework: Trends and Challenges for Work in the 21st Century.* Page 64 (PDF). http://www.dol.gov/dol/asp/public/futurework/welcome.html.

students will be full-time students. During the first year of implementation (academic year 2002-2003), we will accept only 60 students. Thereafter, we will admit 90 students each fall. We anticipate most students will graduate on time, resulting in an ongoing production of 90 graduates per year.

	Year 1 2002-2003	***Year 2 2003-2004***	***Year 3 2004-2005***	***Year 4 2005-2006***
Full-time	60	150	180	180
Part-time				
TOTALS	***60***	***150***	***180***	***180***

C. SCH production (upper division program majors, juniors and seniors only, for baccalaureate programs). Use the format in the chart below to project the SCH production for four years. Explain how SCH projects were derived from enrollment projections.

The proposed program is for undergraduate students only, and will not affect the production of graduate students in SILS. Therefore, the following table shows only the student credit hours for undergraduates, during the first four years of implementation.

IS majors will typically enter the program at the beginning of their junior year (after taking one 3-credit prerequisite course during their sophomore year). Including the required prerequisite course (INLS 40), each IS major will take a minimum of 30 credits in order to complete the program. In addition, students may take electives in SILS; for IS majors, the maximum number of credits that may be taken in SILS is 40. For the purposes of planning, it is estimated that each major will take approximately 36 credits in SILS. The number of IS majors is shown in the table above. In the table below, their total credit hours are calculated as 18 per student per year.

In addition, it is anticipated that approximately 120 students (in addition to those eventually accepted as IS majors) will be taking INLS 40 each year, once the program is fully implemented. The table below assumes there will be 60 of these students in Year 1 and 90 in Year 2. These students are added to the total credit hours at 3 credits per year.

	Student Credit Hours: Undergraduate Students			
Program Category: III	***Year 1 2002-2003***	***Year 2 2003-2004***	***Year 3 2004-2005***	***Year 4 2005-2006***
IS majors	1080	2700	3240	3240
Non-majors in INLS 40	180	270	360	360
TOTALS	***1260***	***2970***	***3600***	***3600***

An alternative view, focusing on the faculty needed to support the proposed program, is to examine which courses will need to be offered each semester in order to accommodate all the students who will be enrolled in the program. These calculations are shown in Appendix D, and summarized in the table below. They assume that most classes will be limited to 30 students

each, since many of them involve intensive work in computer systems design. Additional discussion of this issue is included in Section IV.B.

	Additional Course Sections Needed			
	Year 1 2002-2003	***Year 2 2003-2004***	***Year 3 2004-2005***	***Year 4 2005-2006***
Sections in new classes	18	26	22	28
Added sections in existing classes	5	4	6	7
TOTAL SECTIONS	***23***	***30***	***28***	***35***

D. Projected productivity levels (number of graduates):

It is assumed that students will take two years to complete the major, after entering it in the fall semester of their junior year. Thus, the number of graduates will follow closely from the number of students enrolled.

Level	Year 1	Year 2	Year 3	Year 4	TOTALS
Bachelor's	0	60	90	90	240
Master's					0
Interm./Prof.					0
Doctoral					0

III: PROGRAM REQUIREMENTS AND CURRICULUM

A. Admission. List the following:

1. Admissions requirements for proposed program (indicate minimum requirements and general requirements)

Admissions will be competitive, based upon a balanced consideration of the application materials (see Section III.A.2.). All entering students must have completed two years of general college and perspectives requirements, or elective courses.

General college requirements:

- Basic Skills:
  - English Composition and Rhetoric general education requirements (typically ENGL 11 and ENGL 12)
  - Oral Communication general education requirements (generally COMM 09 if required)
  - Foreign Languages general education requirements (generally through level 3 or 4)
  - Mathematics general education requirements
    - MATH 10, "Algebra" (if required)
    - MATH 22, "Calculus for Business and Social Sciences," or MATH 31, "Calculus of Functions of One Variable," or STAT 11, "Basic Concepts of Statistics and Data Analysis I"

- Perspectives:
  - Aesthetic perspectives requirements
    - Fine Arts (one course)
    - Literature (one course)
  - Natural Science perspectives requirements
    - One science course with a complementary laboratory
    - PSYC 10, General Psychology
  - Philosophical perspectives requirement
    - One course
  - Social Sciences perspectives requirement
    - INLS 40, "Information Seeking"[6]
    - One additional course
  - Historical perspectives requirements
    - Pre-1700 Western History or Other Western History(one course)
    - Non-Western/Comparative History (one course)

[6] We will seek permission to offer this new course as one that will fulfill the Social Sciences perspective. These plans assume that, once the BSIS program is fully implemented, this course will be made available to approximately 210 students each year, of which 90 will have been accepted as information science majors.

- Other requirements:
    - Cultural Diversity requirement
        - One course
    - Physical Education requirement
        - Two courses plus swim test (not counted toward the graduation requirement of 120 academic hours)

Students will be admitted to the BSIS degree program, not to a specific concentration.

2. Documents to be submitted for admission (listing or sample)

Students will submit an application packet in the fall semester of their sophomore year. The packet will include:

- A brief (100-300 word) essay describing their reasons for pursuing the major in information science. The essay should outline preparation for the major, reasons for interest in the major, plans for the major (which concentration, what courses, what projects), and plans for post-graduation. This essay will provide evidence of the applicant's competence in communicating, understanding of the major, and plans for coursework and independent study.
- A resume indicating job experience, academic background and extracurricular activities.
- A transcript or record of studies completed at UNC-CH, confirming completion or progress toward general education and perspectives requirements

Admission criteria will also include college GPA and SAT scores, academic preparation, and any other non-required materials submitted (such as letters of reference, project portfolios, etc.). Through the admission process, SILS will attempt to maintain the high student quality and diversity we have experienced with the undergraduate minor. As such, student applications will be evaluated as a whole, with no particular cutoffs for GPA or SAT scores.

To facilitate truth in advertising, SILS will maintain an online publication summarizing average GPA, SAT scores and other characteristics of students who are admitted to the BSIS, as well as a summary of post-graduate employment facts.

B. Degree requirements. List the following:

1. Total hours required. Major. Minor.

Completion of a BSIS requires the completion of a minimum of 120 hours, excluding physical education activity courses. A graphical overview of the program structure is provided in Appendix E.

The particular General College and Perspectives requirements for the BSIS are listed in section III.A.1.

An information science major consists of nine information science courses (27 credits), plus the prerequisite course, INLS 40, "Retrieving and Analyzing Information" (which may fulfill a portion of the Social Sciences Perspectives requirement). For all concentrations, the general BSIS requirements are as follows.

- INLS 40, "Retrieving and Analyzing Information" (prerequisite to enrollment in the major; generally taken in the sophomore year)
- INLS 50, "Information Technology Applications"
- INLS 55, "Information Use for Organizational Effectiveness"
- INLS 60, "Information Systems Analysis and Design"
- INLS 72, "Database Concepts and Applications"
- INLS 92, "Emerging Topics in Information Science" (taken in the senior year)

In addition, each student shall concentrate in one area or devise a thematic concentration and have it approved by the chair of the SILS Undergraduate Committee. Three concentrations are described here; it is expected that additional concentrations will be created by the School as the field of information science evolves.

Each student will take a minimum of four courses in the selected concentration area. Required courses for each concentration include:

- Required courses for the Information Technology concentration:
  - INLS 80, "Data Communication and Networks"
  - INLS 102, "Information Systems, Structures, and Algorithms"
  - TWO of:
    - INLS 150, "Organization of Information"
    - INLS 172, "Information Retrieval" (COMP 172)
    - INLS 182, "Introduction to Local Area Networks"
    - INLS 183, "Distributed Systems and Administration"
    - INLS 184, "Protocols and Network Management"
    - INLS 186, "TCP/IP Networking and Network Programming" (COMP 143)
    - INLS 191, "Advanced Internet Applications"
    - INLS 256, "Database Systems I" (if major is approved, this course will be re-numbered to a 100-level course)
    - COMP 117, "Introduction to WWW Programming"
    - COMP 118, "Advanced WWW Programming"

- Required courses for the concentration in Management of Information Resources:
  - INLS 134, "Developing Information Products and Services."
  - INLS 150, "Organization of Information"
  - Any TWO of:
    - INLS 64, "Information Architecture"
    - INLS 131, "Management of Information Agencies"
    - INLS 165, "Records Management"
    - INLS 187, "Information Security"
    - BUSI 192, "Introduction to Management Information Systems"

        - COMP 121, "Data Structures"
        - COMP 130, "Files and Databases"

- Required courses for the Information Design concentration:
    - INLS 62, "Human-Machine Interaction"
    - INLS 64, "Information Architecture"
    - ONE of:
        - PSYC 30, "Statistical Principles of Psychological Research" (PSYC 10, "General Psychology" is pre-requisite)
        - EDFO 180, "Statistical Analysis of Educational Data I"
        - STAT 101, "Statistical Methods I"
        - BUSI 24, "Applied Business Statistics and Management Science"
        - ECON 70, "Elementary Statistics"
    - ONE of:
        - INLS 168, "Computer-Supported Cooperative Work (CSCW) Design"
        - INLS 176, "Digital Libraries"
        - INLS 181, "Internet Applications"
        - INLS 191, "Advanced Internet Applications"

For all concentrations, the additional specific required courses may be used to meet Perspectives requirements when permitted by the General College.

BSIS students are encouraged to participate in internship or part-time employment opportunities related to their major. They may enroll for the internship course, INLS 91, "Internship in Information Science". During the internship, they will be supervised on site by an information professional and will work with a SILS faculty member as an advisor. Students wishing to spend an entire semester devoted to an internship may register for up to 12 credits. Students may participate in the APPLES internships for a service learning opportunity (see Section III.B.5.).

BSIS students are encouraged to pursue a minor or a double major (e.g., in business administration or in the arts and sciences). The completion of a minor or a second major must be certified by the College or School in which it is earned.

BSIS students are not allowed to complete more than 40 credits of their program in SILS courses. They may take a few additional electives in SILS, but are encouraged to acquire a broad education in the liberal arts and sciences.

To enrich their undergraduate education, IS majors will be encouraged to work with faculty on their research projects and/or to pursue independent study in an area of interest to the student. From the inception of the program, students will be able to register for an Independent Study course. In addition, an Honors option will be available beginning in Spring 2005, and is to be completed in addition to requirements for the student's chosen concentration. To complete the honors option, a student must enroll in INLS 95, "Honors Thesis," and successfully complete an honors thesis paper.

If the major in information science is approved, there will be two changes in the requirements for the existing minor in information systems. First, INLS 70, "Organizing and Retrieving Information," one of the courses currently required for the minor, will be deleted if the major is approved. In its place, minors will be required to take INLS 40, "Retrieving and Analyzing Information," and INLS 72, "Database Concepts and Applications." Second, INLS 80, "Data Communication and Networks," with its new content, will no longer be required of minors; instead, INLS 181, "Internet Applications," will be required of minors.

2. Proportion of courses open only to graduate students to be required in program (graduate programs only)

N/A

3. Grades required

All INLS courses must be passed with a minimum grade of C (not C-). No INLS course may be taken for the PS/D/F option. Minimum GPA for graduation is 2.0.

4. Amount of transfer credit accepted

Because very few comparable degree programs are available elsewhere, it is unlikely that transfer credit will meet specific requirements for the BSIS. All transfer credit will be evaluated by SILS to determine whether it meets the requirements of courses required for the BSIS degree. The maximum amount of transfer credit accepted will be the same as the maximum allowed by the University.

5. Other requirements (e.g., residence, comprehensive exams, thesis, dissertation, clinical or field experience, "second major," etc.)

Service to one's community is an important aspect of modern life, and is part of the University's mission. In order to further this goal in the BSIS degree program, students will be encouraged to complete at least one service-learning experience during their undergraduate career. Projects that might be of interest to BSIS students include the development of information products and services, e.g., a membership database for voluntary organization, a Web site for a human services agency, or a directory of community health advisors. Students will have an opportunity to participate in service-learning experiences through their assigned project work in the following courses:

- INLS 62, "Human-Machine Interaction"
- INLS 72, "Database Concepts and Applications"
- INLS 80, "Data Communication Networks"
- INLS 91, "Internship in Information Science"
- INLS 134, "Developing Information Products and Services"
- INLS 162, "Systems Analysis"
- INLS 168, "Computer-Supported Cooperative Work (CSCW) Design"

- INLS 174, "Multimedia Information Systems"
- INLS 176, "Digital Libraries"
- INLS 191, "Advanced Internet Applications"

Ideally, this experience will be integrated into students' regular coursework and coordinated through the UNC-CH APPLES program. Students may also participate in service learning through an independent study or APPLES internship.

SILS graduate students have often been involved in projects that provide community service. For example, systems analysis and design work has been completed for the following non-profit organizations:

Chapel Hill High School
Durham Public Schools, Magnet Center
NC Small Business Development Center
North Chatham Schools, NC
Rowan (NC) Public Library
Southeastern Baptist Seminary Library
Union Theological Seminary Library, VA
United Methodist Church, Tennessee Conference
University of Maine libraries
Winneshiek County (IA) Habitat for Humanity

6. Language and/or research requirements

None other than the General College and Perspectives requirements.

7. Any time limits for completion

None other than UNC-CH time limits. Note that we anticipate some students will wish the BSIS to be a second major, or apply for a second major in addition to the BSIS. Applications for second majors (or minors) will not be approved unless the student can demonstrate his or her ability to graduate on time (i.e., within 8 semesters).

C. List existing courses by title and number and indicate (*) those that are required. Include an explanation of numbering system and describe new courses proposed.

The following list includes all the courses required in any of the concentrations of the proposed major in information science. It does not include other SILS courses that may be taken as electives.

Courses are listed in groups by coverage/scope. Descriptions of the new courses follow the course listing.

Notes:
- Courses with a ** are required for all BSIS students.
- Courses with a * are required (or one of several required) for at least one concentration.
- Courses marked [m] are required for SILS' existing minor in information systems.

Fundamental courses
INLS 40** [m] "Retrieving and Analyzing Information"
INLS 50** [m] "Information Technology Applications"
INLS 55** "Information Use for Organizational Effectiveness"

Information design courses (60's, 160's)
INLS 60** [m] "Information Systems Analysis and Design"
INLS 62* "Human-Machine Interaction"
INLS 64* "Information Architecture"
INLS 168* "Computer-Supported Cooperative Work (CSCW) Design"

Information organization and retrieval courses (70's, 150's, 170's)
INLS 70 [m] "Organizing and Retrieving Information"
INLS 72* [m] "Database Concepts and Application"
INLS 150* "Organization of Information"
INLS 170* "Applications of Natural Language Processing" (COMP 170)
INLS 172* "Information Retrieval" (COMP 172)
INLS 174* "Multimedia Information Systems"
INLS 176* "Digital Libraries"

Information technology courses (80's, 100's, 180's)
INLS 80* [m] "Data Communication and Networks"
INLS 102* "Information Systems, Structure, and Algorithms"
INLS 181* "Internet Applications"
INLS 182* "Introduction to Local Area Networks"
INLS 183* "Distributed Systems and Administration"
INLS 184* "Protocols and Network Management"
INLS 186* "TCP/IP Networking and Network Programming" (COMP 143)
INLS 191* "Advanced Internet Applications"

Information management courses (130's)
INLS 131* "Management of Information Agencies"
INLS 134* "Developing Information Products and Services"

Topics and special courses (90's)
INLS 90 "Independent Study"
INLS 91 "Internship in Information Science"
INLS 92** "Emerging Topics in Information Science"
INLS 95 "Honors Thesis"

Course descriptions for new courses

INLS 40 Retrieving and Analyzing Information (3)
Introduction to and application of the processes that can be used in seeking information, evaluating the quality of the information retrieved, and synthesizing the information into a form that is useful. Development of personal skills in the use of a wide range of information resources, both general and discipline-specific.

INLS 55 Information Use for Organizational Effectiveness (3)
Basic concepts in the way that information, people and technology interact to affect organizational effectiveness. Principles of problem solving, team work, leadership, and organizational change/innovation. The unique contributions of and interactions among information-related units within large organizations.

INLS 62 Human-Machine Interaction (3)
Design, implementation and evaluation of interfaces for computer systems. User-based techniques, usability issues, and human factors.

INLS 64 Information Architecture (3)
Pre-requisite: INLS 60. Techniques for organizing, presenting, abstracting, storing and retrieving information. Information analysis and encoding, interface issues, implementation issues, user-based evaluation.

INLS 72 Database Concepts and Applications (3)
Design and implementation of basic database systems. The relational database model. Semantic modeling and entity-relationship theory. Table layout, normalization, SQL. (May not be taken for credit for students who have taken INLS 70.)

INLS 80 Data Communication and Networks (3) (existing course; revised content)
Introduction to networking concepts and technologies in a modern enterprise computing environment. Topics include layered network architectures, data communication principles, evolution of telecommunications networks and the Internet, common network technologies and standards, impact of the Internet on business telecommunications solutions, and enterprise network planning and management.

INLS 91 Internship in Information Science (3-12)
Prerequisites: BSIS majors only. Supervised observation and practice in an information science-related position. The student will work a required amount of time in the work setting under the supervision of an information professional and will participate in faculty-led group discussions for ongoing evaluation of the practical experience. The course may be repeated, with the permission of the SILS Undergraduate Committee.

INLS 92 Emerging Topics in Information Science (3)
Prerequisites: senior standing, BSIS majors only. Contemporary topics of information science, information systems, information technology, information design and information management. Study of current readings and events. Assessment of future impact of new developments.

INLS 96 Honors Thesis (2)
Prerequisites: senior standing, BSIS majors only. Co-requisite: INLS 92. Completion of an original written thesis on a topic of interest as approved by the instructor. (Note: INLS 96 will have limited contact hours due to the independent nature of the student work. Students will identify a SILS faculty member to serve as advisor.)

INLS 102 Information Systems, Structures and Algorithms (3)
Pre-requisite: COMP 14. Programming concepts for information systems, especially text processing systems. Practical design and evaluation. Commonly used data structures and algorithms. (May not be taken for credit by students who have taken COMP 114.)

INLS 134 Developing Information Products and Services (3)
Planning, design, implementation and evaluation of information products and services. Entrepreneurship, product development, marketing and forecasting.

INLS 168 Computer-Supported Cooperative Work (CSCW) Design (3)
Fundamental principles and technology used to design computer-supported cooperative systems or groupware. Topics covered include collaboration technology, intranets, enterprise-wide computing, human-computer-human interaction, and collaborative work.

INLS 176 Digital Libraries (3)
Pre-requisite: INLS 174. Design, implementation and evaluation of digital collections. Technical issues, social concerns, copyright, funding mechanisms.

IV: FACULTY

A. List the names of persons now on the faculty who will be directly involved in the proposed program. (Include resumes in an appendix or attachment.) Provide complete information on each faculty member's education, teaching experience, research experience, publications, and experience in directing student research, including the number of theses and dissertations directed for graduate programs.

The BSIS is designed to reflect and extend current SILS teaching areas. As such, it offers opportunities for any current SILS faculty member to teach new or existing courses for the BSIS degree. Furthermore, we anticipate that some BSIS students will want to enroll in 100-level INLS courses that are not specifically required for the BSIS. (This happens currently with students in the information systems minor.)

All current faculty members are therefore eligible to teach courses for the BSIS students. An abbreviated resume for each is included in Appendix F; regularly-updated cv's are available for most faculty members online, from the School's Web page (http://www.ils.unc.edu/). All projected new faculty hires will also be able to teach courses with undergraduate or graduate students. In Fall 1999, the SILS Undergraduate Committee interviewed all existing faculty members. Nearly all expressed interest in teaching one or more courses for BSIS students.

B. Project the need for new faculty for the proposed program for the first four years. If the teaching responsibilities for the proposed program will be absorbed in part or in whole by the present faculty, explain how this will be done without weakening existing programs.

The issue of offering a new program while maintaining the strength of the current programs is an important one for SILS. The School was ranked number one in the nation by the most recent U.S. News & World Report ranking of graduate schools of library science. The information science masters, first offered just a decade ago, is the first of its kind that has been approved for the full seven-year accreditation period by the American Library Association. The undergraduate minor, first offered in 1996, has already gained a strong reputation on campus. It is extremely important that the new undergraduate major in information science be of the same caliber as SILS' existing programs and that the resources required for the new program *not* be gained at the expense of existing programs.

Appendix E includes the complete projected course matrix for all SILS courses, and is briefly summarized here. A pre-implementation year is included here and in the appendix, to account for the need for incoming students to take INLS 40 prior to program entry. In order to teach the additional 35 sections per year (once the program is fully implemented), a combination of tenured/tenure-track faculty, adjunct professors, and graduate teaching fellows will be required.

	Year0	Year1	Year2	Year3	Year4
Total BSIS enrollment[1]	0	60	150	180	180
Number of sections of new courses[2]	3[3]	18	26	22	28
Number of added sections of existing courses	0	5	4	6	7
Total number of sections offered by SILS[4]	84	112	116	121	120
Sections taught by full-time faculty[4]	63	78	81	88	86
Sections taught by adjuncts & teaching fellows[4]	21	34	35	33	34

[1]It is assumed that each student will take 2 or 3 SILS courses per semester, in order to complete the BSIS requirements in two years.

[2]New courses are courses added to the curriculum for the BSIS.

[3]Three sections of INLS 40, "Information Seeking," will be offered in Spring 2001 to prepare those students who will enter the program in Fall 2001.

[4]These calculations include ***all*** SILS courses being offered, since the teaching load for the new program will be shared across all SILS faculty and will need to be coordinated with the existing courses for the undergraduate minor and the graduate programs.

The implementation of the BSIS will require that eight new tenured/tenure-track faculty members be added to teach the new and expanded sections. In addition, one new or existing faculty member should be given half-time administrative responsibility as Associate Dean for Undergraduate Programs.

Searches for new faculty should be conducted over a three-year period, slightly ahead of the program implementation. Thus, the first faculty searches should be conducted in the year prior to implementation of the program, so that they can be available to offer courses in the first year of implementation. It is planned that four faculty members should be hired in this first cohort, two more during the first year of program implementation, and the final two new faculty members in the second year of program implementation.

Teaching responsibilities for BSIS courses will be divided among current and new faculty members. We will seek new faculty with abilities to teach at both undergraduate and graduate levels. As has been true of new faculty in the past, those who are hired in these positions are expected to use their expertise to continue to enrich the SILS curriculum. Specifically, it is expected that several of the new SILS faculty members would propose courses to be added to the undergraduate major, primarily as electives for specific concentrations.

It is important to SILS and, we believe, to the University that the undergraduate major in information science be equivalent in quality to the highly-ranked SILS graduate programs. In order to accomplish this goal, students must have access to and regular interaction with full-time tenured/tenure-track faculty, within the context of courses and in individual consultations. The teaching loads represented above reflect these values, as well as our experience with a successful minor in information systems.

In the recent past, approximately one-third of the SILS courses were offered by adjunct professors or SILS doctoral students. Based on our experience in trying to hire qualified adjunct faculty in the area of information science, it seems unlikely that much of the projected teaching load can be carried by adjuncts. It is more likely that our Ph.D. program will expand somewhat,

so additional qualified Ph.D. students will be available to teach some sections (initiatives have already begun to enlarge the Ph.D. program). It is expected that approximately 16 additional adjunct professors and graduate teaching fellows will be required each year to implement the program.

C. If the employment of new faculty requires additional funds, please explain the source of funding.

The eight new faculty members will need to be supported from additional funds. One of these positions is included in the SILS plans for Campaign Carolina (see Appendix G). Specifically, the distinguished professorship in Digital Libraries and Data Management will provide substantial input to this program.

The additional seven positions are listed in our fundraising priorities as being supported by state funds. It is our belief that it is important for the state to invest in a program that is so clearly beneficial to its citizens. The graduates of this program will assist North Carolina in retaining its current strong position in technology-based industries and will enable us, as a state, to take a national leadership role in developing these industries. Without such a program, North Carolina may continue to prosper but it has no mechanism for moving forward in innovative ways.

The plans for Campaign Carolina do include fund raising for two additional faculty positions, intended to improve specific graduate programs. One of these positions is in the area of health informatics, and the other is in the area of children and technology. Clearly, both of these positions (supported with new funds raised during the campaign) will make important contributions to the undergraduate program. These faculty members, like all SILS faculty, will be expected to teach some of the undergraduate courses, as well as graduate courses.

D. Please explain how the program will affect faculty activity, including course load, public service activity and scholarly research

No impact on course load for new or existing faculty is expected (current course load is two classes per semester; this load is reduced if faculty time is supported by research grants or a faculty member is on leave). However, undergraduate classes in the minor have 30-35 students, and the same class size is planned for the major. Faculty who teach primarily SILS graduate courses typically have smaller class sizes, so a transition to more undergraduate teaching will increase the average SILS class size and the overall student/faculty ratio.

Availability of individual faculty for public service activity should not change significantly, except as a result of larger class sizes and additional new course preparation activities. Since students will be encouraged to participate in service learning activities in conjunction with their coursework or via internships, SILS' level of public service is expected to increase overall.

As with public service activities, availability of individual faculty for research activity should not change significantly. It is expected that noticeable decreases in research activities may take

place during the first few years of implementation of the major. However, it is also expected that the IS majors will be interested in being involved in faculty research activities and will also conduct independent research, guided by SILS faculty. Thus, over the long term, research productivity at SILS is expected to increase.

The main changes anticipated are from faculty growth. Eight new faculty hires represents growth of about 45%. We anticipate a wider array of research and teaching interests, backgrounds and personalities on the SILS faculty. This offers some exciting new opportunities for collaborative research and teaching, will help to increase our academic and cultural diversity, and will provide the personnel needed to address the needs of the BSIS.

V: LIBRARY

A. Provide a statement as to the adequacy of present library holdings for the proposed program.

Currently, the needs of SILS students and faculty are met primarily through the Information and Library Science Library, located in Manning Hall. We anticipate the BSIS will shift some of the responsibility to the Undergraduate Library, particularly for class reserves.

Coverage for topics addressed by new courses for the BSIS is not extensive in the ILS Library or other libraries on campus. In order to address the expanded teaching areas of the new BSIS courses, as well as the increased diversity that faculty growth will bring, we seek to expand the scope and coverage of current holdings in the ILS Library.

In consultation with SILS library staff, we believe an expansion of the ILS Library acquisitions budget by $15,000 per year will enable collections of specialized periodicals, monographs and indexes to better serve the BSIS students. The table here shows the proposed uses of these monies:

	Year 0	Year 1	Year 2	Year 3	Year 4
Books	$7,000	$12,000	$11,000	$10,000	$9,000
% allocation to update current titles— expand to new areas/titles	50% update of titles 50 % new titles	50% update of titles 50 % new titles	30% update of titles 70% new titles	20% update of titles 80% new titles	10% update of titles 90% new titles
Serials[1]	$1,000	$3,000	$4,000	$5,000	$6,000

[1] Serial prices are increasing at a more rapid rate than prices for books, and may indeed by underestimated in this table.

B. ***State how the library will be improved to meet new program requirements for the next five years. The explanation should discuss the need for books, periodicals, reference material, primary source material, etc. What additional library support must be added to areas supporting the proposed program?***

Collection:
The ILS library began collecting at the undergraduate level three years ago with the inception of the undergraduate minor, when we received a special one-time sum of $15,000. This grant came as part of a grant to the School from the Chancellor, to prepare for the undergraduate minor. However, the rapidly changing nature of the technology field has meant that our regular funds have been inadequate to ensure consistent updating of these undergraduate materials and the IS field has not been covered in anything except a cursory manner.

The current library budget for books (monographs) stands at $16,000, considerably lower than the $28,000 annual budget that was available to us in 1984 at a time when the field of information science received considerably less emphasis in the School than it does now. The average annual cost of books from scholarly trade and professional presses in 1998 was $60.46, a

4.17% rise over the previous year.[7] However, a sample of 12 information science publishers purchased by SILS during that time period indicate that the average price in this field was $74.40, with the highest price for a single book being $248.73 (Elsevier), and the lowest price being $25.02 (O'Reilly).

Increasing numbers of journals/serials are published in this field in both electronic and paper formats. During the past year the ILS Library (with funding from the Academic Affairs Library) spent $57,756 on subscriptions to journals and indexes. To keep undergraduate student access to information up-to-date and timely we will need to be able to subscribe to a sample of the most useful and respected new titles. Electronic libraries of collections in journals and conference proceedings are a growing trend. The SILS Library already subscribes to one such library, the *ACM Digital Library*, which currently costs $3,105 and provides access to full text of journals and conference proceedings published by the Association for Computing Machinery. The IEEE Electronic Library, currently priced at $79,995, is clearly out of our range financially. But there will be other full text sources highly useful to undergraduate and graduate students not only in information science, but also in mathematics, computer science and related fields. We hope that we will be able to share costs with the Brauer (Math/Physics) and Davis Library when they are within our price range.

Staffing:

One full time librarian and one library technical assistant currently staff the SILS Library. They are assisted by approximately 12 student assistants. We currently are open 83 hours a week. With a 90% increase in the size of the student body and eight new faculty members we anticipate heavier use of our collection and services, and demands for longer hours of opening. The addition of another staff member to the SILS Library will be critical. To support the increased workload in selection of material (both electronic and paper), the increased amount of help required by undergraduate students, and the constantly changing nature of our services we recommend the addition of one full time librarian. This position would be most usefully filled by a librarian with a background in information science.

The SILS Library currently provides on the job training to future librarians and information scientists who serve as student assistants. With the expected increase in our clientele we will need not only an additional librarian, but also at least four additional student assistants. The substitution of student assistants for a regular staff appointment is not a feasible option given the complexity of our tasks and the amount of training required to perform them.

Space:

Space needs for the growing SILS library fall into multiple categories. Multipurpose space where groups of students can meet, hold small group discussions, and be plugged into the network is seen of great value and is not available in the current library. The SILS Library currently has 6 computer stations available to access electronic library resources. We estimate that we will need six more stations to satisfy additional demand so that expanded computer seating will be needed for this purpose. Finally, to accommodate the needs of a growing print collection, more stack space will be needed if the current MSLS, MSIS, and Ph.D. programs are not to be neglected.

[7] *Trialogue: Publishing News for Publishers, Vendors, and Librarians*. Spring 1999, Number 10, p. 11

C. Discuss any contemplated use of other institutional libraries

Because information science is inherently interdisciplinary, the SILS community already draws on the resources of multiple libraries on campus, in addition to the ILS Library. In particular, the Brauer Math/Physics Library houses materials related to computer science and Davis Library houses materials related to business administration and journalism. It is expected that we will continue to draw on these resources and that the demand will increase as the SILS student body increases. However, these demands will be minimal compared to the additional demands on the ILS Library since it is anticipated that the ILS Library will support the specific needs of the courses that will be taught.

VI: FACILITIES AND EQUIPMENT

D. Describe facilities available for the proposed program

Current SILS facilities include:

- Classrooms
  - 4 classrooms in Manning Hall (rooms 208, 214, 304 and 307)
  - 1 meeting and seminar room (room 215)
- Faculty offices
  - 16 faculty offices
- Administrative offices
  - 1 centralized administrative office with space for 5 people
  - 4 adjacent administrative offices for 1 person each
- Student offices
  - Desk space for approximately 10 PhD students
- Computing laboratory
  - A 21 station general computing lab (between room 117 and the ILS Library)
  - A 31 station computin lab that can also be used as a classroom (room 117)
  - An 8 station local area networking and distributed systems configuration lab (between room 117 and the ILS library)
  - Other equipment, including scanners, digital cameras and camcorders, and printers
  - Interactive Design Laboratory (IDL) and Collaboration Laboratory (CL) for research projects
- Additional computing facilities
  - Departmental server for teaching and research (Sun ES 450)
  - Departmental server for database development (Dell 4100)
  - Departmental server for applications (Dell 4100)

The following new or expanded facilities are needed to implement the BSIS:

1. 4 new classrooms suitable for up to 40 students each. All new classrooms will be connected to the SILS/campus computer network and be equipped with an instructor's computer workstation and projection equipment.
2. 8 offices for new faculty
3. 3 new offices for administrative and technical staff
4. Office space for 10 PhD students or MS research assistants
5. 3 Research offices/labs to support research needs of new faculty
6. Work rooms for SILS students suitable for 4 to 8 students with whiteboard and computer networking compatible with the Carolina Computing Initiative (CCI)
7. 3 new computer laboratories, configurable for use on a semester-by-semester basis for INLS 62, 64, 174, 176, 181, 182, 183, 184, 191 or other courses as desired by individual faculty
8. 3 new "CCI Ready" common spaces to be used as computing laboratories, work areas, and meeting spaces. Note that we anticipate this space will be used in conjunction with CCI requirements for student personal ownership of laptop computers, instead of developing new general-purpose computing laboratories.

9. Expanded network/server room. This space needs to be at least twice the capacity of the current room with an improved ventilation system.
10. Network closet for each floor of new wing of building and network closet for expansion to each new floor of building not presently maintained by SILS.
11. Workroom for computer repairs and trouble-shooting.

In order to make these facilities available for the BSIS, additional space will need to be made available to SILS. Currently, Manning Hall provides approximately 60,000 square feet of floor space. To provide space for the needs listed above, the following additional facilities will be needed:

- All remaining space in Manning Hall. Currently, other units occupy 25% of the floor space in the building. When acquired by SILS, this space should be renovated for use as one classroom, one computing laboratory, one student lounge, one meeting room, three offices, and additional library space.
- A new north wing to Manning Hall *or* renovation of the equivalent amount of space in nearby buildings. These renovations are intended to double the currently-available floor space. All newly-acquired space will need to be fully networked, so that the teaching and research capabilities are equivalent to the current SILS space in Manning Hall. The new space will be used for classrooms, laboratories, meeting rooms and offices.

E. Describe the effect of this new program on existing facilities

The space currenlty available to SILS is very heavily utilized. The BSIS will increase the size of the SILS student body by approximately 90% and the size of the faculty by over 40%. Thus, new classrooms, offices, and workspace will be needed to support this expansion (as described above).

Because information science is so technology-intensive, the new program will also require a significant amount of additional computing support (described above and in the next section). In order to take a leading role in the deployment of CCI plans on campus, we propose to minimize the development of dedicated general-purpose computer laboratories. Instead, we will only develop laboratories for special purposes that the CCI laptops will not meet. Students with CCI laptops will be able to plug in at any Manning Hall location (classrooms, offices, meeting rooms, etc.).

F. Indicate any computer services needed and/or available

SILS courses for the BSIS, as well as the existing graduate degrees, will make use of centralized server resources for purposes such as Web development and database experimentation. Campus resources offered by ATN are not suitable replacements for these purposes because they do not offer the experimental framework and flexibility needed for the technology-intensive SILS programs.

We anticipate that additional computing server capacity will be required to meet the needs of the expanded student body and new courses such as INLS 62, 64, 72, 74, 102, 134, 174 and 176. Specifically, the additional computing facilities and services needed are:

1. Sun ES 450 – Research and Development server
2. Sun ES 450 – Backup server
3. Dell Dimension – Research and Development server
4. Dell Dimension – Application Server for CCI laptops
5. Dell Dimension – Application and File server
6. Cabletron Workgroup SmartSwitch – Present workgroup switch is inadequate to handle the future load of network in proposed plan.
7. 10 (est.) twenty-four port 10/100 Cabletron Switches – This number may vary according to number of additional nodes placed on each floor and the number of nodes placed in the expanded wing of building.
8. Hewlett Packard Laser Printer for Faculty (workgroup printer) – one per floor of each "wing" which has faculty offices
9. Hewlett Packard Color Printer for Faculty (workgroup printer)
10. 88 (est.) Dell Personal Computers for additional faculty (8), staff (3), student assistants (2), classrooms (4), classroom labs (40) and labs (31).
11. 4 Proxima video projection units for classrooms.
12. 4 VCR's for classrooms.
13. 4 Extron video switches for classroom video projection
14. 3 (est.) Hewlett Packard Laser Printer for each additional lab
15. 1 Hewlett Packard Color laser printer for student labs.

In the information sciences, students must have experience with the leading edge of technologies to be marketable in the workplace, whether for commercial or non-profit employment. In order to sustain a professional program in information science, maintenance of computing equipment and software must have continued financial support. Software licenses and upgrades must be maintained on a yearly basis and computing hardware must be rotated triennially in order to create a successful learning environment in the information sciences.

G. ***Indicate sources of financial support for any new facilities and equipment***

Funds for the renovation/expansion of space in Manning Hall and the renovation of space in nearby buildings are expected to be raised through Campaign Carolina. The undergraduate major is the first priority in our fund raising, and the physical facilities and computing infrastructure for those facilities is expected to be supported by the $6 million goal we have set for that portion of the campaign.

VII: ADMINISTRATION

Describe how the proposed program will be administered giving the responsibilities of each department, division, school or college. Explain any inter-departmental or inter-unit administrative plans. Include an organizational chart showing the "location" of the proposed new program.

The BSIS will be entirely administered by SILS. BSIS admissions and advising will be within SILS, and most classroom and laboratory space will be controlled by SILS. Coordination with other colleges and schools will be needed for handling students who wish a double major or a minor. This coordination will be handled by the Associate Dean for Undergraduate Programs and the Undergraduate Student Services Assistant.

A new Associate Dean for Undergraduate Programs will report to SILS' Dean. This position will be parallel to the existing SILS Associate Dean who currently oversees the MS and PhD degree programs, scheduling and other items. The position of Associate Dean for Undergraduate Programs will be held by a full-time SILS faculty member (expanded to a 12-month contract) and will carry a 50% administrative release from teaching.

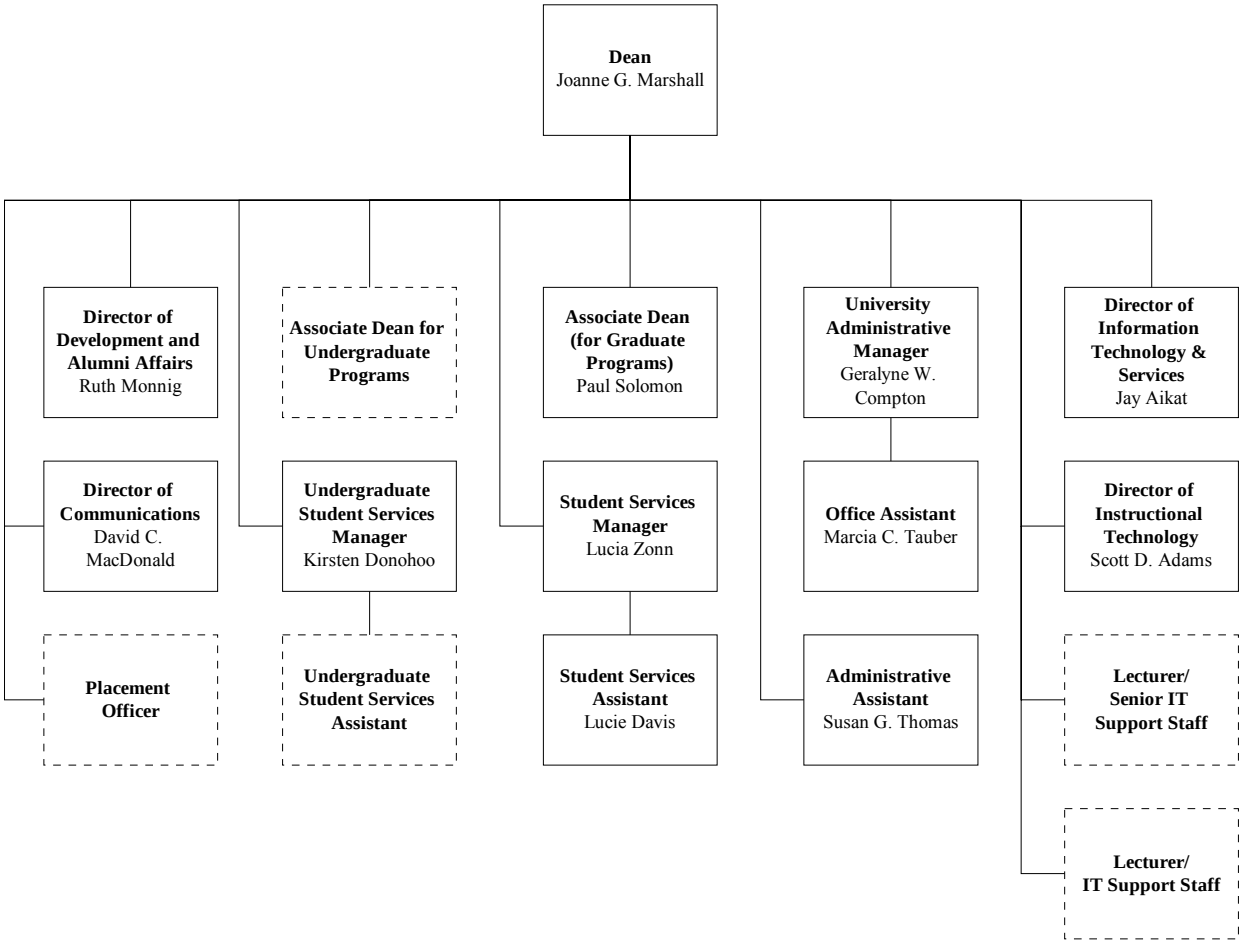
The Associate Dean for Undergraduate Programs will work with the Associate Dean for Graduate Programs on class scheduling. He or she will also take a leadership role in student recruitment and advising, course development, new faculty recruitment, facilities management and planning. He or she will be an *ex officio* member of the SILS Undergraduate Committee, where decisions for student admissions will be made.

A full-time Undergraduate Student Services Assistant will be added to the SILS administrative staff. This person will report to the existing Undergraduate Student Services Manager, and will have primary responsibility for admissions packets, student communication, and auditing degree requirements. This person will also support student advising activities.

A full-time placement officer will be added to the SILS administrative staff. This person will be responsible for managing student placement opportunities, in cooperation with placement officers at other academic units, job fairs, etc. In addition, he or she will assist students seeking co-op or internship experience. The placement officer will also maintain statistics and other data about BSIS alumni.

Two additional staff members (appointed at Lecturer rank) will be needed to provide support for the information and networking technologies needed by the program (see Section VI.). The more senior staff member will support the research and development within the School. This person will have responsibility for the research labs used by students and faculty, and for faculty research needs. The second staff member would be devoted to support of student computing labs, providing daily support for students using the special computing facilities required by a program in information science.

The reporting relationships among the current and new administrative staff members within SILS are shown in the diagram below.



Coordination with other colleges and schools will be managed by the Associate Dean for Undergraduate Programs. This will include regular communication with the Kenan-Flagler Business School to insure mutual inter-departmental course access for students, and communication with representatives of the College of Arts & Sciences and other units in which the IS majors are taking courses.

VIII: ACCREDITATION

Indicate the names of all accrediting agencies normally concerned with programs similar to the one proposed. If the proposed new degree program is at a more advanced level than those previously authorized or if it is in a new discipline/division, was SACS notified of a potential "substantive change" during the planning process? If so, describe the response from SACS and the steps that have been taken to date with reference to the applicable procedure.

There is currently no accrediting agency for undergraduate programs in information science such as the BSIS. Accreditation from agencies specific to management, computer science or librarianship would not be appropriate.

In the future, the American Library Association, which accredits the SILS MSLS and MSIS degrees, may develop an accreditation program suitable for the BSIS. Another organization, such as the Association for Computing Machinery, may also develop a suitable accreditation plan.

For the proposed BSIS, it is our understanding that SACS does not need to be notified.

IX: SUPPORTING FIELDS

Are other subject-matter fields at the proposal institution necessary or valuable in support of the proposed program? Is there needed improvement or expansion of these fields? To what extent will such improvement or expansion be necessary for the proposed program?

We believe there are excellent prospects for synergy with other fields at UNC-CH. In particular, we believe the BSIS will add strength and definition to majors in Business Administration, Computer Science (Mathematics) and Journalism and Mass Communication.

Early coordination and support with the appropriate academic units at UNC-CH has resulted in their endorsement of this proposal. All of these are strong programs and no improvement or expansion is necessary prior to implementation of the BSIS.

We will support efforts by any academic unit at UNC-CH to modify or expand their course offerings or degree programs to benefit from the BSIS or new courses it includes.

X: ADDITIONAL INFORMATION

Include any additional information deemed pertinent to the review of this new degree program proposal.

A review of the undergraduate minor in information systems may provide a useful background. Appendix H includes the Undergraduate Catalog entry for the minor.

XI: BUDGET

Provide estimates (using the attached form) of the additional costs required to implement the program and identify the proposed sources of the additional funds required. Prepare a budget schedule for each of the first three years of the program indicating the account number and name for all additional amounts required. Identify EPA and SPA positions immediately below the account listing. New SPA positions should be listed as the first step in the salary range using the SPA classification rates currently in effect. Identify any large or specialized equipment and any unusual supplies requirements.

For the purposes of the second and third year estimates, project faculty and SPA position rates and fringe benefits rates at first year levels. Include the continuation of previous year(s) costs in second and third year estimates.

The ongoing resources needed to implement and support the BSIS include additional faculty and staff (8 additional faculty positions, plus adjunct faculty and support for student services, placement, and faculty research), equipment and supplies (primarily computers and networking for classrooms, labs, and faculty), and library services (library staff and materials). The anticipated costs of these resources are summarized here. A detailed budget has been prepared and is included as Appendix I.

	Year 0	Year 1	Year 2	Year 3	Year 4
Teaching faculty/staff	$79,959	$728,495	$1,021,947	$1,215,545	$1,283,398
Equipment/supplies	$20,660	$719,505	$510,895	$42,695	$28,720
Library services	$7,000	$52,694	$53,616	$54,634	$55,753
TOTAL	**$107,619**	**$1,500,694**	**$1,586,459**	**$1,312,874**	**$1,367,872**

In addition to the resources included in the budget above, additional space/facilities will be needed. Currently, Manning Hall provides approximately 45,000 square feet of floor space for SILS, including four classrooms, a teaching lab and a general computer lab, faculty offices, and administrative offices. There is no available space for research or student team meetings, or for individual or group studying (outside the Library). All classrooms and the teaching lab are being used to full capacity.

As a first step, the remainder of Manning Hall should be renovated for use by SILS. This space would provide an additional classroom, additional library and lab space, a meeting room, and three faculty offices. It is estimated that these renovations would cost approximately $1.6 million. They would need to be accomplished prior to launching the BSIS program.

In addition, nearby buildings would need to be renovated or a wing would need to be added to Manning Hall, essentially doubling the currently-available floor space. All newly-acquired space would need to be fully networked, so that the teaching and research capabilities are equivalent to the current SILS space in Manning Hall. The new space would be used for classrooms, laboratories, meeting rooms and offices. It is estimated that this project would require a capital investment of approximately $6 million.

Funds for the building renovation/construction and one faculty member will be raised through *Campaign Carolina*. Funds will also be available if the new students enrolling in the BSIS bring additional tuition monies to UNC-CH. The state will need to invest in supporting the remaining expenses of this program.

XII: EVALUATION PLANS

All new degree program proposals and degree program track descriptions must include an evaluation plan which includes: (a) the criteria to be used to evaluate the quality and effectiveness of the program, (b) measures to be used to evaluate the program, (c) expected levels of productivity of the proposed program/track for the first four years of the program (numbers of graduates), (d) the names, addresses and telephone numbers of at least three persons (six reviewers are needed for graduate programs) qualified to review this proposal and to evaluate he program once operational, and (e) the plan and schedule to evaluate the proposed new degree program prior to the completion of its fifth year of operation once fully established.

A. *Criteria to be used to evaluate the proposed program*

Three classes of criteria for evaluation are proposed. These criteria will be applied as described below throughout the first four years of the BSIS. The Associate Dean for Undergraduate Programs will coordinate the evaluation and prepare the BSIS annual report. The classes of criteria are:

- Internal criteria: satisfaction of students and faculty
- Internal criteria: graduation rate and student quality
- External criteria: evaluation by outside persons and agencies

B. *Measures to be used to evaluate the program*

Satisfaction of students and faculty is a subjective measure of how well the BSIS fits the needs and expectations of those most closely involved with the program. Measurement will be multi-faceted:

1. Annual focus groups with students in the program to discuss the BSIS, identify possible problems, and suggest changes or improvements
2. Annual written survey of all BSIS students to assess satisfaction, identify areas of strength, and target needs for improvement
3. Bi-annual SILS faculty meetings to discuss the BSIS and plan for the future
4. Bi-annual assessment of class evaluation forms (SIR and localized forms) to evaluate class-level satisfaction

Graduation rate and student quality is a more objective measure of the BSIS. Annual academic summaries describing students who applied and were accepted will be prepared, indicating GPA, SAT, academic background, etc. Attrition rate will be measured, as well as time to successful graduation. We will also track placement of alumni.

Evaluation by outside persons and agencies will address the structure and implementation of the BSIS, the performance of students, and the performance of SILS faculty in delivering instruction for the degree. Three methods will be applied:

1. Evaluation by personnel at peer institutions. An annual report of the BSIS will be prepared based on the criteria above, and sent to at least two individuals at peer institutions with programs comparable to the BSIS. A written report will be requested from each reviewer.
2. Site visits by personnel at peer institutions. In the third year of program implementation, a faculty meeting with at least two individuals from peer institutions will be scheduled to review progress in the BSIS. Individuals will be supplied with the most recent annual report of the BSIS, and will be given the option to visit BSIS classes, meet with SILS faculty, etc.
3. The SILS Board of Visitors will be given the annual report of the BSIS and asked for an evaluation. Board of Visitors members will be offered the opportunity for a SILS site visit and their oral or written feedback will be solicited.

C. Project productivity levels (number of graduates)

Enrollment and graduation levels are projected in Section II.B.

D. Recommended consultants/reviewers

Candidate reviewers can be drawn from the strongest comparable programs in the country, just as was done in developing this proposal (see Section I.F.). It might be useful, for the first review, to invite the same reviewers to participate in the evaluation because they are familiar with the goals of the program. They are:

Dr. Ray von Dran, Dean, School of Information Studies, Syracuse University
Dr. Jane Robbins, Dean, School of Information Studies, Florida State University,
Dr. Thomas Childers, Professor and Associate Dean, College of Information Studies and Technology, Drexel University, and
Dr. Ida Flynn, Director, Undergraduate Program, School of Information Sciences, University of Pittsburgh.

E. Plan for evaluation prior to the fifth year

Several of the evaluation measures described in Section XII.B., above, will be implemented prior to the fifth year of operation of the program. They include:

- Annual student focus groups and surveys,
- Bi-annual faculty assessment of program operations and teaching quality,
- Annual statistical summaries of productivity and study quality,
- Annual review by the SILS Board of Visitors, and
- A third-year review by external visitors.

These evaluations address the criteria outlined in Section XII.A.

XIII. REPORTING REQUIREMENTS

See Appendix H, First-Year Status Report and Appendix J, Third-Year Status Report in these Procedures.

Date proposed degree program was authorized for planning: January 31, 2000

Proposed date of initiation of proposed degree program: August 15, 2002

Appendix A: Selected Job Opportunity Areas for BSIS Graduates

Applications programmer
Applications support specialist
Applications trainer
Business analyst
Competitor analyst
Consultant (all levels; many industries)
Customer service specialist
Data center planner or manager
Data security analyst
Database analyst
Database designer
Database manager
Database programmer
Database trainer
Electronic commerce programmer or manager
Evaluation and research specialist
Human-computer interface designer or evaluator
Information architect
Information archivist
Information broker
Information consultant
Internet researcher
Manager (all levels; many industries)
Office automation expert
Online searcher
Navigation designer
Network programmer
Network designer
Network support specialist
Project manager
Software designer
Systems analyst
Technology licensure and testing
Web database implementer
Web designer
Web editor
Web programmer
Web database implementer

Appendix B: Letters of Support

From:

- Dr. Jane Robbins, Dean and Professor, School of Information Studies, Florida State University
- Dr. Ida Flynn, Assistant Professor and Director, Undergraduate Program, School of Information Sciences, University of Pittsburgh
- Dr. Thomas Childers, Associate Dean and Professor, College of Information Studies and Technology, Drexel University

Appendix C: Focus Group Summary Report

FOCUS GROUP ON THE BSIS, SILS, UNC-CH

March 24, 2000

A focus group, led by Evelyn Daniel, was held at SILS on March 24, 2000. The purpose of the meeting was to elicit input from potential employers about the skills and knowledge that graduates of the Bachelor of Science degree in Information Science (BSIS) should acquire during their program. The participants included:

Angela Andrews, Lockheed Martin
David Ferriero, Duke University Libraries
Eric Gregg, Fusion Ventures
Jeff Hoffman, WebslingerZ
John MacMullen, Nortel
George Schlukbier, TotalSports.net

In addition, Ruth Monnig, Joanne Marshall, and Barbara Wildemuth participated in the session.

In general, the focus group participants responded with great enthusiasm for the proposed degree program. They were excited about the program content and believe that it will help to fill a great need for them, as potential employers of the program's graduates. In addition, they had specific suggestions for improving the program proposal, discussed below.

Attributes to be Considered for Admission

During the admissions process, the participants encouraged SILS to consider some of the same attributes that they, as employers, consider when hiring new staff. We should try to recruit applicants who are:

- *Adaptable (to new technologies, to new organizational needs),*
- Willing to take risks (to be willing to try something, even if it might fail),
- Both micro and macro thinkers (attending to details while still keeping the big picture in mind),
- Innovative, creative,
- Self-directed (able to develop a project at an appropriate level of complexity),
- Passionate about technology and its applications in the world, and
- Persistent.

In addition, it was emphasized that grades should not be used as the primary criterion for admissions. The attributes listed above are more critical to long-term success.

Skills and Knowledge of BSIS Graduates

The participants mentioned a variety of skills and knowledge that they believed would be important for the BSIS students to obtain in order to be effective in the workplace. These included:

- *Information gathering and analysis: competitor analysis, market research, industry analysis, analysis of user transaction logs.*
- *Information architecure: organizing large quantities of information so that it can be searched and used, developing systems of organization, creating content.*
- Basic technology-related knowledge and skills: to be able to construct and support the infrastructure for sharing knowledge within the organization, to be able to quickly diagnose

technical problems, to be able to learn new technologies quickly, the role of technology in the business enterprise.
- Business-related knowledge: business plans, business cases, marketing skills, understanding of financial concepts in business, e-commerce.
- Interpersonal skills: working in a team environment with a diversity of colleagues, communicating with management in both receiving assignments and presenting results, active listening, public speaking.
- Project management: scheduling and control, financial management.

Some of these areas are covered in the curriculum described in the current proposal, while others need to be added in some way, either as SILS courses or electives from other schools/departments.

Relationship between Coursework and Work Experience in Undergraduate Education

The participants assigned high value to practical work experience that students could obtain during their undergraduate careers. For some employers, this would allow them to hire undergraduates at levels above entry level. Others were particularly interested in having graduates demonstrate their technical expertise through development of a portfolio of projects completed as students.

Based on their desire for graduates having work experience during their undergraduate years, the participants strongly encouraged us to allow students to earn academic credit for multiple internships.

Additional Comments about the Proposed Curriculum

There was significant discussion of the information technology concentration. It was considered an essential part of the program, but participants urged that we consider requiring it of *all* BSIS students.

In addition, the participants suggested that we consider augmenting the amount of business-related content in the concentration on management of information resources. Additional content should also be added to the curriculum in the following areas: business communication and funding in the new economy.

Career Options for BSIS Graduates

The following job titles were suggested as plausible possibilities for BSIS graduates: information architect, information technology planner, navigation designer, information consultant, Web editor, help desk staff, database trainer, evaluation and research specialist/consultant, competitor analyst, and information technologist.

It was suggested that the following job titles be dropped from the list: applications programmer, interface designer, Web designer, chief information officer, business analyst, customer service specialist, and data miner.

Report prepared by: Barbara Wildemuth
June 15, 2000

Appendix D: Projected Course Matrix, Years 0-4

Key:

Shading	New course added to the curriculum for this program
☑	New section added to an existing course
✓	Section of a course

Course frequency:

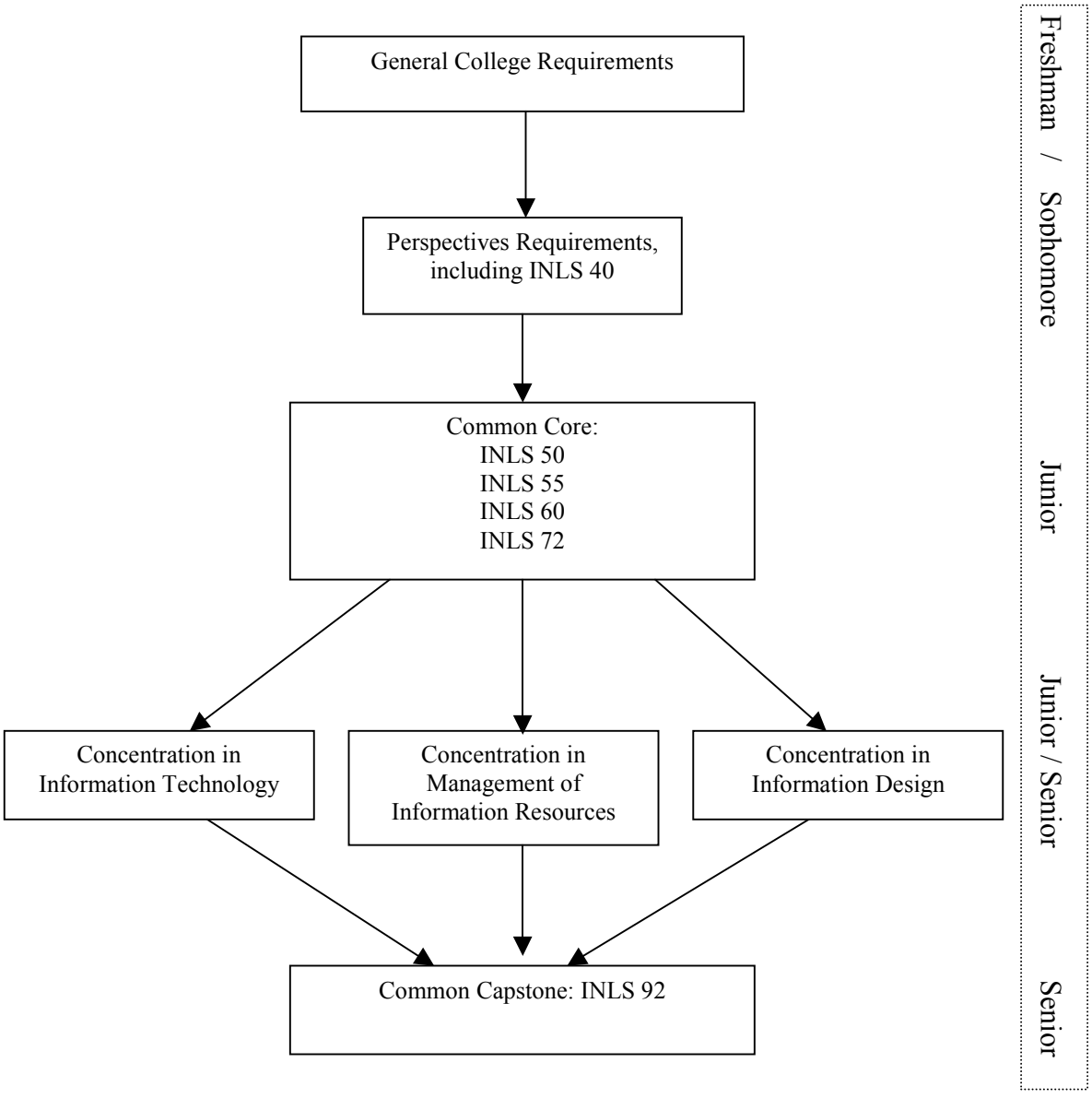
S	Every semester
A	Annual
B	Biennial
I	Intermittent

Last Taught	Freq.	Course	Course Title	Fall Year0	Spring Year0	Fall Year1	Spring Year1	Fall Year2	Spring Year2	Fall Year3	Spring Year3	Fall Year4	Spring Year4
	S	40	Retrieving and Analyzing Information		✓✓	✓✓	✓✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓✓	✓✓✓	✓✓✓✓
Spring 2000	S	50	Information Technology Applications	✓✓	✓✓	✓✓☑☑	✓✓	✓✓☑☑	✓✓	✓✓☑☑	✓✓	✓✓☑☑	✓✓
	S	55	Info. Use for Organizational Effectiveness			✓	✓	✓✓	✓	✓✓	✓	✓✓	✓
Spring 2000	A	60	Info. System Analysis and Design		✓	✓☑	☑	✓☑	✓	☑☑	✓	✓☑	☑
	A	62	Human-Machine Interaction			✓		✓	✓	✓		✓	✓
	A	64	Information Architecture				✓	✓	✓		✓	✓	✓
Spring 2000	A	70	Organizing and Retrieving Information	✓		✓	✓						
	A	72	Database Concepts and Applications			✓	✓✓	✓	✓✓	✓	✓✓	✓	✓✓
Fall 1999	A	80	Data Communication and Networks	✓		☑	✓	✓		✓	✓	☑	
NA	S	90	Independent Study										
	S	91	Internship in Information Science				✓	✓	✓	✓	✓	✓	✓
	S	92	Emerging Topics in Information Science				✓	✓	✓✓	✓	✓✓	✓	✓✓
	S	95	Honors Thesis										
	A	102	Information Systems Applications			✓		✓	✓	✓		✓	✓
Spring 2000	A	108	History of Books and Libraries				✓		✓		✓		✓
NA	I	110	Selected Topics	✓	✓	✓	✓	✓	✓	✓✓	✓✓	✓✓	✓✓
Spring 2000	S	111	Information Resources and Services I	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	✓
CS course	CS	115	Natural Language Processing										
Fall 1999	A	121	Storytelling	✓		✓		✓		✓		✓	
Spring 2000	A	122	Young Adult Lit. and Related Materials		✓		✓		✓		✓		✓
Fall 1999	A	123	Children's Lit. and Related Materials	✓		✓		✓		✓		✓	
Spring 2000	S	131	Management of Information Agencies	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	✓
	A	134	Developing Info. Products and Services				✓	✓	✓		✓	✓	✓
Spring 2000	S	150	Organization of Information	✓	✓	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	✓
Spring 2000	S	151	Organization of Materials I	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Spring 2000	S	153	Resource Selection and Evaluation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Spring 2000	A	161	Non-Numeric Programming Sys. Apps.		✓		✓		✓		✓		✓
Spring 2000	S	162	Systems Analysis	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	✓☑	✓✓	✓☑

Last Taught	Freq.	Course	Course Title	Fall Year0	Spring Year0	Fall Year1	Spring Year1	Fall Year2	Spring Year2	Fall Year3	Spring Year3	Fall Year4	Spring Year4
Fall 1998	B	165	Records Management		✓				✓				✓
	A	168	CSCW Design			✓		✓		✓		✓	
Spring 1999	B	170	Apps. of Natural Language Processing		✓				✓				✓
Spring 2000	S	172	Information Retrieval	✓	✓	✓	✓	✓	✓✓	✓	✓☑	✓	✓✓
	A	176	Digital Libraries		✓		✓		✓		✓		✓
Spring 2000	S	180	Human Information Interactions	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	✓
Spring 2000	S	181	Internet Applications	✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
Fall 1999	A	182	Introduction to Local Area Networks	✓		✓		✓	☑	✓		✓	☑
Spring 2000	A	183	Distributed Systems and Administration		✓		✓		✓		✓		✓
Spring 2000	A	184	Protocols and Network Management		✓		✓		✓		✓		✓
Spring 2000	A	186	TCP/IP Networks and Network Prog.		✓		✓		✓		✓		✓
Summer 1999	B	187	Information Security			✓				✓			
Fall 1999	A	191	Advanced Internet Applications			✓		✓		✓		✓	
Fall 1999	A	201	Research Methods	✓✓✓		✓✓✓		✓✓✓		✓✓✓		✓✓✓	
Fall 1998	B	203	Information Systems Effectiveness			✓				✓			
Fall 1999	I	204	Intnl. and Comparative Librarianship			✓				✓			
NA	I	210	Intermediate Selected Topics	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Spring 2000	S	211	Information Resources and Services II	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fall 1999	A	213	User Perspectives on Info. Sys. and Serv.	✓		✓		✓		✓		✓	
Summer 1999	A	214	User Education	✓		✓		✓		✓		✓	
Spring 1999	B	216	Health Science Environment		✓				✓				✓
Spring 1999	B	218	Info. Services and Specific Populations		✓				✓				✓
Spring 2000	B	222	Science Information				✓				✓		
Spring 2000	A	224	Humanities and Social Science Info.		✓		✓		✓		✓		✓
Fall 1999	B	225	Health Sciences Information			✓				✓			
Spring 1999	B	226	Serials		✓				✓				✓
Spring 2000	A	227	Business Information		✓		✓		✓		✓		✓
Fall 1999	A	228	Public Documents	✓		✓		✓		✓		✓	
Spring 2000	B	229	Law Libraries and Legal Information				✓				✓		
Fall 1997	I	232	Library Effectiveness			✓				✓			
Spring 1998	B	233	Managing in the Info. Systems Org.		✓				✓				✓
Fall 1994	I	234	Human Resources Management			✓				✓			
Spring 2000	B	237	Marketing of Information Services				✓				✓		
Fall 1999	B	241	The School Library Media Center			✓				✓			
Spring 1999	B	242	Curriculum Issues & the School Librarian		✓				✓				✓
Spring 2000	B	243	Services to Children and Young Adults				✓				✓		

Last Taught	Freq.	Course	Course Title	Fall Year0	Spring Year0	Fall Year1	Spring Year1	Fall Year2	Spring Year2	Fall Year3	Spring Year3	Fall Year4	Spring Year4
Spring 1999	A	244	Admin. of Archives and Manuscript Coll.		✓		✓		✓		✓		✓
Spring 2000	B	246	Music Librarianship				✓				✓		
Spring 1999	A	247	Special Libraries & Information Brokering		✓		✓		✓		✓		✓
Fall 1999	A	251	Organization of Materials II	✓		✓		✓		✓		✓	
Fall 1999	A	254	Preservation of Library & Archive Materials	✓		✓		✓		✓		✓	
Spring 2000	S	256	Database Systems I	✓	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	✓	✓✓
Spring 2000	A	257	User Interface Design		✓		✓		✓		✓		✓
Fall 1999	A	258	Database Systems II	✓		✓		✓		✓		✓	
Spring 2000	A	259	Web Databases		✓		✓		✓		✓		✓
Spring 1997	B	263	Knowledge-Based Systems		✓						✓		
Spring 1999	A	265	Abstracting and Indexing		✓		✓		✓		✓		✓
NA	S	299	Supervised Field Experience										
NA	S	300	Study in Information and Library Science										
to be offered		301	Research Issues and Questions I	✓		✓		✓		✓		✓	
to be offered		302	Research Issues and Questions II		✓		✓		✓		✓		✓
Spring 2000	I	304	Seminar in Theory Development				✓				✓		
Fall 1998	I	308	Seminar in Teaching and Academic Life										
Spring 1999	S	309	Seminar in Teaching Practice		✓		✓		✓		✓		✓
NA	I	310	Advanced Selected Topics		✓		✓		✓		✓		✓
Spring 1992	I	320	Seminar in Children's Literature										
Spring 1994	I	326	Seminar in Popular Materials in Libraries					✓					
Spring 2000	A	341	Seminar in Public Libraries		✓		✓		✓		✓		✓
Spring 2000	A	342	Seminar in Academic Libraries	✓		✓		✓		✓		✓	
Spring 2000	A	349	Seminar in Rare Book Collections		✓		✓		✓		✓		✓
Spring 2000	A	372	Seminar in Information Retrieval		✓		✓		✓		✓		✓
Fall 1998	B	376	Seminar in Information	✓				✓				✓	
NA	S	379	Research in Information Retrieval										
Fall 1998	A	382	Seminar in Communication		✓				✓			✓	
NA	S	389	Research in Communication										
NA	S	393	Master's Paper										
NA	S	394	Doctoral Dissertation										
NA	S	399	Research in Info. and Library Science										
		SECTIONS IN NEW CLASSES		**0**	**3**	**7**	**11**	**12**	**14**	**10**	**12**	**13**	**15**
		ADDED SECTIONS IN EXISTING CLASSES		**0**	**0**	**4**	**1**	**3**	**1**	**4**	**2**	**4**	**3**
		TOTAL CLASS SECTIONS		**36**	**48**	**56**	**56**	**55**	**61**	**60**	**61**	**57**	**63**

Appendix E: BSIS Structure



Appendix F: Faculty Resumes

David Wildon Carr

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Education

Ph.D., Rutgers - The State University, in Library and Information Studies, 1979. Dissertation: *The agent and the learner: A study of critical incidents and contexts in assisted adult library learning.* Dissertation Chairman: Ernest R. DeProspo Jr. [352 leaves]

M.L.S., Rutgers - The State University, in Library Service, 1973.

M.A., Teachers College, Columbia University, in Psychology and Education of the Gifted and Teaching of English in Secondary Schools, 1968.

B.A., Drew University, in English Literature, 1967.

Experience

Associate Professor, School of Information and Library Science, University of North Carolina at Chapel Hill, August 1998 – present.

Chair, Library and Information Studies Department and Director of the Master of Library Service Program, School of Communication, Information and Library Studies, Rutgers University, May 1995 – May 1998.

Associate Professor, Library and Information Studies Department, School of Communication, Information and Library Studies, Rutgers University, 1986-1998.

Acting Associate Dean for Academic Affairs, Graduate School of Education, Rutgers University, 1985-1986.

Visiting Researcher, Education Department, American Museum of Natural History, 1984.

Associate Professor of Adult Education, Department of Educational Administration, Supervision, and Adult Education, Graduate School of Education, Rutgers University, 1982-1986.

Associate Professor, Bureau of Educational Research and Development, Graduate School of Education, Rutgers University, 1980-1985.

Bibliographer for Professional Schools, Archibald Stevens Alexander Library, Rutgers University, 1976-1980. Librarian III (Assistant Professor), 1976-1979; Librarian II (Associate Professor with tenure), 1979- .

Coadjutant Faculty Member, Graduate School of Library and Information Studies, Rutgers University, 1975-1980.

Reference Librarian, Mabel Smith Douglass Library, Douglass College, 1973 -1976. Librarian III (Assistant Professor).

Teacher of Humanities, East Brunswick, N.J., Public Schools, 1971-1973.

Teacher of English, Princeton, N.J., Public Schools, 1968-1971.

Selected Articles, Book Chapters, Published Addresses

Alliance against compromise. *Museum News.* Forthcoming.

The need for the museum. *Museum News*. 78(2):31-32, 34-35, 56-57, March-April, 1999. [Keynote address, The Museum as a Place of Learning, Cornell University, 1998.]

Tensions of teaching. *Journal of Education for Library and Information Science*, Summer 1998.

We are stronger than we think. *New Jersey Libraries* 31(4):4-6, Fall 1997.

Themes of memory. *The Council of American Jewish Museums Newsletter* 6(1):1, 9-13, June 1997.

Rex's Lending Center and the information life of the child at the Children's Museum of Indianapolis. In Kay E. Vandergrift, ed., *Ways of Knowing: Literature and the Intellectual Life of Children.* (pp. 89-118). Lanham, Maryland: Scarecrow Press, 1996.

Cultural institutions and lifelong learning: Reading the tracks. In Melissa Buckingham, ed., *The Library as a Resource for the Adult New Reader.* (pp. 15-22). New York: The New York Public Library, 1996.

The meanings of us: Notes on the profession and the person. *New Jersey Libraries* 29(4):4-7, Fall 1996.

The personal past in public space. *Journal of Museum Education* 20(2):3-5, Spring/Summer 1995. [Selected for republication in *Meeting the Demands of the Educational Mission*, Museum Education Roundtable, forthcoming.]

Cultural institutions as structures for cognitive change. In Lorraine Cavaliere and Angela Sgroi, eds., Learning for Personal Development. New Directions in Continuing Education. (pp. 21-35). San Francisco: Jossey-Bass, 1992.

Teaching is the most difficult task. *ALISE Alert* 2(2):4-5, 8, February-March 1994.

Thinking for the future museum. *Hand to Hand* 7(3):1, 3-4, 7-8, Fall 1993.

Minds in museums: The cognitive management of cultural institutions. *Teachers College Record* 93(1):6-27, Fall 1991.

Living on one's own horizon: Cultural institutions, school libraries, and lifelong learning. *School Library Media Quarterly* 19(4):217-222, Summer 1991. [Selected for recognition by Library Instruction Round Table, American Library Association, 1991.]

Selected Consulting

American Museum of Natural History, Aspen Institute, Brooklyn Museum, Children's Museum of Indianapolis, Cooper-Hewitt Museum, Historical Society of Pennsylvania, The Jewish Museum, Lila Wallace-Reader's Digest Fund, Institute of Museum and Library Services, Metropolitan Museum of Art, Museum of Fine Arts - Houston, Museum of Jewish Heritage, National Endowment for the Humanities, National Interfaith Hospitality Networks for the Homeless, National Trust for Historic Preservation, Old Sturbridge Village, Rhode Island School of Design Museum, Strong Museum, W. K. Kellogg Foundation.

Recognitions

Certificate of Appreciation. Museum Education Roundtable, Cleveland, Ohio, April 26, 1999.
Faculty Fellow, Rutgers University, New Brunswick Teaching Excellence Center, 1995-96.
Teaching Excellence Award, Association for Library and Information Science Education, 1994.
Associate in Applied Science (Honoris causa), Essex County College, Newark, New Jersey, 1994.

Memberships

American Association of Museums
American Educational Research Association
Association for Library and Information Science Education

Evelyn H. Daniel

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Education
Ph.D. Information Science, University of Maryland, 1974
MLS Library Science, University of Maryland, 1969
AB History, University of North Carolina at Wilmington, 1968

Experience
1985-present - Professor and Dean Emeritus, School of Information and Library Science, University of North Carolina at Chapel Hill (Dean, 1985-1990)

Spring 1998 - Professor, Distance Education Course in Management for School of Information Studies, Syracuse University

1996- present - Professor, Distance Education Courses in Marketing and Grant-writing. Summers for Graduate School of Information and Library Science, University of Illinois at Champaign-Urbana

1976-85 - Dean and Professor, School of Information Studies, Syracuse University (Assoc. Prof., 1976-1981; Asst. Dean 1980-81)

1974-76 - Assistant Professor, Graduate Library School, University of Rhode Island

1974-75 - Visiting Associate Librarian/Media Specialist, Learning Activities Resource Center, California State University, Chico

1972-74 - Assistant Professor, College of Library Science, University of Kentucky

1969-72 - Instructor and Director, Undergraduate Library Science Education Program, College of Education, University of Maryland and Director of Admissions, School of Library and Information Services, University of Maryland

Honors
AB, Magna cum laude, 1968
NDEA Fellowship, University of Maryland, 1968-69
Beta Phi Mu Honorary Society

Teaching Areas
Management of Information Services; Communication Processes; Marketing; Strategic; Planning; Education for Library and Information Science; Information Transfer and Scholarly Communication; Corporate Librarianship and Information Brokering, Curriculum Issues for School Library Media Specialists; User Education

Publications (Last Few Years)
ALISE Statistical Report, 1999. co-edited with J. Saye). Forthcoming. ALISE, 1999.

ALISE Statistical Report, 1998. (co-edited with J. Saye). ALISE, 1998. Also published on web as http://ils.unc.edu/ALISE/1998.

ALISE Statistical Report, 1997. (co-edited with J. Saye). ALISE, 1997.

"Faculty Governance," *Encyclopedia of Library and Information Science*. 1997.

"Report on Library/Information Science Education," *Bowker Annual* 1993.

"Quality Control of Documents," *Library Trends* 41 (4) (Spring 1993) 642-661.

"Faculty Governance," pp. 151-166 in *The Management of Library and Information Studies Education*, H. Totten, ed. Haworth Press, 1992.

"Library/Information Science Education: The Research Ethos," Chapter 9 of *Library/Information Science Research: Perspective and Strategies for Improvement* (eds. C. McClure and P. Hernon) Norwood, NJ: Ablex 1991.

"Library and Information Science Education," *ALA Annual*, 1991. Chicago: American Library Association, 1991.

Research Proposals and Funded Projects

"Plant Information Center Project," Institute for Museum and Library Services. (with co-project investigator Peter White from NC Botanical Garden). Submitted 4/99. $206,622. Pending.

"Internet Training for School Librarians and School Technologists," HEA Title II-B, Library Education and Human Resource Development Program. U.S. Dept. of Education. 1997-98. Funded for $88,000.

"North Carolina Botanical Information Network" (with co-project investigators from UNC-CH Dept. of Biology, NC Botanical Garden, and NC Herbarium. 10/97 - 7/98. Funded for $70,000.

"Master's level fellowships for students seeking careers in the specialty areas of school library media specialists and children's and young adult services in public libraries," HEA Title II-B, Library Education and Human Resource Development Program. U.S. Dept. of Education. 9/l/96-8/31/97. Awarded $66,000.

"Freedom Support Act Graduate Fellowships," International Research and Exchanges Board (IREX). Three fellows for 1996-97; two fellows for 1995-96; two fellows for 1994-95. Funded for $72,037. plus living expenses.

"Information Services to Small Businesses from Local Public Libraries." American Library Association (Baber Research Grant), September 1990-August 1991. Funded for $10,000.

Bert J. Dempsey

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Education

1994 - Ph.D. University of Virginia, Charlottesville, Virginia. School of Engineering and Applied Sciences. Major: Computer Science. Dissertation Title: *Retransmission-Based Error Control for Continuous Media Traffic in Packet-Switched Networks.*

1991 - M.S. University of Virginia, Charlottesville, Va. Major: Computer Science.

1986 - M.S. University of Virginia, Charlottesville, Va. Major: Mathematics.

1983 - B.A. Davidson College, Davidson, N.C. Major: English (Magna Cum Laude).

Experience

1995-Present - Assistant Professor, School of Information and Library Science, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina. (Adjunct Assistant Professor, Department of Computer Science, 1998-present).

1994-1995 - Research Associate, Department of Computer Science, University of Virginia. Charlottesville, Virginia.

1989-1994 - Research Assistant, Department of Computer Science, University of Virginia. Charlottesville, Virginia.

1986-1987 - Visiting Assistant Professor , Department of Mathematics, Washington and Lee University, Lexington, Virginia.

Relevant Recent Publications

Matthew Lucas, Bert J. Dempsey and Alfred C. Weaver, *MESH-R: Large-Scale, Reliable Multicast Transport*, IEEE International Conference on Communication (ICC '99), Vancouver, B.C., June 1999 (to appear).

Micah Beck, T. Moore, Bert Dempsey, R. Chawla, *Portable Content Representation of Internet Content Channels in I2-DSI*, 4th International Web Caching Workshop (WCW '99), San Diego, Calif., March 30-April 2, 1999.

Matthew Lucas, Bert J. Dempsey, Dallas Wrege and Alfred Weaver, *An Efficient Self-Similar Traffic Model for Wide-Area Network Simulation*, IEEE GLOBECOM '97, Phoenix, Ariz., November 1997.

Matthew Lucas, Dallas Wrege, Bert Dempsey, Alfred Weaver, *Statistical Characterization of Wide-Area IP Traffic*, 6th International Conference on Computer Communications and Networks (IC3N'97), Las Vegas, NV, September 1997.

Bert J. Dempsey, Matthew Lucas and A. C. Weaver, "Design and Implementation of a High-Quality Video Distribution System using XTP Reliable Multicast," in *Multimedia: Advanced Teleservices and High Speed-Communication Architectures*, Ralf Steinmetz (editor), Springer-Verlag, 1994, pp. 376--387.

Additional Selected Publications

Bert J. Dempsey, Robert C. Vreeland, Robert G. Sumner Jr., Kiduk Yang, "Design and Empirical Evaluation of Search Software for Legal Professionals on the WWW," *Information Processing & Management*, (in press).

D. H. Sonnenwald, G. Marchionini, B. M. Wildemuth, B. J. Dempsey, C. L. Viles, H. R. Tibbo and John B. Smith. *Collaboration Services in a Participatory Digital Library: An Emerging Design*. COLIS3, Dubrovnik, Croatia, May 1999.

G. DeAngelis, B.J. Dempsey, S. Berr, L. Fajardo, J. Sublett, B. Hillman, A.C. Weaver, K. Berbaum, S. Dwyer, "Diagnostic Efficacy of Compressed Digitized Real-Time Sonography of Uterine Fibroids," *Academic Radiology*, 4(2):83--90, 1997.

Bert J. Dempsey, Jorg Liebeherr and Alfred Weaver, "On Retransmission-Based Error Control for Continuous Media Traffic in Packet-Switching Networks," *Computer Networks and ISDN Systems*, 28(5):719—736, 1996.

W. Strayer, Bert J. Dempsey, and A.C. Weaver , *XTP: The Xpress Transfer Protocol*, Addison-Wesley, Reading, Mass, 1992, 272 pgs. Japanese language translation, Addison-Wesley Toppan, Tokyo, 1995.

Recent Collaboration

Micah Beck, CompSci, University of Tennessee at Knoxville
Rajeev Chawla, Sun Microsystems
Gia DeAngelis, Radiology, University of Virginia
Paul Jones, SILS, UNC-CH
Matthew Lucas, CompSci, University of Virginia
Gary Marchionini, SILS, UNC-CH
Terry Moore, CompSci, University of Tennessee at Knoxville
John B. Smith, CompSci, UNC-CH
Helen R. Tibbo, SILS, UNC-CH
Charles L. Viles, SILS, UNC-CH
Robert Vreeland, Law School, UNC-CH
Alfred C. Weaver, CompSci, University of Virginia
Barbara Wildemuth, SILS, UNC-CH
Dallas Wrege, IBM

Graduate Student Advising

Matthew Lucas (UVA- CompSci), Ph.D. 1998
Zhiwei Xiao (UNC- CompSci)
Debby Weiss, UNC SILS
Joel Dunn, UNC SILS
Master's student advised total (12)
PhD students advised (4), committee member (5)

Claudia J. Gollop

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Education

Ph.D., Library and Information Science, University of Pittsburgh, 1993
MLS, Library Science, Columbia University, 1975
BA, Sociology, City College-CUNY, 1974

Experience

1994-present: Assistant Professor, School of Information and Library Science, University of North Carolina at Chapel Hill, 1993-1994: Post Doctoral Fellow, School of Information Science, Library and Information Science Dept., University of Pittsburgh (Pa.)

1989-1990: Circulation Librarian, Fiorello H. LaGuardia Community College, New York, N.Y.

1986-1989: Librarian, Katharine Gibbs School, New York, N.Y.

1984-1986: Librarian, New York Public Library, New York, N.Y.

1977-1981: Administrator, Information Services, Earl G. Graves Inc., New York, N.Y.

Selected Publications

Gollop, C. J. "Library and information science education: Preparing librarians for a multicultural society." (1999). (Refereed). *College and Research Libraries* 60(4).

Wilson, F.L, Baker, L.M., Brown-Syed, C., Gollop, C.J. "An analysis of the readability and cultural content of information on NCI's website: CancerNet&trade." (1999). (Refereed). *Seminars in Oncology Nursing*. (Submitted) 16 manuscript pages.

Lipscomb, C.E., Moran, B.B., Jenkins, C.G., Cogdill, K.W., Friedman, C.P., Gollop. C.J., Moore, M.E., Morrison, M.L., Tibbo, H.R., Wildemuth, B.M. (1999). "Feasibility and marketing studies of health sciences librarianship education programs." (Refereed). *Bulletin of the Medical Library Association*, 87(1), 50-7.

Gollop, C. J. "African Americans and consumer health information (CHI)." (1998). In E. J. Josey Ed.) *The Handbook of Black Librarianship* (2nd ed.). In press. Lanham, MD: Scarecrow Press, Inc.

Gollop, C.J. "Health Information-Seeking Behavior and Older African American Women." (1997). (Refereed). *Bulletin of the Medical Library Association* 85(2), 141-6.

Gollop, C. J. "Where have all the nice old ladies gone?: Researching the health information-seeking behavior of older African American women." (1997). In K.M. Vaz (Ed.), *Oral narrative research with black women*. Thousand Oaks, Calif.: Sage Publications, Inc., 143-155.

B. Moran, C. Jenkins, C. Friedman, C. Lipscomb, C. Gollop, M. Moore, P. Morrison, H. Tibbo, and B. Wildemuth. (1996). "Preparing Tomorrow's Health Sciences Librarians: Feasibility and Marketing Studies." (Refereed). *Bulletin of the Medical Library Association*, 84(4), 541-8.

Josey, E. J. and Gollop, C. J. "Improving Library Services to the Older Multicultural Community." In *Toward the 1995 White House Conference on Aging: Priorities and Policies for Library and Information Services for Older Adults.* (Abstracted). National Commission on Libraries and Information Science. Proceedings of a National Pre-White House Conference on Aging Philadelphia, Pa., Feb. 3, 1995), p 198-9.

Gollop, C. J. (1992). "Selection and acquisition of multicultural materials at the libraries of the City University of New York." (Refereed). *Urban Academic Librarian*, 8 (Winter 91-92), 20-9.

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Education

Ph.D. 1998 - School of Information Sciences, University of Pittsburgh.
M.S., 1992 - School of Library Service, Columbia University (Specialization: Bibliographic Control and Archives/Records Management).
B.A., 1987--University of Rochester (Double major: Political Science and Art History).

Experience

1999-Present - Assistant Professor, School of Information and Library Science, University of North Carolina at Chapel Hill.

1998-1999 - Graduate Research Assistant, Pennsylvania Educational Network Digital Object Repository (PEN-DOR).

1995-1998 -Teaching Fellow, School of Information Sciences, University of Pittsburgh.

1994-1995 - Coordinator of Special Collections Cataloging (Centerwide) and Senior Cataloger, Moving Image and Recorded Sound Division, Schomburg Center for Research in Black Culture, New York Public Library.

1993-1994 - Collection Manager, Photographs and Prints Division, Schomburg Center for Research in Black Culture, New York Public Library.

1992-1993 - Technical Services Librarian, Bank Street College of Education.

1992-1993 - Project Archivist and Consultant, Special Collections, New York Botanical Garden.

Summer 1992 - Project Archivist, Archives & Records Management Program, New York Public Library.

Selected Professional Activities

Member of the editorial board of the *Journal of Internet Cataloging*, 1998-Present.

American Library Association (ALA), 1992-Present.

Association of Library Collection and Technical Services (ALCTS), 1992-Present.

Library and Information Technology Association (LITA), 1993-Present.

Ad-hoc Chair - Online Subject Access Group for the Authority Control Interest Group (ACIG/ALCTS-LITA), 1997-Present.

Member - ALCTS Subject Analysis Subcommittee on Metadata, 1997-Present

American Society for Information Science (ASIS), 1997-Present.

Association of Computing Machinery (ACM), 1997-Present.

Special Interest Group/Information Retrieval (SIG/IR), 1997-Present.

Association of Library and Information Science Educators (ALISE), 1997-Present.

Society of American Archivists (SAA), 1992-Present

Chair - Visual Materials Committee on Cataloging and Access (VIMCAR), 1995-1997.

Member - Committee of Archival Information Exchange (CAIE), 1995-1997.

Selected Publications

Greenberg, J. (editor). (forthcoming). *Metadata Developments: Facilitating Resource Discovery of Educational Resources in the Digital Environment.* New York: Haworth Press.

Fullerton, K., Greenberg, J., Rasmussen, E., & Stewart, D. (forthcoming). "Developing and Implementing a Metadata Scheme for the PEN-DOR Project." *Journal of Internet Cataloging*.

Fullerton, K., Greenberg, J., Rasmussen, E., & Stewart, D. (1999). *A Digital Library for Education: The PEN-DOR Project. The Electronic Library*, 17 (2), 75-82.

Greenberg, J. (1998). "On Natural Language Processing''s Applicability to Archival Properties and Archival Objectives." *American Archivist*, 61(2): 400-424.

Cox, R., Greenberg, J., & Porter, C. (1998). "Access Denied: The Discarding of Library History." *American Libraries*, 29(4): 57-61.

Greenberg, J . (1997). "Reference Structures: Stagnation, Progress, and Future Challenges." *Information Technology and Libraries*, 16(4): 108-119.

Greenberg, J. (1996). "Cataloging Ephemera: MARC-AMC Options for Subject Control." *Popular Culture in Libraries*, 4(1): 71-91.

Greenberg, J. (1995). "On Schomburg and NACO." *Research Library Notes* 6(2): 18-19.

Greenberg, J. (1993). "Intellectual Control of Visual Archives: A Comparison Between the Art & Architecture Thesaurus and The Library of Congress Thesaurus for Graphic Materials," *Cataloging and Classification Quarterly* 16(1): 85-117

Recent Collaborators

Collaborators on the Pennsylvania Educational Network Digital Object Repository (PEN-DOR) project.

Karen Fullerton, Project Director, School of Information Sciences, University of Pittsburgh

Maureen W. McClure, Associate Professor, Department of Administrative and Policy, School of Education at the University of Pittsburgh

Edie Rasmussen, Associate Professor, School of Information Sciences, University of Pittsburgh

Darin Stewart, Project Director and Principal Architect, School of Information Sciences, University of Pittsburgh

Stephanie W. Haas

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Education

9/84-8/89: The University of Pittsburgh, Pittsburgh, Pennsylvania. Ph.D. in Information Science. Dissertation: *Case Hierarchy Based Representations and Procedures for Domain Analysis and the Construction and Porting of Natural Language Interfaces.*

7/79-8/82: Wesleyan University, Middletown, Connecticut. Master of Arts in Liberal Studies in Arts and Literature.

6/74-12/77: The University of Connecticut, Storrs, Connecticut. Bachelor of Science, School of Education. Major: Music; Minor: Education.

Experience

7/89-present: School of Information and Library Science, University of North Carolina at Chapel Hill. Associate Professor, 7/95 - present. Assistant Professor, 7/89 - 6/95.

Courses Taught: Information Models, Database I, Database II, Web Databases, Systems Analysis, Applications of Natural Language Processing, Information Retrieval.

Honors

School of Information and Library Science Outstanding Teaching Award, May 1997.

American Society for Information Science Outstanding Information Science Teacher of the Year, 1996.

Co-author of The Constituent Object Parser: Syntactic Structure Matching for Information Retrieval, selected as one of the six Best Papers of SIGIR '89.

Recipient of the 1988 ASIS/ISI Information Science Doctoral Dissertation Scholarship.

Selected Grants and Contracts Received

Bureau of Labor Statistics, February 2000, $18,560. Terminology Crosswalk for LABSTAT.

Pew Charitable Trusts, February, 1999. Presidential Appointments Project. With Martha J. Kumar and Terry Sullivan. Designing and building information system to collect and distribute information for the forms that nominees must submit.

Bureau of Labor Statistics, September 1998, $22,680. Investigation into the Requirements and Structure of a Knowledge Organization for BLS Published Information.

Instructional Technology Award, Spring 1997, $58,817. Evaluation of an Internet Multimedia Studio. Co-investigator with Bert J. Dempsey, Diane Sonnenwald and Helen R. Tibbo.

Selected Publications

Haas, Stephanie W. & Grams, Erika S. (1999). "Readers, authors, and page structure: A discussion of four questions arising from a content analysis of Web pages." *Journal of the American Society for Information Science* (to appear).

Haas, Stephanie W. & Grams, Erika S. (1998). "A link taxonomy for Web pages." *Proceedings of the 61st Annual Meeting of the American Society for Information Science*, 485-495.

Haas, Stephanie W. & Grams, Erika S. (1998). "Page and link classifications: Connecting diverse resources." *Proceedings of Digital Libraries '98 – Third ACM Conference on Digital Libraries*, 99-107.

Haas, Stephanie W. (1997). "Disciplinary variation in automatic sublanguage term identification." *Journal of the American Society for Information Science*, 48, 1, 67-79.

Haas, Stephanie W. (1996). "Natural Language Processing: Toward Large-Scale, Robust Systems." In Williams, M. (Ed*.) Annual Review of Information Science and Technology*, Vol. 31, 83-119.

Haas, Stephanie W. (1996). "Sublanguages and the Automatic Identification of Sublanguage Terms." In Kent, A. (Ed.) *Encyclopedia of Library and Information Science*, Vol. 58, Suppl. 21. New York: Marcel Dekker Inc. 302-310.

Haas, Stephanie W., Sugarman, Jeremy, & Tibbo, Helen R. (1996). "A text filter for the automatic identification of empirical articles*." Journal of the American Society for Information Science*, 47, 2, 167-169.

Haas, Stephanie W. (1995). "Domain terminology patterns in different disciplines: Evidence from abstracts." *Proceedings of the Fourth Annual Symposium on Document Analysis and Information Retrieval*, 137-146.

Losee, Robert M., Jr. & Haas, Stephanie W. (1995). "Sublanguage terms: Dictionaries, usage, and automatic classification." *Journal of the American Society for Information Science*, 46, 7, 519-529.

Haas, Stephanie W. (1995). "Quotations in scholarly text: Converting existing documents to hypertext." *Computers and the Humanities*, 28, 3, 165-175.

Haas, Stephanie W. & Losee, Robert M., Jr. (1994). "Looking in text windows: their size and composition." *Information Processing & Management*, 30, 5, 619-629.

Haas, Stephanie W. (1993). "Incomplete sentence quotations in books and journals*." Journal of the American Society for Information Science*, 44,7, 398-405.

Haas, Stephanie W. & He, Shaoyi. (1993). "Toward the automatic identification of sublanguage vocabulary." *Information Processing & Management*, 29, 6, 721-732.

Haas, Stephanie W. (1992). "Covering the vocabulary of technical abstracts using standard and specialized dictionaries." *Journal of Information Science*, 18, 363-373.

Haas, Stephanie W. (1991)."Sublanguage analysis using the Case Hierarchy." *Proceedings of the 54th Annual Meeting of the American Society for Information Science*. 196-202.

Haas, Stephanie W. (1991). "Improving the coverage of technical vocabulary in information retrieval documents using specialized dictionaries." ASIS Workshop on Language and Information Processing. 1-10.

Haas, Stephanie W. (1990). "A feasibility study of the Case Hierarchy model for the construction and porting of natural language interfaces." *Information Processing & Management*, 26, 5, 615-628.

Metzler, Douglas P., Haas, Stephanie W., Cosic, Cynthia L. and Weise, Charlotte A. (1990). "Conjunction, ellipsis, and other discontinuous constituents in the Constituent Object Parser." *Information Processing & Management*, 26, 1, 53-71

Haas, Stephanie W. & Metzler, Douglas P. (1989). "The flexibility of case grammar representations: A porting procedure for natural language interfaces." *International Journal of Man-Machine Studies*, 31, 535-556.

Metzler, Douglas P. & Haas, Stephanie W. (1989). "The Constituent Object Parser: Syntactic structure matching for information retrieval." *ACM Transactions on Office Information Systems*, 7, 3, 292-316.

Robert M. Losee

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Education

University of Chicago, Chicago, Ill. Ph.D., March 1986.
University of Chicago, Chicago, Ill. M.A. in Divinity, March 1978.
University of Wisconsin-Milwaukee, Milwaukee, Wisc., M.S. in Library and Information Science, May 1975.
University of Wisconsin-Milwaukee, Milwaukee, Wisc., B.A. in Linguistics, May 1973. Magna Cum Laude, with Honors in Linguistics.

Experience

University of North Carolina at Chapel Hill, Chapel Hill, N.C., 1986-present, Assistant Professor, Associate Professor (tenured), Professor

University of Wisconsin-Milwaukee, Milwaukee, Wisc., 1980, 1981, 1985-1986, Visiting Assistant Professor, Instructor, and Assistant Professor

City Colleges of Chicago, Chicago, Ill., 1975-1985, Instructor, Assistant Professor (Tenured), and Department Chairman in Business and Data Processing departments

Books

Text Retrieval and Filtering: Analytic Models of Performance, Boston: Kluwer, 1998.

The Science of Information: Measurement and Applications, San Diego: Academic Press, 1990.

Articles

"A Discipline Independent Definition of Information," *Journal of the American Society for Information Scie*nce, 48 (3) 1997, 254-269.

"Comparing Boolean and Probabilistic Information Retrieval Systems across Queries and Disciplines," *Journal of the American Society for Information Science*, 48 (2) 1997, 143-156.

"Browsing Document Collections: Automatically Organizing Digital Libraries and Hypermedia using the Gray Code," *Information Processing & Management*, 33 (2) 1997, 175-192.

"Evaluating Retrieval Performance Given Database and Query Characteristics: Analytic Determination of Performance Surfaces," *Journal of the American Society for Information Science*, 47 (1) 1996, 95-105.

"Text Windows and Phrases Differing by Discipline, Location in Document, and Syntactic Structure," *Information Processing & Management*, 32 (6) 1996, 747-767.

"Feedback in Information Retrieval," *Annual Review of Information Science and Technology*, 31 1996, 33-78. (Spink & Losee).

"Learning Syntactic Rules and Tags with Genetic Algorithms for Information Retrieval and Filtering: An Empirical Basis for Grammatical Rules," *Information Processing & Management*, 32 (2) 1996, 185-197.

"Sublanguage Terms: Dictionaries, Usage, and Automatic Classification," *Journal of the American Society for Information Science*, 46 (7) 1995, 519-529. (Losee & Haas)

"Upper Bounds for Retrieval Performance and Their Use Measuring Performance and Generating Optimal Boolean Queries: Can it Get Any Better Than This?" *Information Processing & Management*, 30 (2) 1994, 193-203.

"Term Dependence: Truncating the Bahadur Lazarsfeld Expansion," *Information Processing & Management*, 30 (2) 1994, 293-303.

"Seven Fundamental Questions for the Science of Library Classification," *Knowledge Organization*, 20 (2) 1993, 65-70.

"The Relative Shelf Location of Circulated Books: A Study of Classification, Users and Browsing," *Library Resources & Technical Services*, 37 (2) 1993, 197-209.

"A Gray Code Based Ordering for Documents on Shelves: Classification for Browsing and Retrieval," *Journal of the American Society for Information Science*, 43 (4) 1992, 312-322.

"An Analytic Measure Predicting Information Retrieval System Performance," *Information Processing & Management*, 27 (1) 1991, 1-13.

"Information in a Data Collection: Models of Database and Library Quality," *Journal of the American Society for Information Science*, 41 (5) 1990, 359-367.

"The Object-Oriented Paradigm for Library Systems Development," *Information Technology & Libraries: Journal of the Library and Information Technology Association of ALA*, 9 (1) 1990, 74-79.

"Minimizing Information Overload: The Ranking of Electronic Messages," *Journal of Information Science*, 15 (3) 1989, 179-189.

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Education

Ph.D. (Curriculum Development: Mathematics Education), Wayne State University, 1981
M.Ed. (Secondary Mathematics Education), Wayne State University, 1974
B.A. (Mathematics, English), Western Michigan University 1971

Experience

1995-1998: Professor, College of Library and Information Services, University of Maryland

1989-1995: Associate Professor with tenure; 1983-89 Assistant Professor, CLIS UMCP

1982-83 Assistant Professor, Department of Instructional Technology, Wayne State University

1978-81 Research Assistant, Detroit Center for Professional Growth and Development, Wayne State University

1971-78 Teacher, Mathematics, East Detroit Public Schools, East Detroit, Michigan

Consultant to: World Bank Group; National Science Foundation; National Library of Medicine; TextWise Inc.; PRC; Electronic Learning Facilitators; AJ Seminars; Library of Congress; Congressional Information Service; Cognetics, Inc.; Prince George's County Public Schools; Bureau of Labor Statistics

Selected Publications

Books

Marchionini, G. (1995) *Information seeking in electronic environments.* N.Y.: Cambridge University Press.

Chapters in Edited Volumes

Marchionini, G. & Komlodi, A. (1998). "Design of interfaces for information seeking." In M. Williams (Ed.). *Annual Review of Information Science and Technology*. Vol. 33. Medford, N.J: Information Today. 3-42.

Marchionini, G. (1998). "Digital Library Research and Development." In A. Kent (Ed.) *Encyclopedia of Library and Information Science*. Vol 63, Supplement 26. N.Y.:Marcel Deker. 259-279.

Marchionini, G. (1994). "Designing hypertexts: Start with an index." In R. Fidel, T Bellardo-Hahn, E. Rasmussen, & P. Smith (Eds.) *Challenges in indexing images and text.* Learned Information, Inc. 77-89.

Marchionini, G., Ashley, M., & Kortzendorfer, L. (1993). "ACCESS at the Library of Congress." *The sparks of innovation in human-computer interaction*. B. Shneiderman, Ed. Ablex Press. 251-258

Marchionini, G., Liebscher, P. & Lin, X. (1991). "Authoring Hyperdocuments: Designing for Interaction." *Interfaces for Information Retrieval*. M. Dillon (Ed.) N.Y.: Greenwood Press, 119-131.

Marchionini, G., "Evaluating Hypermedia-based Learning." (1989). *Designing Hypermedia for Learning*. D. Jonassen and H. Mandl (Eds.) Berlin: Springer-Verlag. 353-373

Papers and Articles

Marchionini, G. & Fox, E. (in press). "Progress toward digital libraries: Augmentation through integration" (Guest Editors' Introduction). *Information Processing & Management.*

Marchionini, G. (1999). "Educating responsible citizens in the information society." *Educational Technology*, 39(2), 17-26.

Marchionini, G., Plaisant, C., & Komlodi, A. (1998). "Interfaces and tools for the Library of Congress National Digital Library Program." *Information Processing & Management*, 34(5), 535-555.

Greene, S., Marchionini, G., Plaisant, C., & Shneiderman, B. (in press). "Previews and overviews in digital libraries: Designing surrogates to support visual information seeking." *Journal of the American Society for Information Science.*

Enomoto, E., Nolet, V., & Marchionini, G. (1999). "The Baltimore Learning Community Project: Creating networked community across middle schools." *Journal of Educational Multimedia and Hypermedia*, 8(1), 99-115.

Fox, E. & Marchionini, G. (1998). "Toward a worldwide digital library." *Communications of the ACM*, 41(4).

Rose, A., Ding, W., Marchionini, G., Beale, J., & Nolet, V. (in press). "Building an Electronic Learning Community: From Design to Implementation." *Proceedings of ACM CHI '98* (Los Angeles, CA, April 18-23, 1998).

Tse, T., Marchionini, G., Ding, W., Slaughter, L.& Komlodi, A. (in press). "Dynamic key frame presentation techniques for augmenting video browsing." *Proccedings of AVI '98: Advanced Visual Interfaces* (L' Aquila, Italy, May 25-27).

Marchionini, G., Nolet, V., Williams, H., Ding, W., Beale, J., Rose, A., Gordon, A., Enomoto, E., & Harbinson, L. (1997). "Content+Connectivity=Community: Digital resources for a learning community." *Proceedings of ACM DL '97.* (Pittsburgh, Pa., July 23-26, 1997), p 212-220.

Ding, W., Marchionini, G., & Tse. T. (1997). "Previewing video data: Browsing key frames at high rates using a video slide show interface." *Proceedings of the International Symposium on Research, Development, and Practice in Digital Libraries*, (Tsukuba, Japan) p. 151-158.

Slaughter, L., Shneiderman, B., & Marchionini, G. (1997). "Comprehension and object recognition capabilities for presentations of simultaneous video key frame surrogates." *Proceedings of Research and Advanced Technology for Digital Libraries*, First European Conference (Pisa, Italy, September 1-3, 1997), p. 41-54.

Marchionini, G. & Maurer, H. (1995)."The roles of digital libraries in teaching and learning." *CACM*, 38(4).

Meadow, C., Marchionini, G., & Cherry, J. (1994). "Speculations on the measurement and use of user characteristics in information retrieval experimentation." *Canadian Journal of Information Science*, 19(4), 1-22.

Marchionini, G. & Crane, G. (1994) "Evaluating hypermedia and learning: Methods and results from the Perseus Project." *ACM Transactions on Information Systems*, 12(1), 5-34.

Marchionini, G., Dwiggins, S., Katz, A. & Lin, X. "Information seeking in full-text end-user-oriented search systems: The roles of domain and search expertise." *Library and Information Science Research*, 15(1), 1993, 35-69.

Marchionini, G. (1992). "Interfaces for end-user information seeking." *Journal of the American Society for Information Science*, 43(2), 156-163. (Invited article)

Lin, X., Liebscher, P. & Marchionini, G. "Graphic Representation of Electronic Search Patterns." *Journal of the American Society for Information Science*. 42(7), 1991, 469-478.

Marchionini, G. "Making the transition from print to electronic encyclopedias: adaptation of mental models." *International Journal of Man-Machine Studies*, 30, 1989, p. 591-618.

Marchionini, G. "Information-seeking strategies of novices using a full-text Electronic Encyclopedia." *Journal of the American Society for Information Science*, 29(3), 1989, p. 165-176. (Won best paper of 1990 award)

Marchionini, G. and Shneiderman, B. "Finding facts vs. browsing knowledge in hypertext systems." *IEEE Computer*, 21(1), p. 70-80, 1988.

Selected Contracts and Grants

Principal Investigator: "User Interface for the National Digital Library Program at the Library of Congress." Library of Congress Fall 1995-Spring 1997, $220,000.

Co-Principal Investigtor:" Baltimore Learning Community." U.S. Department of Education Challenge Grant. Fall 1995-Spring 2000, $8.1 million.

Principal Investigator: "Evaluation of the Perseus Hypermedia System." Funded by FIPSE grant to Tufts University ($290,000). 1993-1996 yearly subcontracts of approximately $14,000 per year.

Principal Investigator: "A Joint effort in provision of aeronautical information." National Aeronautics and Space Administration, Summer, 1993, $11,000.

Co-Principal Investigator: "Developing a Model Information Acquisition, Analysis and Dissemination Center for Scientific Research Institutes in Developing Nations." Third World Foundation/CIESIN, Summer 1993, $62,000.

Principal Investigator: "Computer Interface design for Intermediate Results for Grateful Med." National Library of Medicine. 1992. $25,000.

Principal Investigator: "Mental Models for Adaptive Search Systems: a Theory for Information-seeking." National Science Foundation 1988-90. $71,000.

Co-Principal Investigator: Interaction of Information Retrieval Systems and Users. Council on Library Resources 1989-1990. $80,000.

Director of External Evaluation: "Perseus: An Interactive Curriculum on Classical Greek Civilization." Funded by Annenberg Foundation to Harvard University ($3,300,000). 1989-1993. $117,360.

Editorial Board Member*:* *Journal of the American Society for Information Science, Information Processing & Management, Journal of Educational Multimedia and Hypermedia, Hypermedia, Library Quarterly, Educational Technology*

Co-editor: *Journal of Digital Information*.

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Education

Ph.D. 1987 - University of Toronto, Division of Community Health, Faculty of Medicine
M.H.Sc. 1978 - McMaster University, Faculty of Health Sciences
M.L.S. 1968 - McGill University
B.A. 1966 - University of Calgary

Appointments

Jan. 1999 – present. Dean and Professor (Tenured), School of Information and Library Science, UNC-CH

Sept. 1987 – Dec. 1998. Professor (Tenured). Faculty of Information Studies. University of Toronto.

School of Graduate Studies, Full member, 1990-1998.

Cross-appointments (Status only): Department of Health Administration, 1989-1998; Centre for Health Promotion, 1991-1998; Institute for Human Development, Life-Course and Aging, 1993-1998

Sept. 1984 - Aug. 1987. Librarian/Researcher (Part-time). Continuing Medical Education. Faculty of Medicine. University of Toronto

Jan. 1983 – Aug. 1983. Director of Information Services. The Palliative Care Foundation. Toronto, Ontario

Jan. 1982 - Dec. 1982. Librarian/Researcher. Program for Educational Development. Faculty of Health Sciences. McMaster University

Sept 1970-Dec 1981 Health Sciences Library. McMaster University. (Positions held: Serials and Acquisitions Librarian 1970-71; Public Services Librarian 1972-77; Information Services Librarian (Clinical Services) 1978-82; Health Library Network Coordinator Jun-Oct 1974; Jul-Aug 1977

Graduate Faculty Experience

Ph.D. Courses

LIS3000Y Advanced Topics in Information Studies, 1997/98.
LIS3015H Advanced Studies in Online Information Retrieval, 1989-90.
LIS3730Y Information Organization and Retrieval, 1992-93.
LIS3110Y Libraries and Their Publics, 1993-94.
LIS3005Y Advanced Seminar in Research Methodologies, 1993-94.

Master of Information Studies Courses

LIS1520H Introduction to Resources and Collections, 1988
LIS2250H Health Sciences Information Resources, Annually since 1987.
LIS2660H Online Information Retrieval, Annually since 1989.

Master of Information Science Courses

LIS1518H Origins and Uses of Information for Databases, 1988-1993.
LIS2888L Directed Research (Supervisor)

Recent Research Projects

1996-98 *The use of MEDLINE and computer conferencing by dentists*. U.S. National Library of Medicine. University of Michigan/University of Toronto. $66,000. Principal investigator: Dr. W. Paul Lang; Co-investigator: JG Marshall.

1997-98 *The impact of information provided by law libraries on the quality of legal services.* American Association of Law Libraries. $13,000. Principal investigator: JG Marshall.

1997-98 *The impact of information on community and long-term care: Redefining the role of the hospital library in the changing health care environment.* OVID Technologies, $10,000. Principal investigator: JG Marshall

1995-96 *Development and Evaluation of a World Wide Web site for the Health Sciences Library, University of the West Indies, Trinidad and Tobago.* Faculty of Health Sciences, UWI. $2,500. Co-principal Investigators: JG Marshall (U of T) and C Yates (UWI)

1995-97 *Information policy in Canada.* Social Sciences and Humanities Research Council. Principal Investigator: Andrew Clement. Co-investigators: JG Marshall, V Mosco and S McDowell. Collaborator: S Easun. $77,000

Dissertation and Clinical Study

1987 *The adoption and implementation of online information technology by health professionals.* University of Toronto, Ph.D. Supervisor: Professor P Leatt. 236 p. plus appendices.

1978 The level of medical knowledge of patients with Crohn's Disease. McMaster University, Clinical Study for M.H.Sc. degree. Supervisor: Professor K Kaufman. 125 p.

Books and Book Chapters

1998 Marshall JG, Inglis, J Co-chairs. *The Benchmarking Tool Kit.* Toronto: Canadian Health Libraries Association. 83 p.

1998 Marshall JG. "The impact of information on government decision-making: the case of Health Canada libraries." In Orna, E. ed. *Practical information Policies*, 2d ed. (In press)

1994 Marshall JG. "The impact of information on decision-making." In Grieves, M and Feeney, M, eds. *The Value and Impact of Information.* London: Bowker Saur. pp. 85-105.

1993 Marshall JG. *The impact of the special library on corporate decision-making.* Washington, D.C.: Special Libraries Association. 116 p.

1993 Marshall VW, Cook F, Marshall JG. "Conflict over intergenerational equity: rhetoric and reality in a comparative context." In Bengtson, VL, Achenbaum WA, Eds. *The New Contract Between the Generations.* New York: Aldine DeGruyter, pp. 119-140. (JG Marshall conducted the data collection using online databases, analysis and writing portion of the chapter based on media coverage in Canadian and US press).

Refereed Journal Articles

1996 Harris G, Marshall JG. "Building a model business case: Current awareness service in a special library." *Special Libraries* 87(3): 181-94.

1996 Buchanan HS, Marshall JG. "Benchmarking reference services: step-by-step." *Medical Reference Services Quarterly* 15(l): 1-13.

1995 Marshall JG, Buchanan HS. "Benchmarking reference services: An introduction." *Medical Reference Services Quarterly* 14(3):59-74.

1995 Marshall JG. "Using evaluation research to improve quality." *Health Libraries Review* (U.K.). 12: 159-72.

1995 Bradley J, Marshall JG. "Using scientific evidence to improve information practice." *Health Libraries Review* (U.K.) 12:147-57.

1993 Marshall JG. "Issues in clinical information delivery." *Library Trends* 42(l):83-107.

1993 Marshall JG, Fitzgerald D, Busby L, Heaton G. "A study of library use in traditional and problem-based medical curricula." *Bulletin of the Medical Library Association* 81(3):299-305.

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Education

Ph.D. (1982) State University of New York at Buffalo, Buffalo, New York
M.Ln.(1973) Emory University, Atlanta, Georgia
A.B. (1966) Mount Holyoke College, South Hadley, Massachusetts

Professional Experience

January 1999 - present. Professor, School of Information and Library Science. The University of North Carolina at Chapel Hill - Dean and Professor, July 1990 – December 1998; Associate Professor and Assistant Dean, 1987-1990; Assistant Professor, 1981-1987

September 1980 - June 1981. Teaching Assistant, SILS, SUNY/Buffalo

September 1979 – May 1980. Intern, Office of the Head of Lockwood Memorial Library

September 1978 - May 1979. Intern, Office of the Director of the University Libraries. State University of New York at Buffalo

June 1974 - June 1978. Head of the Library and Director of Audiovisual Services. The Park School of Buffalo

Selected Professional Experiences

Association of Library and Information Science Education (ALISE) Chair, Awards Committee, 1997- present. Secretary/Treasurer, Council of Deans and Directors of ALISE, 1992-1994, Program Planning Committee, 1990-1991.

Association of College and Research Libraries (ACRL) Member, Search Committee for Editor of Publications in Librarianship Series, 1996- 1997; Member, Search Committee for Editor of *College & Research Libraries*, 1994-95; Member, ACRL President's Program Planning Committee, 1992-93; 1989-1990; Invited Participant, ACRL Faculty Status Committee's Think Tank on Faculty Status: 2001, January 24, 1992; Invited Participant, ACRL President's Symposium on Information Literacy, January 1990.

National Network of Libraries of Medicine Advisory Board – Regional Advisory Council, 1995 – present.

American Library Association, Committee on Accreditation ,Chair, External Review Committee, Department of Library and Information Science, University of California at Los Angeles, April, 1997; Chair External Review Committee, School of Library and Information Studies, McGill University, Montreal Canada, November 1995.

Southern Association of Colleges and Schools Member of Reaffirmation Committee to Louisiana State University, Baton Rouge, La., October 1994; Texas Woman's University, Denton, Texas, Nov. 17-20, 1992; University of Mississippi, April 10-13, 1989.

Member, Editorial Board, *College & Research Libraries*, 1996 - present., *Journal of Academic Librarianship* (1993 – 1994, ACRL *Publications in Librarianship* Monograph Series

ALISE/H.W. Wilson Scholar to the State Academy of Culture in St. Petersburg, Russia, March, 1996

Selected Recent Publications

Libscomb, C. E., Moran, B.B., Jenkins, C.G., Cogdill, K.W. Friedman, C. P., Gollop, C. J., Moore, M.E., Morrison, M. L., Tibbo, H. R. and Wildemuth B. M. (1999) "Feasibility and Marketing Studies of Health Sciences Librarianship Education Programs." *Bulletin of the Medical Library Association*, vol. 87, no. 1 (January, 1999), pp. 50-57. (Refereed)

Kilgour, F. G., Moran, B.B., and Barden, J. R (1999) "Retrieval Effectiveness of Surname-Title-Word Searches for Known Items by Academic Library Users." *Journal of the American Society for Information Science*, vol. 50, no. 3 (1999), pp. 265-270. (Refereed).

Stueart, R.D. and Moran, B.B. (1998) "Library and Information Center Management," 5th Edition, Englewood, CO: *Libraries Unlimited*, 509 pp.

Moran, B.B. (1998) "The Changing Organizational Structures of Academic Libraries." In *New Missions of Academic Libraries in the 21st Century: Proceedings of the International Conference.* (pp. 169-175). Beijing: Peking University Press. (Refereed Proceedings)

Moran, B.B. (1997) "Faculty Evaluation in Schools of Library and Information Science" in Kent, A. (ed) *Encyclopedia of Library and Information Science*, New York: Marcel Dekker, vol. 60, , pp. 111-120.

Moran, B.B , Libscomb, C. E.,., Jenkins, C.G., Cogdill, K.W. Friedman, C. P., Gollop, C. J., Moore, M. E., Morrison, M. L., Tibbo, H. R. and Wildemuth B. M. (1996) "Preparing Tomorrow's Health Sciences Librarians: Feasibility and Marketing" *BMLA*, vol. 84, (October, 1996), pp. 541-548.

Moran, B.B.(1995) "Learning about Leadership: What Works in Modern Organizations." in Allen, B.L. and Weece, T. L. (eds), *Critical Issues in Library Management: Papers from the Thirty-Fifth Allerton Institute*, University of Illinois, GLIS, Urbana-Champaign, 1995, pp. 3-18.

Williams, D.E., Budd, J.M, Martin, R.E, Moran, B.B., Roper, F.R., eds. (1994) *For the Good of the Order: Essay in Honor of Edward G. Holley*. Greenwich, Connecticut: JAI Press, 1994, 370 pp.

Selected Collaborations

Laura Janda, Director, Center for Slavic, Eurasian and East European Studies , UNC-CH. Collaboration on Title VI grant to bring Slavic scholars to SILS.

Rudolph Vlasak, Director, Institute of Information Studies and Librarianship Charles University, Prague, Established a Student Exchange Program

Ole Harbo, Director, Royal School of Library and Information Science, Copenhagen, Established a Student Exchange Program

David Vaisey, Bodley's Librarian, Established a UNC/ Bodleian Library summer seminar at Oxford

Carol Jenkins, UNC Health Sciences Library and Charles Friedman, UNC Medical Informatics Program. Received grant from National Library of Medicine to study the preparation of tomorrow's health sciences information professionals.

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Education

Syracuse University, Ph.D. 1993 Information Transfer
SUNY Albany, M.A. 1988 Communication
SUNY Albany, B.A. 1987 Communication and Psychology

Professional Experience

1997 – Present - UNIVERSITY OF NORTH CAROLINA AT CHAPEL-HILL, CHAPEL HILL, NC. Assistant Professor School of Information and Library Science.

1991 – 1997 - UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN, URBANA, IL. Assistant Professor Graduate School of Library and Information Science.

1989 – 1991 - SYRACUSE UNIVERSITY, SYRACUSE, NY. Adjunct Faculty, School of Information Studies

Selected Professional Activities

ASIS SIG/ED Chair, 1998-1999
Program Committee, ASIS Annual Meeting 1998.
Co-Chair, ASIS Mid-Year Meeting 1997.
Chair, ASIS Awards and Honors Committee, 1993-1995.
Co-Founder of Prairienet, the Free-Net of East-Central Illinois.
Reviewer for SCI/ISAS 1999
Reviewer for ACM SIGGRAPH 1997
Reviewer for ASIS Annual Meeting Contributed Papers, 1992, 1995, 1998
Reviewer for Information Processing and Management, 1999.
Reviewer for the Journal of the American Society for Information Science, 1992-99.

Selected Publications

"Information Space Gets Normal." Gregory B. Newby. 1999. *Text Retrieval Conference (TREC-6) Proceedings*. Gaithersburg, MD: National Institute of Science and Technology. November 9-11.

"The Relation of Information Need, Data Type and Retrieval Mechanism for Information Systems." Gregory B. Newby. 1998. *Proceedings of the American Society for Information Science Annual Meeting*. Medford, NJ: Information Today. Pittsburgh, Pa.: November 12-16.

"The strong cognitive stance as a conceptual basis for the role of information in informatics and information system design." Gregory B. Newby. 1998. *Proceedings of the Joint Meeting of the World Multiconference on Systemics, Cybernetics and Informatics (SCI '98) and the 4th International Conference on Informatics Systems Analysis and Synthesis (ISAS '98)*. Orlando, Fla., July 12-16.

"A Prognosis for Continued Disarray in Electronic Scholarly Communication." Gregory B. Newby. 1997. *The Canadian Journal of Communication*. 22: 511-523.

Scholarly Publishing: The Electronic Frontier. 1996. Edited with Robin P. Peek. Cambridge: MIT Press. xxii + 364pp.

Collaborations

Bishop, Ann P. (Universityof Illinois). Prairienet.
Daessler, Rolf. (University of Potsdam). Information Visualization.
Guthery, Scott. (Schlumberger, Inc.). Text Mining.
Hart, Michael S. (Executive Director of Project Gutenberg). Project Gutenberg
Nilan, Michael S. (Syracuse University). Information System Use.
Peek, Robin P. (Simmons College). Electronic Publishing.

Jerry D. Saye

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Education

1978 - Ph.D. School of Library and Information Science. University of Pittsburgh. Major: Library Science
1971 - M.L.S. School of Library and Information Science. University of Pittsburgh. Major: Library Science
1968 - B.S. Wisconsin State University - Oshkosh. Major: History

Professional Experience

1985 - Present. Associate Professor, School of Information and Library Science, The University of North Carolina at Chapel Hill. (Assistant Professor, 1985-1989; Assistant/Associate Dean, 1990-1996; Associate Professor, 1989-Present)

1977 – 1985. Assistant Professor, College of Information Studies, Drexel University (Lecturer, 1977-1978; Assistant Professor, 1978-1985)

1977. Teaching Fellow, School of Library and Information Science, University of Pittsburgh

1971-1977. Assistant Librarian and Instructor, Fairmont State College (W.Va.)

Awards and Honors

"Distinguished Teaching Award for Post-Baccalaureate Instruction." University of North Carolina at Chapel Hill, 1999.

"Outstanding Teaching Award." School of Information and Library Science, University of North Carolina at Chapel Hill, 1998.

"University Scholar." University of Pittsburgh, 1979.

Selected Professional Activities

Co-editor, *Library and Information Science Education Statistics Report.* 1996 – present.

Member, Association for Library and Information Science Education Publications Committee, 1997- present.

Selected Publications

Saye, Jerry D. with Bohannan, April and Saye, Terri O. *Manheimer's Cataloging and Classification*. 4th ed., rev. and expanded. [In press with Marcel Dekker, Inc. Publication scheduled August, 1999.]

Daniel, Evelyn H. and Saye, Jerry D., editors. *Library and Information Science Education Statistical Report 1998*. Washington, D.C.: Association for Library and Information Science Education, 1998. [Also available: http://ils.unc.edu/ALISE/1998/]

Daniel, Evelyn H. and Saye, Jerry D., editors. *Library and Information Science Education Statistics Report 1997*. Washington, DC: Association for Library and Information Science Education, 1997. [Also available: http://ils.unc.edu/ALISE/1997/]

Šauperl, Alenka and Saye, Jerry D. "Pebbles for the Mosaic of Cataloging Expertise: What do Problems in Expert Systems for Cataloging Reveal about Cataloging Expertise?" *Library Resources & Technical Services*. 43 (1999): 78-94.

Šauperl, Alenka and Saye, Jerry D. "Subject Determination During the Cataloging Process: an Intensive Study of Five Catalogers." in *Proceedings of the 9th ASIS SIG/CR Classification Research Workshop,* edited by Elin K.

Jacob. pp. 119-138. Silver Spring, Md.: Special Interest Group / Classification Research, American Society for Information Science, 1998.

Saye, Jerry D. with Lan, Wen-Chin. "Students" in *Library and Information Science Education Statistical Report* 1998, pp. 53-220. Washington, DC: Association for Library and Information Science Education, 1998.

Saye, Jerry D. with Lan, Wen-Chin. "Students" in *Library and Information Science Education Statistical Report* 1997, pp. 65-249. Washington, DC: Association for Library and Information Science Education, 1997.

Saye, Jerry D. with McAllister-Harper, Desretta V. *Manheimer's Cataloging and Classification: A Workbook*. 3rd ed., rev. and enl. New York: Marcel Dekker, 1990.

Saye, Jerry D. and Vellucci, Sherry L. *Notes in the Catalog Record Based on AACR2 and LC Rule Interpretations*. Chicago: American Library Association, 1989.

Recent Collaboration

April Bohannan, School of Library and Information Studies, Texas Woman's University

Evelyn H. Daniel, School of Information and Library Science, The University of North Carolina at Chapel Hill

Robert M. Losee, School of Information and Library Science, The University of North Carolina at Chapel Hill

Alenka Šauperl, School of Information and Library Science, The University of North Carolina at Chapel Hill

Terri O. Saye, School of Law Library, The University of North Carolina at Chapel Hill

Paul Solomon

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Education

University of Maryland (College Park, Md.), Ph.D., Library and Information Services, May 1991 Dissertation: *Information Systems for Children: Explorations in Information Access and Interface Usability for an Online Catalog in an Elementary School Library.*

University of Maryland (College Park, Md.), M.L.S., Library and Information Services, December 1986

University of Pennsylvania (Philadelphia, Pa.), Business and Applied Economics, September 1969 - May 1971

University of Washington (Seattle, Wash.), M.B.A., Business Administration, August 1969

Pennsylvania State University (University Park, Pa.), B.S., Business Administration, June 1968

Professional Experience

Associate Professor, School of Information and Library Science, University of North Carolina at Chapel Hill, Chapel Hill, N.C. (1997-present).

Fulbright Professor, Department of Information Studies, University of Tampere, Finland (August 1997-May 1998).

Assistant Professor, School of Information and Library Science, University of North Carolina at Chapel Hill, Chapel Hill, N.C. (1991-1997).

Deputy Chief, Recreation Resources Assistance Division, National Park Service, Washington, D.C. (1988-1991).

Chief, Technical Services Branch, Recreation Resources Assistance Division, National Park Service, Washington, D.C. (1982-1988).

Deputy Chief, Park and Recreation Technical Services Division, Heritage Conservation and Recreation Service, Washington, D.C. (1978-1982).

Supervisory Program Analyst, Division of Systems Management, Bureau of Outdoor Recreation, Washington, D.C. (1976-1978).

Operations Systems Analyst, Special Services Division, Bureau of Naval Personnel, Arlington, Va. (1975-1976).

Research Analyst, General Research Corporation, McLean, Va. (1973-1975).

Statistician/Operations Research Analyst, National Institute of Law Enforcement and Criminal Justice, Washington, D.C. (1972-1973).

Teaching Fellow, Wharton School, University of Pennsylvania, Philadelphia, Pa. (1970-1972).

Research Assistant, Department of Sociology, University of Pennsylvania, Philadelphia, Pa. (1969-1971).

Selected Professional Activities

American Society for Information Science (ASIS) (1984)
SIG/CR (Classification Research): Chair Elect (94-95), Chair (1995-96)
Chair, Program Committee, 7th Classification Research Workshop [1996]
Member, Program Committee, 8th Classification Research Workshop [1997]

Member Program Committee, 9th Classification Research Workshop [1998]
Doctoral Forum Jury Member (1996);
Member, Program Committee, 10th Classification Research Workshop [1999]
International Society for Knowledge Organization (1996)
Member, Program Committee, Sixth International Conference, Lille, France, August 1998

Selected Publications

Solomon, P. (in press). "Information mosaics: Patterns of action that structure." *Information seeking in context: Proceedings of an international conference on research in information needs, seeking and use in different contexts, 13-15 August, 1998, Sheffield, England.* London: Taylor Graham.

Solomon, P. (1998). "On the use of research categorizations as the basis for organizing knowledge: A test in the domain of information behavior in health care." In W. Mustafa el Hadi, J. Maniez, & S. A. Pollitt (Eds), *Structures and relations in knowledge organization: Proceedings of the Fifth International ISKO Conference, 25-29 August 1998, Lille, France* (pp. 293-301). Würzburg, Germany: Ergon Verlag.

Tang, R., & Solomon, P. (1998). "Towards an understanding of the dynamics of relevance judgment: An analysis of one person's search behavior." *Information Processing and Management*, 34(2/3), 237-256.

Solomon, P. (Ed.) (1997). "Advances in Classification Research," 7. Medford, NJ: *Information Today for the American Society for Information Science*.

Solomon, P. (1997). "Access to fiction for children: A user-based assessment of options and opportunities." *Information Services and Use*, 17(2/3), 139-146.

Solomon, P. (1997). "Discovering information behavior in sense making." *Journal of the American Society for Information Science*, 48(12), 1097-1138.

Solomon, P. [1997]. "Conversation in information seeking contexts: A test of an analytical framework." *Library and Information Science Research*, 19(3), 217-247.

Solomon, P. (1994). "Children, technology, and instruction: A case study of elementary school children using an online catalog (OPAC)." *School Library Media Quarterly*, 23(1), 43-51.

Solomon, P. (1993). "Children's information retrieval behavior: A case analysis of an OPAC." *Journal of the American Society for Information Science*, 44(5), 245-264.

Solomon, P. (1992). "On the dynamics of information system use: From novice to ?" *Proceedings of the 55th Annual Meeting of the American Society for Information Science*, 29, 162-170).

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Education

B.S., Mathematics and German, Muhlenberg College; May 1976
M.A., Computer Science, Montclair State University; May 1984
Ph.D., Communication, Information and Library Studies, Rutgers University; May 1993

Professional Experience

1995 – present. Assistant Professor, University of North Carolina at Chapel Hill, School of Information and Library Science
1993 – 1995. NSF Postdoc Fellow and NATO Postdoc Fellow, Risø National Laboratory, Roskilde, Denmark
1985 – 1993. Director, Bell Communications Research (Bellcore)
1980 – 1985. Member of Technical Staff, Bell Labs
1977 – 1980. Senior Systems Analyst, Warner-Lambert Co.
1976 – 1977. Systems Analyst, Prudential Insurance Co.

Honors, Affiliations and Service

Finalist, UNC-CH Post-Baccalaureate Teaching Award (1998)
Director, Collaborative Electronic Learning Laboratory (CELL), Partnership for Minority Advancement in Biomolecular Sciences (PMABS), UNC-CH, (1998-present)
ASIS Mid-Year Conference on Collaboration, Technical Program Co-chair (1998)
Member, International Advisory Board for Agents-Oriented Knowledge Communication Environments Project, University of Warwick, UK (1995-1998)
Hoechst-Celanese Young Investigator Award (1996, 1997)
U.S. Army Research Laboratory Scientific Contribution Award (1996)
Junior Faculty Development Award (1994)
Bell Communications Research Doctoral Education Award (1991-1993)
American Society of Information Science (ASIS) Institute of Scientific Information (ISI)
Doctoral Dissertation Scholarship Award (1991)
Executive Women of New Jersey Graduate Merit Award (1991)
IEEE, Senior Member (1991)
Rutgers Graduate School Merit Fellowship Award (1991)
Bellcore Award of Excellence (1987)
Phi Kappa Phi (1984)

Selected Publications

Sonnenwald, D.H., & Iivonen, M. (to appear.) "An integrated human information behavior research framework for information studies." Accepted for publication in *Library and Information Science Research*, 25 manuscript pages. (Refereed.)

Sonnenwald, D.H., & Pierce, L. (to appear.) "Information behavior in dynamic work group contexts: Interwoven situational awareness, dense social networks, and contested collaboration in command and control." Accepted for publication in *Information Processing & Management*. 20 manuscript pages. (Refereed.)

Iivonen, M., Sonnenwald, D., Parma, M. (to appear.) "Establishing collaboration among librarians across national boundaries: An example from the Barents area of northern Europe." In John F. Harvey (Ed.*), International Librarianship: Cross Border Idea and Information Transfer*. Lanham, MD: Scarecrow Press. 13 manuscript pages.

Meho, L., & Sonnenwald, D.H. (to appear). "Citation ranking versus peer evaluation of senior faculty research performance: A case study of Kurdish scholarship." Accepted for publication in *JASIS*. 38 manuscript pages. (Refereed.)

Sonnenwald, D.H. (1999). "Evolving perspectives of human information behavior: Contexts, situations, social networks and information horizons." In T. D. Wilson & D. K. Allen (Eds.), *Exploring the Contexts of Information Behavior: Proceedings of the Second International Conference in Information Needs.* London: Taylor Graham. 13 manuscript pages. (Refereed.)

Sonnenwald, D.H., Iivonen, M., Alpi, J., & Kokkinen, H. (1999). "Collaborative learning using collaboration technology: Report from the field." In A. Eurelings (Ed*.), Integrating Information and Communications Technology to Higher Education.* Amsterdam: Kluwer Academic Publishers. 18 manuscript pages. (Refereed.)

Sonnenwald, D.H., Marchionini, G., Wildemuth, B. M., Dempsey, B.L., Viles, C.R., Tibbo, H.R., Smith, J.S. (1999). "Collaboration services in a participatory digital library: An emerging design." In T. Saracevic (Ed.), *Proceedings of the Third International Conference on Conceptions of Library and Information Science (CoLIS '99.)* 12 manuscript pages. (Refereed.)

Iivonen, M., & Sonnenwald, D.H. (1998). "From translation to navigation of different discourses: A model of search term selection during the pre-online stage of the search process." *Journal of the American Society for Information Science*, 49 (4), 312-326. (Refereed.)

Iivonen, M., Sonnenwald, D.H., Parma, M., & Poole-Kober, E. (1998). "Understanding cultural differences: Examples from education." *64th International Federation of Library Associations and Institutions Conference*, August 1998.

Sonnenwald, D.H., & Lievrouw, L.A. (1997). "Collaboration during the design process: A case study of communication roles and project performance." In P. Vakkari, R. Savolainen & B. Dervin (Eds*.), Information Seeking in Context* (pp. 179-204). London: Taylor Graham.

Pejtersen, A.M., Sonnenwald, D.H., Burr, J., Govindaraj, T., & Vicente, K. (1997). "The Design Explorer Project: Using a cognitive framework to support knowledge exploration." *Journal of Engineering Design,* 8 (3), 289-302.

Sonnenwald, D.H. (1996). "Communication roles that support collaboration during the design process." *Design Studies*, 17, 277-301.

Sonnenwald, D.H. (1995). "Contested collaboration: A descriptive model of intergroup communication in information system design." *Information Processing and Management*, 31(6), 859-877.

Sonnenwald, D.H., & Pejtersen, A.M. (1994). "Towards a framework to support information needs in design: A concurrent engineering example." In H. Albrechtsen & S. Oernager (Eds.), *Knowledge Organization and Management* (pp. 161-172). Frankfurt/Main: Indeks Verlag, 1994.

Collaborators

M. Beynon, CS, University of Warwick, UK
W. Bollenbacher, Biology, UNC-CH
F. P. Brooks, Jr., CS, UNC-CH
R. Carbonell, Chemical Engineering, NC State University
S.-J. Chang, National Taiwan University, Taiwan
J. M. DeSimone, Chemistry, UNC-CH
D. A. Erie, Chemistry, UNC-CH
D. Gray, NC State
D. Haase, NC State
M. Iivonen, Information Studies, University of Oulu, Finland
M. Jaffe, NJ Center for Biomaterials, Rutgers University,NJ
K. P. Jeffay, CS, UNC-CH
L. Lievrouw, Information and Library Science, UCLA
R. Losee, SILS, UNC-CH
G. Marchioni, SILS, UNC-CH
L. Pierce, US Army Research Lab
A. M. Pejtersen, Risø National Labs, Denmark
D. K. Smith, CS, UNC-CH
R. Superfine, Physics, UNC-CH
R. Taylor, CS, UNC-CH
H. R. Tibbo, SILS, UNC-CH
S. Virkus, Tallinn University of Educational Sciences, Estonia
B. Wildemuth, SILS, UNC-CH
M.-M. Wu, National Taiwan Normal University, Taiwan

Brian W. Sturm

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Education

Ph.D. in Library and Information Science. Indiana University, Bloomington, Ind., 1998. Dissertation: *The Entrancing Power of Storytelling: a systems approach to the storylistening discrete altered state of consciousness.*

Master of Library Science. Indiana University, Bloomington, Ind., 1991.

Bachelor of Arts in French, minor in Biology. College of William & Mary, Williamsburg, Va., 1985.

Universite Paul Valery, Montpellier, France, 1983-84.

Norfolk Academy, Norfolk, Va., 1981.

Professional Experience

1998-present. Assistant Professor, School of Information and Library Science, the University of North Carolina at Chapel Hill.

1996-97. Children's Librarian, Monroe County (Ind.) Public Library.

1994-1995. Acting Assistant Director of the Indiana University School of Library and Information Science, South Bend campus.

1990-present. Professional Storyteller performing and conducting workshops for adults and children at schools, libraries, conferences, and special events.

1990-1991. Character Voice, ERIC's Parent Outreach Project, a journal/cassette combination to encourage parents and children to read together. Bloomington, Ind.

1988-89. Children's Specialist for the Providence Public Library in Providence, R.I.

Selected Professional Experiences

"The Enchanted Imagination." International Conference on Storytelling, (St. Catherines, Ontario, Canada), August 1999.

"New Strengths, New Needs, New Century - Opportunities for Improving LIS Education." Panelist. ALISE, (Philadelphia, Pa.), January 1999.

"Surfing the Net." North Carolina Theatre Conference, (Asheville, N.C.), November 1998.

"Storytelling as Transformation." Info-to-Go Continuing Education Workshop, (Chapel Hill, N.C.), October 1998.

"The Enchanted Mind: Storytelling and Reading." North Carolina Association for Home and Consumer Sciences, (Raleigh, N.C.), March 1998.

Selected Publications

Sturm, Brian. W. (1999). "An Analysis of Five Interviews with Storylisteners to Determine How They Perceive the Listening Experience." In Margaret Read MacDonald (Ed.), *Traditional Storytelling Today: An International Sourcebook.* London/Chicago: Fitzroy Dearborn.

Sturm, Brian. (1998). "Altered States." *National Storytelling Magazine*, 10, 3-4.

Sturm, Brian. "The Storylistening Trance Experience." *Journal of American Folklore*. [accepted]

Sturm, Brian. "The Enchanted Imagination: Storytelling's Power to Entrance Listeners." School Library Media Research [accepted].

Collaborations
Nathan Frick, CARL Corporation, Kids Catalog Web Project.

Ron Jones, North Carolina State Library, Continuing Education Workshop in Adolescent Development.

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Education

Ph.D., Library and Information Science, 1989 -- University of Maryland, College Park, Md. Dissertation: *Abstracts, Online Searching, and the Humanities: A Study of the Structure and Content of Abstracts of Historical Discourse*

M.A., American Studies, 1984 -- University of Maryland, College Park, Md. Multi-disciplinary program with an emphasis in American History

M.L.S., 1983 -- Indiana University , Bloomington, Ind.

B.A., English, 1977 -- Bridgewater State College, Bridgewater, Mass.

Professional Experience

1997- present. Associate Dean, SILS
1996 – 1997. Assistant Dean, SILS
1995 – present. Associate Professor, SILS
1989-1995. Assistant Professor, SILS
1982-1989. Graduate Assistant at Indiana University and the University of Maryland
1978-1982. Junior High School English Teacher in Whitman, Brockton, and Sharon, Mass.

Selected Professional Activities

Professionwide

American Library Association, 1987-

Library Research Round Table, 1992- ; Steering Committee, 1995-1997; Chair Elect and Chair, 1997-1999

Society of American Archivists, 1986- ; American Archivist Editor Search Committee, 1995; Council, 1997-2000; Editorial Board, 1991-1994; Long-Range Planning Committee, 1992-1994; Educators Roundtable, 1986- ; Chair, 1992-1994; Publications; Task Force on the Future of the American Archivist, Chair, 1996-1997; UNC-CH Student Chapter, Faculty Advisor, 1995-

University of North Carolina at Chapel Hill, Universitywide

Academic Affairs Library Staff Development Committee, 1992-1994

Editorial Board for Documenting the American South, a UNC-CH Academic Affairs Libraries' digitization project, 1997-

Enrollment Management Committee, 1997-1998

Faculty Council, Nominating Committee, Chair, 1997 (Spring)

UNC-CH Graduate School, Administrative Board member, 1999-2002

Selected Publications

"User Instruction Issues for Database Searching in the Humanities." *Encyclopedia of Library and Information Science* 1999. 40 pp. Forthcoming.

with Lee Anne Paris, "Freestyle vs. Boolean: A Comparison of Partial and Exact Match Retrieval Systems." *Information Processing and Management* 34 2/3 (1998): 175-190.

with Natalia Smith. "Libraries and the Creation of Electronic Texts for the Humanities." *College and Research Libraries*, 57 (November 1996): 535-553.

"The Epic Struggle: Subject Retrieval from Large Bibliographic Databases." *American Archivist* 57 (Spring 1994): 310-26. [Journal appeared in summer 1995]

"Indexing in the Humanities." *Journal of the American Society for Information Science.* 45 (September 1994): 607-19.

"Abstracting, Information Retrieval, and the Humanities: Providing Access to Historical Literature." *ACRL Publications in Librarianship* #48. Chicago, Ill.: American Library Association, 1993. 276 pp.

Collaborations

With Dr. Gregory Newby, SILS, UNC-CH. Provost's Distance Education Grant, 1999. $10,000. Funded.

With several SILS faculty, and others from Duke University and the University of Virginia. American Front Porch Project grant proposal, 1998. $1.2 million. Not funded.

With Dr. Evelyn Daniel, SILS, UNC-CH. Information Technologies for the Cultural Heritage Community: Archivists, Museum Curators, and Librarians. $148,656 grant proposal to the Institute of Museum and Library Services. 1998. With Evelyn Daniel. Not funded.

With Drs. Bert Dempsey and Diane Sonnenwald. Internet Multimedia Studio. $58,817 grant proposal to UNC-CH Chancellor's Information Technology Initiative, December 1996. Funded.

With several SILS faculty, Medical Informatics faculty, and UNC-CH Health Sciences librarians. Preparing Tomorrow's Health Sciences Librarians: Feasibility and Marketing Studies. $64,792 grant proposal to the National Library of Medicine, May 1995. Funded.

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Education

1996 Ph.D. University of Virginia, Charlottesville, Va., School of Engineering and Applied Sciences. Major: Computer Science. Dissertation Title: Maintaining Retrieval Effectiveness in Distributed, Dynamic Information Retrieval Systems.

1988 M.S. College of William & Mary, Williamsburg, Va. Major: Computer Science.

1983 B.S. Virginia Polytechnic Institute and State University, Blacksburg, Va. Major: Forestry (Magna Cum Laude).

Professional Experience

1997 - present. Assistant Professor, School of Information and Library Science, University of North Carolina at Chapel Hill.

1996-1997. Research Associate, Department of Computer Science, University of Virginia. Charlottesville,Va.

1991-1993. Research Assistant, Department of Computer Science, University of Virginia. Charlottesville, Va..

1993-1996. Research Fellow, (Graduate support from NASA Goddard Space Flight Center) Department of Computer Science, University of Virginia. Charlottesville, Va.

1988-1991. Senior Programmer Analyst. Virginia Institute of Marine Science, College of Willam & Mary, Gloucester Point, Va.

1986-1988. Teaching Assistant. Department of Computer Science, College of William & Mary, Williamsburg, Va.

Selected Publications

Viles, C. L. and J.C. French. "Content Locality in Distributed Digital Libraries." *Information Processing and Management.* Accepted for Publication.

French, J.C. , A. Powell, C. L. Viles, T. Emmitt, K. Prey. "Evaluating Database Selection Techniques: A Testbed and Experiment." *SIGIR '98*, Melbourne, Australia August 1998.

Viles C. L. , M. J. Lewis, A. J. Ferrari, A. Nguyen-Tuong, A. S. Grimshaw. "Enabling Flexibility in the Legion Run-Time Library." *PDPTA '97*, pp. 265-274, Las Vegas, Nev., June 30 - July 2, 1997.

French, J. C. and C. L. Viles. "Ensuring Retrieval Effectiveness in Distributed Digital Libraries." *Journal of Visual Communication and Image Representation* (Special issue on Digital Libraries) 7(1):61-73, 1996.

Viles, C. L. and J. C. French. "Dissemination of Collection Wide Information in Distributed Information Retrieval Systems," *SIGIR '95*, pp. 12-20, Seattle, WA, July 9-13, 1995

Additional Selected Publications and Software

D. H. Sonnenwald, G. Marchionini, B. M. Wildemuth, B. J. Dempsey, C. L. Viles, H. R. Tibbo, J. B. Smith. "Collaboration Services in a Participatory Digital Library: An Emerging Design." To Appear in *COLIS3*, Dubrovnik, Croatia, May 1999.

Viles, C. L. and J. C. French. "Availability and Latency of World Wide Web Information Servers." *Computing Systems* 8(1):61-91, 1995.

"DRIFT: Software for Running Distributed Information Retrieval Experiments. See *TREC-4 experiments with DRIFT*, 4th Text Retrieval Conference, Gaithersburg, Md., November 1995.

Legion Run-time Library. Software implementing the top two layers of Legion's configurable run-time protocol stack. These two layers implement Legion's macro data flow model for invoking and handling method requests on distributed objects.

Recent Collaboration

Jamie Callan, CS, University of Massachusetts
Bert J. Dempsey, SILS, UNC-CH
Adam S. Ferrari, CS, University of Virginia
James C. French, CS, University of Virginia
Marcella Grendler, UNC Libraries, UNC-CH
Andrew Grimshaw, CS, University of Virginia
Joe Hewitt, UNC Libraries, UNC-CH
Paul Jones, SILS, UNC-CH
Michael J. Lewis, CS, University of Virginia
Gary Marchionini, SILS, UNC-CH
Sally McKee, CS, University of Utah
Anh Nguyen-Tuong, CS, University of Virginia
Celine Noel, UNC Libraries, UNC-CH
Gordon Rowley, UNC Libraries, UNC-CH
Jerry D. Saye, SILS, UNC-CH
Michael E. Sieracki, Bigelow Laboratories
Tim Shearer, UNC Libraries, UNC-CH
John B. Smith, CS, UNC-CH
Natasha Smith, UNC Libraries, UNC-CH
Diane H. Sonnenwald, SILS, UNC-CH
Helen R. Tibbo, SILS, UNC-CH
Charles L. Viles, SILS, UNC-CH
Barbara Wildemuth, SILS, UNC-CH

Barbara M. Wildemuth

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Education

1989 Ph.D., Drexel University, Philadelphia, Pa., College of Information Studies.
1982 M.Ed., Rutgers University, New Brunswick, N.J.
1976 M.L.S., University of Illinois, Urbana, Ill.
1971 B.Mus.Ed., North Central College, Naperville, Ill.

Professional Experience

1988-Present. Associate Professor, School of Information and Library Science, University of North Carolina at Chapel Hill, Chapel Hill, N.C. (1988-1989, Instructor; 1989-1995, Assistant Professor; 1996-Present, Associate Professor, SILS, and Adjunct Associate Professor, Department of Biomedical Engineering, School of Medicine, University of North Carolina at Chapel Hill)

1985-1988. Teaching Assistant, College of Information Studies, Drexel University, Philadelphia, Pa

1979-1985. Associate Director, ERIC Clearinghouse on Tests, Measurement, and Evaluation, Educational Testing Service, Princeton, N.J.

1978-1979. Head, Test Collection, Educational Testing Service, Princeton, N.J.

1976-1978. User Services Coordinator and Indexer/Abstractor, ERIC Clearinghouse on Tests, Measurement, and Evaluation, Educational Testing Service, Princeton, N.J.

Selected Research Grants Received

1995-1996. "Preparing Tomorrow's Health Sciences Librarians: Feasibility and Marketing Studies," funded by the National Library of Medicine. Principal Investigators: Barbara Moran, Carol Jenkins, Charles Friedman. Total: $65,600.

1991-1993. "End User Searching of MEDLINE," funded by the Council on Library Resources. Principal Investigators: Barbara M. Wildemuth and Margaret E. Moore. Total: $4,000.

1990-1998. "Information and Cognition in Medical Education," funded by the National Library of Medicine. Principal Investigator: Charles P. Friedman; Co-Principal Investigators: Ruth de Bliek, Stephen M. Downs, Barbara M. Wildemuth. Total: $579,712, 1990-1993; $578,898 (competing renewal), 1994-1998.

Selected Recent Publications

Dempsey, B. J., Wildemuth, B. M., & Geisler, G. "Use of an Expanding Directory Interface for WWW Legal Resources [poster]." Accepted for presentation at the Digital Libraries '99 Conference, Aug. 11-14, 1999, University of California, Berkeley.

O'Keefe, K. M., de Bliek, R., Wildemuth, B. M., & Friedman, C. P. (1999). "Medical students' confidence judgments using a factual database and personal memory: A comparison." *Journal of the American Society for Information Science*, 50(8), 698-708.

Sonnenwald, D. H., Marchionini, G., Wildemuth, B., Dempsey, B., Viles, C., Tibbo, H., & Smith, J. "Collaboration services in a participatory digital library: An emerging design." Paper accepted for presentation at the Third International Conference on Conceptions of Library and Information Science (CoLIS 3), Dubrovnik, Croatia, May 23-26, 1999.

Wildemuth, B. M., Cogdill, K., & Friedman, C. P. "The transition from formalized need to compromised need in the context of clinical problem solving." *Information Seeking in Context: an International Conference on Information Needs, Seeking and Use in Different Contexts.* Sheffield, United Kingdom, August 13-15, 1998, in press.

Wildemuth, B. M., Friedman, C. P., & Downs, S. M. (1998). "Hypertext versus Boolean access to biomedical information: A comparison of effectiveness, efficiency and user preferences." *ACM Transactions on Computer-Human Interaction*, 5(2), 156-183.

Wildemuth, B. M., de Bliek, R., Friedman, C. P., & File, D. D. (1995). "Medical students' personal knowledge, searching proficiency, and database use in problem solving." *Journal of the American Society for Information Science*, 46, 590-607.

Wildemuth, B. M., & Moore, M. E. (1995). End-user search behaviors and their relationship to search effectiveness. *Bulletin of the Medical Library Association*, 83, 294-304.

Wildemuth, B. M., & O'Neill, A. L. (1995). "The 'known' in known-item searches: A pilot study." *College & Research Libraries*, 56, 265-281.

Selected Professional Activities

American Society for Information Science

1999 Founder and Chair, Special Interest Group for Information Seeking and Use

1998 Technical Program Co-chair, ASIS Midyear Meeting

1994-1995 Best Student Paper Award Jury, Chair

1993-1994 ISI Dissertation Scholarship Jury, Chair

1991-1994 Award of Merit Nominations Committee; Chair, 1993-1994

Proposal review panel member, National Science Foundation, 1998

Referee (selected): Journal of the American Society for Information Science, 1994, 1996; Library Quarterly, 1999; MIS Quarterly, 1990-1993; Annual Meeting, American Society for Information Science, 1992, 1996

Panel moderator, meetings of the American Society for Information Science, 1991, 1992, 1998, 1999

Appendix G: SILS Fund Raising Priorities for *Campaign Carolina*
(Organized by Programmatic Emphasis)

New Undergraduate Program – Bachelor of Science in Information Science (6 million)

This initiative would create a new major, accommodating up to 160 students per year. Support for the undergraduate program would come from *a combination of state and private funds.*

Faculty/Staff *(from state funds)*

- Assistant/Associate Professorships (5-7)
- Undergraduate Student Services Manager
- Undergraduate Instructional Technology support staff
- Graduate Teaching Assistantships (4-6)
- Additional library and computer laboratory staff

Information Resources *(from state and private funds)*

- Increase library collections in the area of informatics (endowment)
- Expand and enhance computing facilities (expendable)

Facilities *(from state and private funds)*

- Obtain and renovate additional space in Manning Hall to provide: 1) SILS labs and classrooms (minimum of two large classrooms); 2) additional SILS faculty offices
- Renovate main office space to accommodate growing administrative and outreach staff
- Build a new wing onto Manning Hall to provide: 1)additional classroom and computer lab space (minimum of two large classrooms and twice the current computer lab space); 2) faculty offices; 3) teaching assistant work space; 4) student/faculty project and research space; 5) student/faculty lounge or informal meeting spaces; 6) multi-purpose space for presentations and receptions
- Furniture appropriate to flexible classroom use throughout the building
- Storage/locker space for students throughout the building

Enrichment of Research and Teaching in Digital Libraries and Data Management (2 million)

Digital libraries and the complex data management issues associated with them are areas in which current faculty are conducting research and teaching graduate-level courses. Additional resources will enable the School to build on its current strength to become a leader in the field.

Faculty/Staff

- Creation of a distinguished professorship in Digital Libraries and Data Management
- Grant/research project management support staff position (part-time)

Faculty Development

- Lectureships and visiting scholar support

Students

- Ph.D. Graduate Fellowships (full funding for at least two students)
- Dissertation Fellowships

- Support for doctoral student conference travel

Programs

- Center for Human-Computer Interaction Studies (of which the existing Interaction Design Lab is a part)

Facilities

- Obtain and renovate additional space in Manning Hall for SILS labs and team work spaces

Enrichment of Research and Teaching in Health Information (2 million)

Based on marketing and feasibility data collected in a recent study, SILS is uniquely positioned to play an international leadership role in conducting research and providing training for health information professionals. At the same time, issues related to informed health decision making by consumers, especially the use of health information from the Internet, are of primary concern.

Faculty/Staff

- Creation of chaired professorship in Health Information
- Grant/research project management support staff position (part-time)

Faculty Development

- Travel support for coordinating efforts with other institutions

Students

- Ph.D. Graduate Fellowships (full funding for at least one student)
- Dissertation Fellowships
- Support for doctoral student conference travel

Programs

- Center of Excellence for the Education of Health Information Professionals

Enrichment of Research and Teaching in Children and Information Technology (1.5 million)

It is a priority within North Carolina to improve support for our elementary and secondary schools and provide high quality educational opportunities for our children. SILS could contribute directly to this effort through its research and teaching in the area of information literacy for children, children's library services and the use of technology by children.

Faculty/Staff

- Creation of distinguished professorship in Children and Information Technology

Faculty Development

- Lectureships and visiting scholar support

Students

- Ph.D. Graduate Fellowships (full funding for at least one student)
- Dissertation Fellowships
- Support for doctoral student conference travel

Information Resources

- Enlarge library collection of children's resources (endowment)

Enrichment of Research and Teaching in Cultural Heritage Information (1.2 million)

UNC has strengths in the humanities and the institutions that preserve our cultural heritage such as museums, archives and special collections in libraries. By consolidating and leveraging its resources, SILS can provide a broad range of educational and research opportunities for the training of professionals working in cultural heritage institutions.

Faculty/Staff

- Grant/research project management support staff position (part-time)

Faculty Development

- Lectureships and visiting scholar support

Students

- Ph.D. Graduate Fellowships (full funding for at least one student)
- Dissertation Fellowships
- Support for doctoral student conference travel

Programs

- Center of Excellence for the Education of Cultural Heritage Information Professionals

Promoting Lifelong Learning through Distance Education (1 million)

In a rapidly changing information technology landscape, distance learning and other innovative instructional technologies will be used to promote lifelong learning initiatives for the information professions.

Faculty/Staff

- Lifelong Learning Coordinator
- Distance/Instructional Technology support staff

Faculty Development

- Travel to remote sites

Students

- Travel to UNC for short-term seminars, etc.

Information Resources

- Additional computing, teleconferencing and video conference capabilities

Facilities

- Obtain and renovate additional space in Manning Hall to create a video conference classroom/meeting room

Enrichment and Expansion of Existing Graduate Programs (2.43 million)

The ***doctoral program*** will be expanded to meet the increasing demand for researchers and leaders in information and library science. ***The master's programs*** will be revised to ensure leading edge education for the information professions. This revision would include the development of interdisciplinary partnerships with such university departments/schools as business, computer science, education, health affairs and mass communications.
All levels of graduate education will be served by the further enhancement of the School's research capabilities. Funding for this initiative would be a *combination of state and private funds.*

Faculty/Staff

- Experiential Learning Coordinator

Faculty Development

- Instructional equipment and information technology enhancements for research projects
- Research leave support
- Advanced training
- Conference, meeting and workshop travel
- Lectureships and visiting scholar support
- Recognition award for junior faculty research
- Awards for research and teaching excellence

Students

- Master's Research Fellowships
- MSIS Graduate Fellowships
- MSLS Graduate Fellowships
- Awards for Excellence
- Additional student research funds
- Support for our students to organize/sponsor conferences

Information Resources

- Provide ubiquitous access points for technology in Manning Hall (focus on classrooms, and computer-supported collaborative work areas such as the SILS library and computer lab)

Facilities

- ***Obtain and renovate additional space*** in Manning Hall to provide: 1) a Net Classroom (fully networked, multimedia based on principle of ubiquitous computing, to include wireless LAN); 2) student/faculty project and research space; 3) new faculty offices; 4) student/faculty informal meeting spaces; 5) a multi-purpose space for presentations and receptions; 6) doctoral student work spaces; 7) a conference room to support mini-conferences and convocations
- Furniture appropriate to more flexible classroom use and computing throughout building
- Storage/locker space for students throughout building

Global Connections
(.5 million)

Information and communication are the mechanisms for the globalization of our society. SILS will build on its existing international programs by participating in scholarly exchanges, emphasizing the use of technology to foster international communication for research and education.

Faculty/Staff

- Faculty exchanges
- International faculty fellowships

Students

- Student Exchanges
- International student fellowships

Programs

- Increase international study abroad partnerships for credit or for CE credit
- Global collaborative research and/or teaching initiatives

Unrestricted Funds
(1 million)

Unrestricted funds to provide support for the most pressing and immediate needs as identified by the dean of the school.

Total	**17.63 million** **(of which approximately 10 million is expected from private funds)**

Appendix H: Minor in Information Systems Catalog Entry

School of Information and Library Science

JOANNE GARD MARSHALL, *Dean*

The undergraduate minor in Information Systems provides students with an understanding of computing, networking, multimedia, electronic information resources, and the Internet that can be used to solve problems in a variety of contexts. The minor complements the student's major field of study by offering knowledge, skills, and experience using these technologies and will require fifteen hours of credit to complete. The minor is designed for undergraduate students who wish to develop knowledge and skills in the use and design of information systems.

Undergraduate students who have completed at least the first semester of their sophomore year may apply for admission to the minor program. Participation is limited, and admission will be competitive. Criteria for admission include the candidate's academic record, work and extracurricular experience, and substantive thinking about the role of information systems in his or her major field. Candidates from a variety of disciplinary backgrounds are sought. Level of prior computer experience is not a criterion for admission.

Further information about the program (purpose and course requirements) and an application form are available at http://www.ils.unc.edu. Information and applications also can be obtained from SILS, 100 Manning Hall, CB #3360, 962-8366.

Requirements for the Information Systems Minor

The undergraduate minor in Information Systems requires that students earn fifteen credits of approved courses. Students receiving the minor must take INLS 50, 60, 70 and 80, described below. In addition, the student will take the remaining three credits as an elective. The elective may be a course in his or her own discipline, INLS 90, an INLS 100-level course or simply a course of use/interest to the student that is relevant to the minor. The elective must be approved by SILS.

Note: The prefix for all School of Information and Library Science courses is INLS.

When a co- or prerequisite is listed for a course, it may be assumed that an equivalent course taken elsewhere or permission of instructor also fulfills the prerequisite or corequisite. The course instructor must approve the equivalency of the substitute course.

Course Descriptions

50 Information Technology Applications (3). Study of the functional capabilities of major classes of microcomputer application software, the computing needs of information agencies, and selected current topics in computing. Staff.

60 Information Systems Analysis and Design (3). Prerequisite or corequisite: INLS 50. Analysis of organizational problems and how information systems can be designed to solve those problems. Application of database and interface design principles to the implementation of information systems. Wildemuth.

70 Organizing and Retrieving Information (3). Prerequisite: INLS 50. Methods for organizing and retrieving information, including using existing databases and the construction of a database using a database management software package. Viles, Wildemuth.

80 Data Communication (3). Prerequisite: INLS 50. Examines the functions of data communication networks such as the Internet for communication, accessing remote resources, and information searching and retrieval. Explores emerging multimedia applications and their potential uses. Dempsey, Newby, Viles.

90 Independent Study in Information Systems (1-3). Study by an individual student on a special topic under the direction of a specific faculty member. A prospectus/plan for the work is required in advance of registration. Staff.

Courses for Graduates and Advanced Undergraduates

The following courses are also available to advanced undergraduates (juniors and seniors), space permitting. For specific information about the school's graduate program requirements, consult the School of Information and Library Science home page or the printed catalog, which can be obtained in the administrative offices, 100 Manning Hall.

108 History of Books and Libraries (3). The history of human communication focusing on the origin and development of the book and the origin and development of libraries and librarianship. Saye.

110 Selected Topics (3). Members of the faculty. Exploration of an introductory-level special topic not otherwise covered in the curriculum. Previous offering of these courses does not predict their future availability; new courses may replace these.

111 Information Resources and Services I (3). Analysis, use, and evaluation of information and reference systems, services, and tools with attention to printed and electronic modes of delivery. Provides a foundation in search techniques for electronic information retrieval, question negotiation, and interviewing. Gollop, Tibbo.

115 Natural Language Processing (Computer Science 171) (3). Prerequisite: COMP 14 or COMP 15. Statistical, syntactic, and semantic models of natural language. Tools and techniques needed to implement language analysis and generation processes on the computer. Haas.

120 History of Children's Literature (3). A survey of children's literature in English from the Middle Ages through the nineteenth century. Staff.

122 Young Adult Literature and Related Materials (3). A survey of print and nonprint library materials particularly suited to the needs of adolescents. Staff.

123 Children's Literature and Related Materials (3). Survey of literature and related materials for children with emphasis on twentieth-century authors and illustrators. Staff.

131 Management of Information Agencies (3). An introduction to management in libraries and other information agencies. Topics to be studied include planning, budgeting, organizational theory, information sources for managers, staffing, leadership, organizational change, and decision making. Daniel.

150 Organization of Information (3). Introduction to the problems and methods of organizing information, including information structures, knowledge schemas, data structures, terminological control, index language functions, and implications for searching. Solomon.

151 Organization of Materials I (3). Prerequisite or corequisite: INLS 50. An introduction to the problems of organizing information and collections of materials. Formal systems for cataloging and classifying are studied. Saye.

153 Resource Selection and Evaluation (3). Identification, provision, and evaluation of resources to meet primary needs of clienteles in different institutional environments. Staff.

161 Non-numeric Programming for Information Systems Applications (3). An introduction to computer programming for library operations and information retrieval applications. Losee.

162 Systems Analysis (3). Introduction to the systems approach to the design and development of information systems. Methods and tools for the analysis and modeling of system functionality (e.g., structured analysis) and data represented in the system (e.g., object-oriented analysis) are studied. Haas, Sonnenwald, Wildemuth.

165 Records Management (3). Introduces the principles of records center design, records analysis and appraisal, filing systems, reprographics and forms, reports, and correspondence management. Legal issues and the security of records are also covered. Staff.

170 Applications of Natural Language Processing (Computer Science 170) (3). Prerequisite: COMP 14, 15, or graduate standing in Information and Library Science Study of applications of natural language processing techniques and the representations and processes needed to support them. Topics include interfaces, text retrieval, machine translation, speech processing, and text generation. Haas.

172 Information Retrieval (Computer Science 172) (3). Prerequisite: INLS 50, COMP 14, or COMP 15. Study of information retrieval and question answering techniques, including document classification, retrieval and evaluation techniques, handling of large data collections, and the use of feedback. Losee, Viles.

176 Information Models (3). An introduction to models and modeling techniques used in information science and their application to problems and issues in the field. Haas.

180 Communication Processes (3). Examines the social and technological processes associated with the transfer of information and includes discussions of formal and interpersonal communication channels. Daniel, Sonnenwald, Wildemuth.

181 Internet Applications (3). Prerequisite: INLS 50. Introduction to Internet concepts, applications, and services. Introduces the TCP/IP protocol suite along with clients and servers for Internet communication, browsing, and navigation. Examines policy, management, and implementation issues. Dempsey, Newby, Viles.

182 Introduction to Local Area Networks (3). Prerequisite: INLS 50. Introduction to local area network hardware, topologies, operating systems, and applications. Also discusses LAN management and the role of the network administrator. Rankin, Rhine.

183 Distributed Systems and Administration (3). Prerequisite: INLS 80 or INLS 181 or INLS 182. Distributed and client/server-based computing. Includes operating system basics, security concerns, and issues and trends in network administration. Newby

184 Protocols and Network Management (3). Prerequisite: INLS 181 or INLS 182. Network protocols and protocol stacks. Included are discussions of protocol classes, packet filtering, address filtering, network management, and hardware such as protocol analyzers, repeaters, routers, and bridges. Gogan.

186 TCP/IP Networking and Network Programming (Computer Science 143) (3). Prerequisites: (INLS 161, 184) or COMP 142. In-depth examination of the algorithms underlying the TCP/IP Internet protocol suite, including performance issues and operational problems. Introduction to client/server network programming (in C/C++/Java) using the standard BSD sockets interface. Dempsey.

Appendix I: Budget

			Year 0	Year 1	Year 2	Year 3	Year 4
101	**Regular Term Instruction**						
	1210	SPA Regular Salaries					
		UG Student Services Asst.		$24,000	$25,200	$26,460	$27,783
		Placement Officer	$14,000	$28,000	$29,400	$30,870	$32,414
		Accounting Manager			$29,400	$30,870	$32,414
		Faculty Secretary (1/4 time)		$5,750	$6,038	$6,339	$6,656
	1310	EPA Academic Salaries					
		Professor, Digital Libraries			$102,000	$107,100	$112,455
		Assoc. Professor/Assoc. Dean		$22,200	$96,200	$101,010	$106,061
		Assoc. Professor		$72,000	$75,600	$79,380	$83,349
		Asst. Professor		$58,000	$60,900	$63,945	$67,142
		Asst. Professor		$58,000	$60,900	$63,945	$67,142
		Asst. Professor		$53,000	$55,650	$58,433	$61,354
		Asst. Professor				$61,000	$64,050
		Asst. Professor				$56,000	$58,800
		Lecturer/IT Support Staff	$22,500	$45,000	$47,250	$49,613	$52,093
		Lecturer/Senior IT Support Staff		$27,500	$55,000	$57,750	$60,638
	1310	Adjunct faculty		$20,000	$20,600	$21,218	$21,855
		Graduate teaching fellows	$18,000	$72,000	$75,600	$79,380	$83,349
		Faculty graduate assistants		$6,000	$9,000	$12,000	$14,400
		Graduate assistants for computer lab		$43,200	$43,200	$43,200	$54,000
		Graduate assistants for SILS library		$16,000	$16,000	$16,000	$19,200
	1530	Moving expenses for faculty	$10,000	$10,000			
	1810	Social Security	$2,792	$27,995	$45,023	$56,225	$59,036
	1820	State Retirement	$3,223	$34,742	$56,824	$69,997	$73,497
	1830	Medical Insurance	$2,256	$22,560	$27,072	$31,584	$31,584

		Year 0	Year 1	Year 2	Year 3	Year 4
1836	Graduate teaching fellow health insurance	$1,816	$5,448	$5,720	$6,006	$6,307
1836	Graduate assistant health insurance		$7,264	$9,534	$12,013	$12,613
6577	Tuition remission for graduate teaching fellows	$5,372	$32,232	$32,232	$32,232	$32,232
6577	Tuition remission for graduate assts.		$37,604	$37,604	$42,976	$42,976
2000	Supplies and Materials					
	Printing & duplicating	$1,000	$4,000	$6,000	$6,000	$6,000
	Office supplies	$2,000	$4,000	$4,000	$4,000	$4,000
	Photocopier		$9,000			
	Furniture for new staff/faculty	$7,600	$30,400	$7,600	$7,600	
	Furniture for research labs, offices		$11,280	$30,495	$6,375	
	Furniture for 3 computer labs		$38,985	$61,040		
	Furniture for 3 CCI-ready common spaces		$38,720	$19,360		
	Furniture for 4 classrooms			$72,080		
	VCR's for classrooms (4)			$900		
	Overhead projectors/document camera			$3,500		
	Mobile PC whiteboard w/ stand			$1,500		
	Flat screen monitors (7; labs and classrooms)			$10,500		
	Dell Personal Computers for lab (97)			$215,000		
	24-port 10/100 Cabletron Switches (10)		$18,000			
	Extron video switches for classroom video projection (4)		$4,000			
	Hewlett Packard laser printer for faculty		$2,000			
	Hewlett Packard color printer for faculty		$4,000			
	Hewlett Packard laser printers (3)		$6,000			
	Hewlett Packard color laser printer		$4,000			
	UPS 3000 Power Backup for servers and switches (7)		$10,500			
	Wall-mount racks for switches and servers (2)		$3,100			
	Wall racks for switches in closets (4)		$2,800			
	Peripheral Devices		$5,000			

			Year 0	Year 1	Year 2	Year 3	Year 4
	3000	Current Services					
		Phone installation	$200	$1,000	$200		
		Phone & communications	$360	$4,320	$4,320	$4,320	$4,320
		Travel expenses	$8,000	$20,000	$12,000	$12,000	$12,000
		Advertising for faculty recruiting	$1,500	$1,500			
	4000	Fixed Charges					
		Photocopier maintenance contract		$2,400	$2,400	$2,400	$2,400
	5000	Capital Outlay (Equipment)					
		Sun ES 450 – Research and Development server		$146,000			
		NetApps Filer for Data Storage		$160,000			
		Dell Dimension – Research and Development server		$22,500			
		Dell Dimension – Application Server for CCI laptops		$22,500			
		Dell Dimension – Application and File server		$22,500			
		Cabletron Workgroup SmartSwitch		$25,000			
		Proxima video projection units for classrooms (4)		$36,000			
		Research equip. for individual faculty		$60,000	$60,000		
TOTAL: Regular Term Instruction			$100,619	$1,448,000	$1,532,842	$1,258,240	$1,312,118
151	Libraries						
	1310	Asst. Librarian		$33,000	$34,650	$36,383	$38,202
	1810	Social Security		$2,525	$2,651	$2,783	$2,922
	1820	State Retirement		$2,914	$3,060	$3,213	$3,373
	1830	Medical Insurance		$2,256	$2,256	$2,256	$2,256
		Library books & materials	$7,000	$12,000	$11,000	$10,000	$9,000
TOTAL: Libraries			$7,000	$52,694	$53,616	$54,634	$55,753
TOTAL ADDITIONAL COSTS			**$107,619**	**$1,500,694**	**$1,586,459**	**$1,312,874**	**$1,367,872**