Grainger Engineering Library Information Center

Annual Report, July 1, 2015 – June 30, 2016

Unit Narrative.

Introduction

Since its opening in 1994, the Grainger Engineering Library Information Center (GELIC) has focused on innovative and enhanced services to users, including serving as an incubator for the development and deployment of information content discovery and delivery tools, extended liaison and instruction activities, and providing flexible and dynamic study and research spaces. In the last several years the GELIC has focused on expanding digital scholarship services and providing facilities and services for innovation and entrepreneurship. GELIC faculty and academic professionals have long played a leadership role within research libraries, having secured over $20 million in outside grant funding and endowment funds since 1994 and authoring some 55 articles and conference papers on innovative digital library services. The Easy Search software suite (including the Journal and Article Locator system) developed at GELIC is presently used across the entire Library system and within university libraries and research libraries internationally.

The Grainger librarians are very cognizant of the need to adapt science and engineering librarianship to changing research and instruction paradigms and to explore the library's role in end-to-end knowledge creation and scholarly communication processes. To this end, the GELIC has focused in the last year on the development of the Grainger Engineering Library IDEA (Innovation, Discovery, DEsign, and DAta) Laboratory in the lower level of the GELIC.

Research and Instructional Support

In FY2016, the College of Engineering (COE) added 17 new faculty members, growing to a total of 397 faculty. This is up from 340 faculty in 2001. The 397 faculty represents 20.3% of all campus tenure system faculty. The COE and directly allied units are responsible for generating 57% of the campus ICR monies and 59% of all the sponsored research monies. In addition, the COE enrolls 10,732 total students (24% of the campus total) and awarded 35% of the FY2015 PhD degrees. By any measure, the importance the COE in the research and instructional life of the University continues to grow. The Grainger Engineering Breakthroughs Initiative (GEBI) has provided a new $100 million endowment for bioengineering and big data initiatives. The plans for a new engineering-based College of Medicine will greatly expand the need for engineering support. Taken together with the physical science and life science programs on campus, the engineering and sciences bring in 90% of the campus ICR money within 95% of the campus sponsored research support.

Collaborations

With the development and deployment of the IDEA Lab, the GELIC has begun working closely with the campus Technology Entrepreneur Center, the iVenture Accelerator student innovations projects, and several engineering capstone design classes in mechanical engineering and

electrical and computer engineering (see below). GELIC also works closely with the Library's Research Data Service (RDS) in data management and data sharing projects.

We continue to be involved in collaborative projects with faculty in Computer Science (Cheng Zhai, Kevin Chang, and Brian Bailey), Civil and Environmental Engineering (Al Valocchi, Mark Rood, and Jeremy Guest), Electrical and Computer Engineering (Gary Eden. Pete Sauer, and Phil Krein), Physics (Doug Best, the late Klaus Schulten), Biophotonics (Steve Boppart), NCSA, and the I2CNER consortium. We are partnering with Kyushu University in support and research extension work for I2CNER (International Institute for Carbon Neutral Energy Research).

Major Accomplishments

Continued development and assessment work on the **GRIPTS (Group Information Productivity Tools)** for faculty individuals and groups. GRIPTs now include author linking, pre-determined Google News matches, author H-index links, ES results, a citing references search, and a self-contained version of Journal and Article Locator. With Kyushu University we developed a multi-university GRIPT for the **I2CNER (International Institute for Carbon Neutral Energy Research).** See:
http://hades.grainger.uiuc.edu/guy/pip72014.asp?i2cner
A presentation on GRIPT development was made at the LITA 2016 National Meeting in Dallas-Fort Worth.

Modified custom **DMP (Data Management Plan) Template** for the NSF requirement of a DMP for all grants. With assistance of OSPRA and in conjunction with campus-wide Data Stewardship Committee and Research Support Services initiative, monitored usage of our Template and continued our analysis of NSF DMPs through UIUC grants submitted through Fastlane (NSF). Expanding our **detailed analysis on the DMPs in proposals** with an eye to following up on our 2014 article in *Journal of eScience Librarianship (JeSL)* with 2015 and 2016 data. The Grainger DMP template has been used in over 300 proposals, including 70 funded grants. Grainger librarians made a number of presentations and published articles on research data management in JeSL and in *Issues in Science and Technology Librarianship* during the last year. Also working on IDEALS dataset deposit with Department of Physics faculty and researchers.

Remodeled approximately 9,000 square feet of space in the GELIC lower level to create the **Grainger Engineering Library IDEA (Innovation, Discovery, DEsign, and DAta) Laboratory (GELIL)**. The IDEA Lab provides facilities and services for faculty/student collaboration, innovation, and entrepreneurship activities and supports a wide range of digital scholarship, design learning, and visualization functions. The IDEA Lab serves as a demonstration and prototype site for exploring the interface between informatics, design thinking, visualization, and data analytics. The Grainger Engineering Library IDEA Lab serves as a node in the multi-facility campus design learning network and will complement services offered in the new Design Center building, scheduled to open in 2018.

The IDEA Lab will leverage and expand on the Library's rich history of pioneering innovations in information discovery and delivery. We are particularly interested in the role that collaborative or team information discovery and delivery can play in design learning and are designing and testing a distributed discovery system that is based on extensions of the Easy Search software developed in the Library. This system will function in group or remote settings and will display

information target search results on separate, multiple monitors or in separate areas on a visualization wall. It will be the ultimate Bento type discovery system.

Grainger Engineering Library staff are initially working with three College of Engineering groups in the IDEA Lab: the Technology Entrepreneur Center (http://tec.illinois.edu/) Fellows and students (including the iVenture Accelerator http://iventure.illinois.edu/ groups); students and faculty in the Mechanical Science and Engineering capstone senior design classes; and several Department of Computer Science visualization and design faculty and courses. Other projects and groups can apply for space in the IDEA Lab.

The key IDEA Lab technology components are:
Two informatics laboratories with a total of 10 movable 58" or 65" large screen monitors with attached workstations for work on information discovery and database technologies;
- Eight student collaborative work rooms with removable walls, wall-attached whiteboards, several movable high definition monitors on carts, and movable whiteboards;
- Seven collaboration tables with attached monitors for group collaborative work;
- Two presentation areas with 84" monitors (one area with twin 84" monitors) for student/faculty presentations;
- Three 3D printers and a 3D scanner; and
- A 13.5' by 7.5' visualization wall with a 4x4 array of 46" monitors with up to 7680 x 4320 pixel 8K high definition display.

Presentations on the IDEA Lab were made at the QQML international conference in London in May and the Design Libraries 5 Conference held at the University of Calgary in September 2016.

Continued involvement in the **CARE (Center for Academic Resources in Engineering) center** services aimed at improving student retention and providing enhanced collaboration spaces and tutoring services on Grainger 4th Floor. Implemented a library information literacy program in CARE and continued the Research Rat seminars held in CARE.

Managed collection budget of $1.9 million. Purchased Taylor and Francis, Elsevier, Springer, and Wiley **backfiles and reference works**, 8th edition of the Morgan and Claypool Synthesis files.

Grainger librarians made **presentations** to all incoming graduate students in Materials Science, Mechanical Science and Engineering, Industrial and Enterprise Systems Engineering, Electrical and Computer Engineering, Computer Science, and Civil and Environmental Engineering – approximately 900 students. Presentations were also made to several research methods classes in Civil and Environmental Engineering, Computer Science, and Mechanical Science and Engineering. Grainger GAs also taught 5 research support seminars as part of the CARE program.

Made presentations each semester to Mechanical Sciences and Engineering **MechSE 470 design class**. All MechSE design groups are assigned to a GA or librarian for consulting and assistance.

Made presentations to Computer Science Database and Information retrieval group, working with CS faculty Kevin Chang and Cheng Zhai.

Planned and installed videoconferencing equipment in Grainger 1st Floor conference room and began to investigate a planned Lower Level video conferencing room.

Worked with the **I2CNER (International Institute for Carbon Neutral Energy Research)** U.S.—Japanese cooperative initiative involving the University of Illinois and Kyushu University in Japan. Also involved are the Japanese World Premier International Research Center Initiative (WPI), the U.S. Department of Energy, and the Japan Ministry for Education, Culture, Sports, Science and Technology. Organized a visit from a delegation of Japanese visitors, including the Librarian of Kyushu University, to discuss the areas of collaboration.

Continued work on the **NSF funded National Ethics Portal (the Ethics CORE Digital Library)** and National Center for Professional and Research Ethics. This grant has been extended through a contract with the National technical University in Singapore which is funding a 50% academic hourly staff member in the GELIC.

Worked with COE on banner placement and new names placed in Grainger lobby for the fourth class of **Engineering Hall of Fame** members.

With Library Development Office, worked on the **Berthold Family Professorship in Information Access and Discovery**, with investiture ceremony taking place on September 28. 2016.

Continued to teach **two semester GSLIS 592 independent study** for Grainger GAs, focusing on methods for database access in a Web environment and metasearch and linking technologies.

Developing software as a service test site for the **Research Data Alliance (RDA) Scholix project** which links the published research literature (articles, conference papers, chapters) to the authors' supporting datasets deposited in a separate dataset repository. This typically links CrossRef article/chapter DOIs with DataCite dataset DOIs or other persistent, unique dataset identifiers. This is an extension on some proposed work for NCSA's **National Data Service (NDS).** We have developed a search system over the Scopus database (using the Scopus APIs) that performs keyword/title/author searches and provided links to all supporting or supplemental datasets in DataCite or a subject disciplinary dataset repository.

Worked with the National Institute of Technology Silchar in Silchar, India on their new library and support services. Visited NIT Silchar in January 2015 for several presentations at a conference they hosted and to consult on digital scholarship and engineering library services. Have been following up on recommendations for digital scholarship centers and visualization labs in their new Library Learning Center.

Added to the digitized of Coordinated Science Laboratory **(CSL) reports** for IDEALS.

Continued work on the bento and classic **Easy Search** suite of discovery and delivery software packages, including detailed transaction log analyses and user search behavior modeling.

Major Challenges

With the growing COE research, data, and instructional activities and the focus on design learning, there is a growing need for digital scholarship tools and services. Although we have

added a Research and Data Services Librarian and a percentage of the time of the Biosciences Librarian, we are still significantly down in terms of numbers of librarians from eight years ago.

Increased support is needed for bioengineering and computational science. The engineering-based medical school will require a team effort to support.

Collection inflation is already a problem, given the two straight years of zero inflation money, and without Library or campus support will be a critical problem.

Development and fund raising efforts need to be increased and better organized and endowment and gift funds for the IDEA Lab need to be pursued. .

The IDEA Lab services and technologies need to be better developed and deployed. Stable endowment funding needs to be secured and staffing needs for the IDEA Lab must be met.

Espresso Royale

Espresso Royale opened for business on September 23rd, 2016. According to the area manager, the Grainger Engineering Library location is the highest grossing store in their company. No doubt the coffee shop contributed to the increase of 30% in the number of visitors (based on Security Gate Counts) to Grainger this past academic year.

Changes

Dmitry Tartakovsky accepted a position in February of 2016 as Managing Editor for the Slavic Review, an Interdisciplinary Quarterly of Russian, Eurasian, and East European Studies. Rhalo Thomas was hired in September of 2015 to fill the vacancy created by Lyn Petrie who retired. Rhalo resigned in July of 2016 after having accepted a position with the Railroad Retirement Board, citing budget uncertainty at the state level as cause. With the lifting of the hiring freeze on Civil Service staff in August, we hired Brian Clark as a late evening Library Specialist. Joseph Hall-Ingram was hired in June of 2016 to fill the vacancy left by Dmitry Tartakovsky.

Contributions to library-wide programs.

The bento and "classic" Easy Search and the Journal and Article Locator are used library-wide by patrons in all subject disciplines. An Easy Search custom search box is used in the web sites of 21 departmental libraries and programs. GELIC librarians and GAs are involved in supervising and executing the web content team WordPress conversion project. A number of other software systems developed in GELIC, such as the OAI-PMH harvesting programs, are being used in CAM and in DCC for a variety of purposes. GELIC faculty, including Christie Wiley, Mary Schlembach, and William Mischo, are heavily involved in the Library Research Data Service (RDS) and have worked with the EZID DataCite metadata and DOI minting services and on the RDA collaborative project to connect DataCite DOIs and CrossRef article DOIs through the Scopus database. GELIC librarians are involved in several dataset and metadata deposit projects through IDEALS (in particular a Nuclear Physics Laboratory data project and two department of civil engineering dataset projects).

Grainger facilities continue to be utilized by the Library, COE, and the campus administration for meetings and workshops.

The number of simultaneous wireless connections in the building has peaked at over 2000 during this past academic year. Technology Services expanded the number of wireless access points throughout the building and, in the Summer of 2016, upgraded the hardware as well

Goals for the Coming Year

Continue fund raising activities, in particular for IDEA Lab services.

Continue implementation of the IDEA Lab services and facilities. Continue to develop a cross-college programmatic suite of services and look to interfacing with the new Design Center.

Continue work on CARE and additional undergraduate support initiatives involving both the COE and the Library.

Develop a closer working relationship with the GEBI (Grainger Engineering Breakthrough Initiative) Big Data program, including working closely with a COE data research specialist.

Work with the Bioinformation Services Group on the engineering-based medical school.

Continue to foster data management and knowledge creation support initiatives within the COE and allied faculty.

Continue to enhance and expand Easy Search, in particular the bento-box version of Easy Search and other portal and search technologies.

Better integrate engineering, life science, and physical science collection decisions and collection development.

Graduate Assistants

Grainger Library graduate assistants engage in a variety of pre-professional activities, including collection development, reference, instruction, library duty officer and supervision, special projects (including DMP analysis), information system design and implementation, liaison assignments, and grant-funded activities.

There were 10 GAs in FY16, including 3.875 on Library funds and 1.375 GAs on Grainger endowment and grant funds. All GAs work at the reference desk and participate in chat reference. In the summer semesters Grainger Gas and librarians do all the evening chat reference sessions.

GA assignments:

Shelby Hallman
  CARE Info lit sessions
  GRIPTS

Reference
Referral Database
WordPress conversion
GOBI acquisitions
David Luftig
DMP analysis
Berthold text analysis project
Reference
GOBI acquisitions
Hoa Luong
Facebook/Twitter for Grainger
Digital signage
Reference
WordPress conversions
Referral Database
Douglas Heintz
Ethics CORE most cited/disciplines pages
WordPress conversion
Transaction log analysis
Reference
Claire Gianacakos
Mathematics Library web pages and projects
Digital Signage
Web projects support
Reference
Kevin Moore
Transaction log analysis
GRIPTS development
Reference
Collection Analysis support
DMP analysis project
Fatemah Hermes
LJUR project databases and literature review
WordPress conversion
Collaborative search project
Reference
Kortney Rupp
CARE Info lit sessions
Chemistry Library support
WordPress conversion
Reference
Grainger Facebook/Twitter
Lani Manion
Digital Signage
Reference
WordPress conversion
CARE Info Lit sessions

Alec Gramm
>DMP analysis project
>Bento system support
>Transaction Log Analysis
>Reference
>IDEA Lab support

Facilities
Total user seating: 1486 (with all conference rooms full);
At tables: 707;
At carrels: 464;
At public workstation or index tables: 202;
In group study rooms included in tables;
Informal: 113.

Hours Open:
Fall: 24/5 Sunday – Friday, Saturday 10 AM- Midnight
Spring: 24/5 Sunday – Friday, Saturday 10 AM- Midnight.
Finals Weeks: 24/7.
Summer I and Summer II: Monday – Thursday 8:30 – 3 AM; Friday 8:30 – 6 PM; Saturday and Sunday 1 PM – 8 PM.
Summer Interim Hours: Monday – Friday 8:30 AM – 5 PM; Saturday and Sunday Closed.
Personnel

Faculty:
William Mischo
Mary Schlembach (Physics and Geology collections at Grainger and coordinates PSED services)
Christie Wiley (May 2013 -)
Kelli Trei (July 2013 -)
Alexandra Krogman, Resident, Visiting (August 2015 -) in position formerly held by Mahoney

Staff:
Elisandro Cabada
Joseph Lynn Hall-Ingram
Jamie Hansen
Joshua Hollingsead
Sheila McGowan
Anne Silcox
Jianying Shou
Dmitry Tartakovsky (resigned February 12, 2016)
Rhalo Thomas (resigned July 15, 2016)
Brian Clark (September, 2016-)

Academic Professionals:
Jay Heldreth (IT)

Graduate Assistants:

Paid on Grainger Library fund (we are allocated 3.25 FTE):
50% Douglas Heintz (1st year)
50% Kevin Moore (2nd year)
50% Claire Gianacakos (2nd year)
50% Fatemah Hermes (1st year)
50% Kortney Rupp (1st year, also Wert Fund)
50% Lani Manion (1st year)
50% Alec Gramm (2nd year)
50% Hoa Luong (2nd year)
25% David Luftig (2nd year, hourly)

Paid on Railroad Engineering Association of American Railroads Technology Funds:
50% Shelby Hallman (2nd year)

Student Wage Budget:
Base Budget: $144,264
Additional temporary: $2,100
Summer GA: $13,785
Student Assistant FE: 43

User Services
Gate Count: 1,013,336 extrapolated gate counts, 1.2 million actual
Circulation: Charges, Renewals, Discharges

28185	16511	28659

Desk Tracker Transactions: 3,008
Presentations: 130 presentations/tours, 789 attendees

Cataloging: Voyager Items   Total New Titles Added   Total New Items

Engr	**1,763**	**1,868**

Appendices, separate word document (endofyear2015-16.docx).
Gate counts, patron counts, Finals counts, sweep week counts, wireless counts.