

## **Grainger Engineering Library Information Center**

**Annual Report, July 1, 2014 – June 30, 2015**

### **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 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. The GELIC has served as a laboratory and incubator for the development and implementation of emerging information technologies, both within the UIUC Library and in national and international settings. GELIC faculty and academic professionals have long played a leadership role within research libraries, having secured over \$16.6 million in outside grant funding since 1994 and authoring some 50 articles and conference papers on innovative digital library services. Under the DLI-I and other grant projects, GELIC researchers developed the first XML based journal full-text delivery systems and played a major role in the pilot study of Digital Object Identifiers (DOIs). 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 internationally.

The GELIC continues to focus on the provision of technology and collaboration services and spaces. 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.

#### **Research and Instructional Support**

In FY2015, the College of Engineering (COE) added 20 new faculty members, growing to a total of 391 faculty. This represents 20.2% of all campus tenure system faculty. The COE and directly allied units are responsible for generating 59% of the campus ICR monies and 65% of all the sponsored research monies. In addition, the COE enrolls 10,421 total students (24% of the campus total) and awarded 34.5% of the FY2015 PhD degrees. By any measure, the importance of 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 97% of the campus sponsored research support.

#### **Collaborations**

With the introduction of the Library's Research Data Service (RDS), the partnership with NCSA and the National Data Service (NDS), and the continued development and use of the GELIC

custom data management plan template, we have significantly increased our presence in data management collaborative and cooperative activities.

The Grainger Engineering Library is involved with significant collaborative projects with faculty in Computer Science (Cheng Zhai, Kevin Chang), Civil and Environmental Engineering (Al Valocchi, Mark Rood, and Jeremy Guest), Electrical and Computer Engineering (Gary Eden. Pete Sauer, Phil Krein), Biophysics (Klaus Schulten), Biophotonics (Steve Boppart), Physics (Doug Best) NCSA, and the I2CNER consortium. The early adaptors in the Grainger Engineering Library Informatics, Design, and Data (GLID2) Center project include the COE Technology Entrepreneur Center (TEC), the Mechanical Science and Engineering 470 senior design capstone class, and several computer science visualization classes and laboratories.

We are partnering with Kyushu University in support and research extension work for I2CNER (International Institute for Carbon Neutral Energy Research).

### **Major Accomplishments**

We have continued work on the **GRIPTS (Group Information Productivity Tools) digital scholarship custom service tools** for faculty individuals and groups. GRIPTs now include author linking, pre-determined Google News matches, author H-index links, and pre-stored key search terms which display ES results, a citing references search, and a self-contained version of Journal and Article Locator. Developed a multi-group version. Implemented for several Physics groups, Geology department, a Biophotonics group, a Biophysics group, Mechanical Engineering and Sciences department, Nuclear Science and Engineering, the Electrical and Computer Engineering department, and the Civil and Environmental Engineering department. GRIPTS are also being developed for Chemistry, several biology departments, and other departments. 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>

<http://hades.grainger.uiuc.edu/guy/gatest.asp?ece>

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 analyzed NSF DMPs through UIUC grants submitted through Fastlane (NSF). Carried out **detailed analysis on 1260 proposals**; presented results at two conferences and published a paper on the analysis in a 2014 issue of *Journal of eScience Librarianship*. An updated NSF DMP plan analysis is being conducted. The Grainger DMP template has been used on 250 NSF proposals, including 49 funded grants,

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 4<sup>th</sup> Floor. Implemented a library information literacy program in CARE and continued the Research Rat seminars held in CARE. Grainger librarians and staff and COE academic professionals and staff presented on the CARE project in June 2014 at the annual meeting of the American Society for Engineering Education. The paper was published in the conference proceedings.

Work has progressed on the **Grainger Engineering Library Informatics, Design, and Data (GLID2) Center**, which will serve as a prototype collaboration space and incubator environment for students and faculty to utilize advanced informatics, visualization, and data analysis tools in the creation and application of new knowledge. Located on the lower level west and center areas and the second floor east area of the Grainger Engineering Library, the goal of the GLID2 is to facilitate faculty/student entrepreneurial activities and to fuel innovations in next-gen design and data analysis. The GLID2 will provide spaces and technologies to enable faculty and students to collaborate in the exploration of the interface between design, informatics, visualization, and big data.

The GLID2 will involve remodeling approximately 12,000 square feet in the GELIC lower level in order to provide a range of digital scholarship and design learning support activities. The key components of the GLID2 will be: several informatics laboratories offering students/faculty advanced information retrieval and database technologies; a number of student collaborative work areas with movable and wall-painted whiteboards and movable high definition monitors on carts; a number of collaboration tables with attached monitors for group viewing of work; a multi-screened presentation area for student/faculty talks; and a large multi-paneled monitor visualization wall for high definition data analysis and presentation. The anticipated initial cost for the GLID2 project is \$670,000 for remodeling, electrical and data work, and the purchase of computing and visualization equipment. It is anticipated that the establishment of this knowledge creation environment and infrastructure will allow us to pursue additional grants for supporting and extending the development of innovative information technologies.

Managed collection budget of \$1.9 million. Purchased Taylor and Francis, Elsevier, Springer, and Wiley **backfiles and reference works**, 8<sup>th</sup> 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 850 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 8 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 1<sup>st</sup> Floor conference room and began to investigate a planned Lower Level video conferencing room.

Worked with **I2CNER (International Institute for Carbon Neutral Energy Research)**. This is a 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. Visited Kyushu University to discuss areas of collaboration between the two university libraries. Also entertained a delegation of Japanese visitors, including the President 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 on **transfer of Grainger computing server infrastructure to the DCL server center**. Moved the Easy Search server to DCL and deployed the new ES production version in May 2014.

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

With Library Development Office, continued work on **Bitzer Endowment for Emerging Information Technologies**, including meeting with Donald and Maryann Bitzer during induction of new members of College of Engineering Hall of Fame members.

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.

Working with NCSA on **National Data Service (NDS) activities**, including preparation of NSF DIBBS proposal. Working with NCSA on the **Materials Data Facility (MDF)** which is a project within the Materials Genome Initiative.

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.

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

With support from IEEE, finished **digitizing Power Engineering Society records** and photographs.

### **Major Challenges**

With the growing COE research, data, and instructional activities and the focus on design learning, there is a growing need for support. 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 seven years ago.

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

Collection inflation remains as a former and future threat.

Development and fund raising efforts always need to be increased.

The GLID2 services and technologies need to be developed and deployed. Stable endowment funding needs to be secured and staffing needs for the GLID2 must be met.

### **Changes**

A longtime staff member, Lyn Petrie, retired in June, 2015. Megan Mahoney, who had moved only months before into a tenure system position after several years as a Visitor, took a position at Emporia State University in Kansas and was replaced by the first incumbent in our Engineering and Physical Sciences Libraries resident Librarian Alexandra Krogman.

### **Contributions to library-wide programs.**

The Easy Search, Journal and Article Locator, and (for a time) the Primo custom tile systems 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. 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 an NDS 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 building itself is heavily used by the entire student population. There have been several peak times with over 1,500 simultaneous wireless connections in the building.

### **Goals for the Coming Year**

Continue fund raising activities and the work toward an endowed chair for the Head of the Grainger Library.

Begin implementation of the GLID2 Center services and facilities. We need to continue to survey COE needs and develop a cross-college programmatic suite of services. We need to resolve the issue of naming opportunities within endowments and gifts for GLID2.

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 9 GAs in FY14, including 3.25 on Library funds and 1.75 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:

Aleshia Huber

- CARE Info lit sessions
- GRIPTS
- DMP analysis
- Transaction log analysis

Julia Cater

- DMP analysis
- Web page redesigns

Andrew James Stephens

- Facebook/Twitter for Grainger
- Digital signage
- SQL databases
- CARE Info Lit Sessions

Jason Harvey

- Ethics CORE most cited/disciplines pages
- GELIC IT support

Emily Purcell

- Updating Blue Book content
- Web projects support

Jamie Wittenberg

- Transaction log analysis
- Reference coordination

Minhao Jiang

- IEEE digitization project
- Transaction log analysis
- Evaluating/weeding reference collection

Alexandra Krogman  
CARE Info lit sessions  
Digital signage  
Transaction log analysis  
Grainger Facebook/Twitter

Carly Hafner  
Referral database  
GRIPTS  
CARE Info Lit sessions

## **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: 8:30 – 2 AM; Monday – Thursday; 8:30 – 6 Friday; Saturday and Sunday 1 PM – 8 PM.

Other Summer Hours: 8:30 – 5.

## **Personnel**

### Faculty:

William Mischo

Mary Schlembach (maintains Physics and Geology collections at Grainger and coordinates PSED reference work)

Christie Wiley (May 2013 - )

Kelli Trei (July 2013 - )

Megan Mahoney (left August 2015)

Alexandra Krogman, resident, Visiting Assistant Professor (August 2015 - )

### Staff:

Elisandro Cabada

Dmitry Tartakovsky

Lyn Petrie (retired June 2015)

Joshua Hollingsead

Jamie Hansen

Sheila McGowan

Anne Silcox

Jianying Shou

Academic Professionals:  
Robert Ferrer (left May 2015, IT)  
Jay Heldreth (IT)

Graduate Assistants:  
Paid on Grainger Library fund (we are allocated 3.25 FTE):  
50% Julia Cater (1st year)  
50% Andrew James Stephens (1st year)  
50% Aleshia Huber (1st year)  
50% Jason Harvey (1st year)  
50% Emily Purcell (1<sup>st</sup> year)  
50% Minhao Jiang (2<sup>nd</sup> year)  
50% Jamie Wittenberg (2<sup>nd</sup> year)  
50% Alexandra Krogman (2nd year)

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

Student Wage Budget:  
Base Budget: \$144,264  
Additional temporary: \$4,100  
Summer GA: \$13,785  
Student Assistant FE: 43

**User Services**

Gate Count: 905,152 extrapolated (gate counts)

Circulation: Charges, Renewals, Discharges

37585	645	40408
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Desk Tracker Transactions: 18,273

Presentations: 21 presentations, 615 attendees

Cataloging: Voyager Items    Total New Titles Added    Total New Items

<b>Engr</b>	<b>3,602</b>	<b>3,635</b>
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Appendices, separate word document (endofyear2014-15.docx).  
Gate counts, patron counts, Finals counts, sweep week counts, wireless counts.