The Georgia Institute of Technology Library and Information Center would like consideration for the Excellence in Libraries Award.

Introduction

The Georgia Institute of Technology, founded in 1885, is located in the heart of Atlanta, Georgia. With approximately 18,000 students and nearly 900 academic faculty, Georgia Tech is recognized as one of the nation's top 10 public universities and top 5 graduate engineering schools (U.S. News and World Report 2006). Georgia Tech's vision is to "define the technological research University of the 21st century and educate the leaders of a technologically driven world".

The Library and Information Center at Georgia Tech is comprised of two adjoining structures known as the West and East towers. These buildings, built in 1952 and 1969 respectively, comprise 220,000 square feet and hold over 4.3 million volumes. With an annual collections budget of approximately $5.2 million, the Library provides access to collections of more than 270 online databases, 30,000 electronic books, and 23,000 e-journals. A branch Architecture Library contains 45,000 items.

At the beginning of 2001 the Library was a static organization. Annual library visits in the prior 15 years dropped an average of 5% per year. Interiors were drab and scarcely improved over several decades, and a high percentage of user space was given over to collections. Outdated service points were either misperceived or ignored by users. Our digital agenda lacked cohesion and direction, and we were excluded from campus discussions concerning technology, pedagogy and learning. A majority of students and faculty complained that the Library was disconnected from the University and inconsequential to their academic success. We had become the appendix of the larger body.

In mid-2001, the newly-arrived Library Dean initiated an environmental scan to identify opportunities to contribute to the learning and research agendas of the University. We began to listen to students and faculty. They told us to move swiftly and effectively to provide digital content and to make our services evident and relevant. A 5-year strategic plan was crafted with both librarian and staff participation. Our work to reinvent the Georgia Tech Library continues to engage the majority of our employees, along with a growing cadre of student and faculty collaborators. This application traces key elements of the strategic plan and our relative success in attaining its vision. We present evidence of 5 years of rapid transformation and positive outcomes that garner campus acclaim and register a national impact. We believe that we represent a *library of excellence*.

> **Mission**
>
> *"Deliver resources to satisfy information needs, promote lifelong learning, and create productive connections for the scholarly community"*.

I. Enhance and expand customer-centered services at all levels to enrich research, teaching, and learning.

We realized that all public services, resources and user spaces required assessment from the consumers' perspective. A team of Library staff facilitated an effort to reduce service points and gain efficiencies in number and quality of staffing. Consolidation of service points provided opportunities to improve work processes and staffing models. Comprehensive technology, information, and circulation assistance was offered over significantly expanded hours. The Library initiated an ambitious commitment to improve user spaces. As restrictive rules were erased, users experienced a kinder and gentler library that focused on their welfare.

> *Library service desks were numerous, underutilized and required large time commitments of staff; little-used materials occupied prime space; users did not comprehend services.*

A series of reforms were enacted by late 2002 to achieve the following efficiencies:

- Information Services and Access Services were combined into one division, Public Services.
- One general and two specialized reference service departments with separate service desks were consolidated into a single Information Services department, relocated to the entrance of the Library.
- The majority of Information Services support staff were re-trained and promoted as *information associates*, a newly-created position for the University System of Georgia that combines information skills with basic technology expertise.
- The economy gained in staffing reference services from one desk enabled the Library to extend full-time reference and information associate staff into 24-hour service.
- An aesthetically dramatic learning commons (the West Commons) was installed adjacent to the Information Services desk in an exceptional 2-story space that formerly housed a cubicle farm. The Office of Information Technology became an indispensable partner in this dynamic setting.
- The print reference collection was pared down to most-used titles with the remainder returned to the general stacks.
- Approximately 150 user seats were added to the first floors of the East and West buildings.
- The photocopy center was merged into the Circulation department; this addition of full-time staff allowed for 24-hour service at the Circulation desk.

Our public services model was transformed within a year of beginning this work. Public Services staff were aligned into fewer departments, and teams were increasingly relied on to achieve needed results. Today we understand that the reorganization and consolidation efforts were fortuitous for customers as well as staff.

> *Attention to student learning and academic success was beyond our scope. We scarcely accommodated users who studied in the Library. Students responded by avoiding the Library.*

We had to understand and empathize with students in order to attract them to the Library. In initial conversations, students told us that the Library could become a logical and preferred destination for

individual and group study, if only we could "get it right". Programming for new learning spaces came to rely almost exclusively on student insight and innate wisdom. One extensive investigation delved into students' learning and productivity cycles by surveying the most popular study spaces on campus. We took Polaroid pictures of several hundred students engaged in group study, followed by interviews. We learned that students prefer spaces that are safe, aesthetically inspiring, filled with their cohorts, supplied with persistently good refreshments and imbued with good technology. In a separate series of affinity focus groups with students and faculty, we learned that great study spaces provide refreshment for the mind, celebrate student creativity, offer amenities for relaxing and recuperating, allow for serendipitous meetings among friends and facilitate acquaintance between students and faculty. In 2002, the Library began a series of renovations to test hypotheses in support of student learning and success.

- **West Commons in partnership with OIT (Fall 2002)**

In the Library's first large-scale partnership with the Office of Information Technology (OIT), we created the West Commons General Productivity and Multimedia Center adjacent to the consolidated Information Services desk. Prior to this installation OIT offered computer clusters, both inside the Library and across campus, where students found little-to-no assistance in drab, uninspiring surroundings. The West Commons provides an aesthetically stimulating environment imbued with in-depth information and technology assistance in a 24-hour setting.

General productivity workstations (85) are loaded with extensive suites of software, headsets with microphones to enable chat, and scanners. Unobstructed sight lines in the West Commons allow for students to "see and be seen" in the act of study. At the request of faculty, a handful of workstations are reserved for graduate teaching assistants each evening to tutor students in challenging courses. Employees from both OIT and the Library collaborate with one another. We created a new support staff position for the University System of Georgia, information associate, that represents a re-engineering of the Library's reference assistant position.   The new position balances information skills with technical expertise.

A multimedia center with 25 high-performance workstations inhabits an adjacent area of the West Commons. OIT staff and highly skilled student assistants provide extensive technology support for sixteen hours most days. Classes-on-the-fly cater to a fluctuating demand for specific multimedia training. The high quality of student work produced in the multimedia center attracts the attention of faculty who regularly send entire classes to the facility for in-depth training in cutting-edge applications. In 2003, a year when Georgia Tech delivered $250,000,000 in new or renovated spaces, students voted the West Commons the "most important improvement at Georgia Tech".

- **Presentation Rehearsal Studio (Spring 2004)**

The survey of preferred study spaces on campus revealed that student teams struggled to identify accommodations to practice major presentations. We installed a Presentation Rehearsal Studio in a space adjoining the West Commons. The Studio is outfitted with custom furnishings and a digital camera for recording practice sessions. Students book the Studio online, and rarely encounter Library staff. The Presentation Rehearsal Studio averages 900 reservations a year. It has inspired copies on the Georgia Tech campus and in academic libraries in several states, including California, Florida, South Carolina and Ohio, as well as Canada.

- **Resource Center (Spring 2006)**

As student support units on campus took note of the hordes of students descending on the Library, several primary agencies asked to be included in our setting. We and OIT complied by imagining the Resource Center. The Library targeted a little-used space of 3,500 square feet to renovate with funds provided by OIT. The Resource Center became the new home of OIT's walk-in computer support functions (with doubled hours to match students' long hours of need), an evening hours facility for the most popular tutoring program on campus, and the first storefront for the University's new Undergraduate Academic Advising office. A sophisticated conference room was added that doubles as a second presentation rehearsal studio, and as an intimate meeting site for the Counseling Center's monthly "student self help" seminars that relocated to the Library.
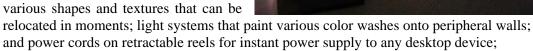
- **East Commons in partnership with OIT and Auxiliary Services (Fall 2006)**

The East Commons, our most recent experiment in space development, is a collaboration with OIT and Auxiliary Services. In March 2005, the Library, OIT and our Student Advisory Council (mentioned elsewhere in this application) conducted focus groups to determine programming components for an 8,000 square foot renovation on the first floor of the East building. Accommodations for groups of students were repeatedly suggested. We responded with these elements for the East Commons:

- o Jazzman's Café (7:30am to 11:00 pm) and a suite of vending machines;
- o 30 group computer stations in two configurations to facilitate group interaction;
- o relaxed study zones with variously-shaped task tables and chairs on casters for easy reconfiguration and movement;
- o a study zone that transforms into a performance space for an audience of 100, with 80" rear projection screen, and digital video capture of performances featuring the best and brightest individuals at Georgia Tech;

- o a ceiling infrastructure that supports myriad options for custom lighting; insertions of plasma screens, wireless projectors, and other technologies to support student learning; fabric walls of various shapes and textures that can be relocated in moments; light systems that paint various color washes onto peripheral walls; and power cords on retractable reels for instant power supply to any desktop device;
- o exhibit space for student art and stimulating topics sponsored by academic departments; and
- o a commons coordinator and assistant coordinator who monitor and adjust the technologies, fabric walls, lighting and furnishings; they also curate the student and faculty performances and art that infuse the facility.

We discover that learning commons, if thoughtfully conceived and nurtured, can be epicenters of student endeavor. The opening of the Library's West and East Commons has more than doubled the annual Library door count of 2001. Our customer-centered process for creating compelling learning spaces is touted by campus administrators as an important model for other units to emulate. The Library's deep partnership with the Office of Information Technology demonstrates the power of collaboration, and suggests new relationships. Undergraduate Academic Advising, a tutoring program, Auxiliary Services and the Counseling Center joined the Library and OIT as trusted partners who together focus on student success. Dozens of academic libraries from throughout North America (and beyond) visit our

transformed spaces and seek our advice. We are invited to tell our story at state, regional and national forums.

> "*Before any new buildings begin construction, the planners should follow the library's example*." – Opinions Editor, *Technique,* Friday, March 11, 2005.

Rules and regulations were rigid, punitive, and not sensitive to the Tech consumer lifestyle.

In 2001, we began to mold library policies to accommodate student needs. We addressed these needs by:

- increasing checkout periods for all students from 1 month to 1 semester with 2 subsequent renewals
- eliminating the overdue fine to reduce conflict with student customers, and increasing the recall-overdue fine to foster fair use
- purchasing laptops, digital cameras, camcorders, and wireless cards for circulation.
- subsidizing ILL requests (up to $25)
- increasing hours of operation to 24 hours / 5 days a week with full service at both Information Services and Circulation desks
- allowing food and drink throughout the Library, and cell phone use in designated areas

Students, faculty, and staff now enjoy a more relaxed and friendly library. Customer compliments (and offers of tips!) are frequently directed to Circulation staff who are no longer associated with negativity and are given the freedom to imagine other improvements to services.

Our partnerships with campus service entities were beginning to flourish, but we had no equivalent partnership with students.

In January 2005, Library Administration was approached by several outstanding student leaders who complimented our recent efforts to transform the Library and offered to help us. At our suggestion, they enthusiastically agreed to comprise a *Student Advisory Council* to guide our work and to assist with capturing student opinion. The Council meets at least every other week at a working lunch hosted by the Library Dean. Graduating Council members nominate their successors from among rising student leaders. In its first 20 months of existence, the Council:

- influenced the campus Technology Fee Committee to award a total of $470,000 in back-to-back annual requests for commons' workstations, peripherals and software;
- helped Library administration to acquire $250,000 from an alumni reunion class for the East Commons;
- participated in running focus groups and analyzing resultant data that produced programming for the East Commons;
- insisted that they present the Library's "Cinderella story" to the University President's Executive Board,
- launched an annual freshman book reading program for the University, and
- provided a working member to the Library's recently appointed Strategic Planning Task Force.

The Library's accountability to the University and its students is strongly enhanced with a Student Advisory Council. The Vice Provost for Academic Affairs proclaims that the Library's model for

officially engaging student opinion and ownership should be broadly adopted across campus. Visiting college and university libraries ask for guidance on starting their own student advisory groups.

We saw a need to help students identify with the Library and to instill in them a sense of ownership and pride in place.

Feedback from students coupled with helpful insights provided in *Library as Place: Rethinking Roles, Rethinking Space* (2005 CLIR no. 129) and *Libraries Designed for Learning* (2003 CLIR no. 122) lead us to believe that libraries can be more than study halls with books and service points. Many of the peripheral enterprises that we host result from students actively seeking our collaboration in their creative endeavors and stress-relieving activities. Here are some of the ways we help students to take pride in their library:

- We display student-produced art throughout the Library on a frequent cycle.
- We host weekly meetings of the Photography Club and BuzzStudios (a feature-length movie-making club).
- We invite a cappella groups and student musicians to provide regularly scheduled daytime performances, and spontaneous evening performances.
- We provide space and assistance to student service organizations that: offer free food and drink to students during final exams; sponsor clothing drives and fund-raisers for neighborhood families; provide student leadership and student portfolio assistance.
- We host reviews of student-produced short films, documentaries and multimedia shows; and host Georgia Tech's participation in Campus MovieFest, the largest student-produced short-film festival in the United States.
- We host poetry readings and special engagements in the East Commons' performance space, and student book club meetings in Jazzman's Café.
- We host a student *game night* at the start of the academic year.
- We provide a "live" venue in the East Commons for the campus radio station to interview special guests.
- We refurbished and extended access to a handsome meeting room on the 7th floor of the Library with a terrific view of campus and market the space to special student groups and academic departments as a superior facility for exclusive functions.
- We improved the amount and quality of comfortable furniture for relaxation and informal gatherings.
- We prominently display a popular DVD movie collection and purchased an array of technology "toys" for checkout (laptops, camcorders, digital cameras).

Students who first experience our facility on special occasions are likely to return for study and productivity. These initiatives enhance the Library's reputation as it supports the larger aspirations and needs of students. The shift in student sentiment and identity is away from "the library" and toward "my library".

Many patrons were not aware of the services and resources we offered.

Since 2002, the Library has used feedback and assessment to suggest needed change. The Library plans and develops strategically, and our goals are influenced by an understanding of user needs and expectations. Based on data gathered from focus groups, surveys, LibQUAL+, and informal dialogues with our students and faculty, we consider their level of satisfaction with and awareness of services and resources so that improvements are identified and adjustments made.

- **LibQUAL+**

The Library has participated in LibQUAL+ to measure our performance and compare it to other libraries. We recommended that all University System of Georgia (USG) libraries adopt LibQUAL+ so that we might compare data and arrive at consortia solutions to universal issues. We hosted a kick-off workshop in 2006 that resulted in 2/3 of the USG libraries adopting this assessment tool. LibQUAL+ presentations have been made at two state conferences and at ALA. A Georgia Tech librarian is the coordinator for the USG LibQUAL+ initiative.

- **Aggressively market our services and resources**

We launched several initiatives to market our classes, events, resources, policies and services in eye-popping graphic displays that appeal to our visually-oriented student population. These initiatives include the *T-Paper*, a monthly newsletter-type publication that is 'distributed' only in the restrooms of the Library; and vibrant posters featuring student athletes that tout the Library as a vital campus crossroads. We are also venturing into social networking websites and social web tools to engage patrons. For two years, student blog postings have been used for assessment and outreach, as well as indicators of the campus mindset. These tools help us to create a unique and personalized patron experience and to ultimately reshape student perceptions.

- **Participate in campus-supported events and activities**

We market our services and resources by participating in campus orientation programming including a 3-day Welcome Back program for all students, freshman orientation, a "marketplace of helpful services" event, Graduate Expo, and the Housing Resource Fair.

Two more recent pursuits are becoming perennial favorites – Tuesday Talks and the Welcome Week "CeLIBration" event:
  - o Tuesday Talks is a faculty speaker series aimed to "bring research to the rest of us". In these Talks, outstanding research faculty present an overview of their work to students in an informal setting where inquiry and frank discourse are encouraged.
  - o Our "CeLIBration" is part of freshman Welcome Week, a fun-filled night of games, food, music, speed dating, socializing and integration for new freshmen. This social event has become one of the most well attended Library functions of the year. Attendance increased from 100 in 2004 to more than 600 in 2006.

In combination, these successful ventures enhance communications and Library participation with students and faculty, resulting in a broader exposure to our services and offerings.

II. Expand instruction and training programs for students, faculty, staff, and alumni to provide tools and competencies for navigating the Internet and finding, filtering, evaluating, and using information effectively.

We provide Georgia Tech students, faculty and staff with valuable resources. We seek opportunities to support their education and training needs. With the use of our course and program-integrated instruction, campus collaborations, website services program, Open URL link resolution and usability studies, we provide our constituencies with the skills and resources necessary to use information effectively.

We saw a need to provide instruction in information literacy, as well as technology literacy necessary to support student success and lifelong learning of our faculty, staff, and students.

Since 1999, our Reference Subject Specialists and Archivists, both in collaboration and individually, have made significant in-roads establishing collaborative partnerships with teaching faculty to offer customized, course-integrated information literacy sessions. Sessions are held in myriad classes – ranging from introductory courses to capstone courses, and cover information literacy skills for humanities, social sciences, sciences and engineering.

In 2004, we began a collaboration described by the Department of Biomedical Engineering as a "full integration" with their innovative Problem-Based Learning curriculum. We provide people, resources and space to support the program – particularly the BME 1300 course, an introductory course required of all BME majors.

- o Resources are provided both online and in print, in a joint effort with Emory University's Health Sciences Library. The curriculum precludes the use of textbooks, so up-to-date information sources (from journals to handbooks to proceedings) are needed.
- o Research skills sessions are offered employing the Problem-Based Learning model, and additional technology (EndNote) sessions are provided along with one-on-one and group consultations throughout the semester.
- o Students make use of library study & work zones for group work, heavily utilize our Presentation Rehearsal Studio as they prepare for group presentations throughout the semester, and consistently use our LWC/EC computer labs for both research and project development.

- **Provide training to support campus initiatives**
  We continually seek opportunities to support the education/training needs of students, faculty, and staff. Several instructional initiatives have been launched.
  - o We offered Tegrity system training in partnership with the Distance Learning and Professional Education program, OIT and the Center for the Enhancement of Teaching & Learning. Tegrity is a course capture hardware/software system under examination for widespread campus use.
  - o We provide sole training for EndNote, a bibliographic management software tool that was purchased with the Student Technology Fee from a joint Library/OIT funding proposal. We offer over 25 sessions each semester; some as walk-in classes, and others in conjunction with departments, research groups, or specific academic classes.
  - o Dreamweaver (web creation software) training is offered to support the burgeoning incidence of required multimedia projects in English 1101 and 1102 classes.

- **Engage in campus collaborations for students**

Instructional opportunities have arisen from several significant new campus collaborations over the last few years.

- o We provide LaTeX training in partnership with the Graduate Student Government Association and the Graduate Studies & Research Program. LaTeX is a high-quality typesetting system designed for the production of technical and scientific documents and is the recommended standard for thesis preparation at Georgia Tech. The Library provides the only organized support systems for students to develop the needed skills set.
- o As a partner with the Women in Engineering Program, a female science/engineering librarian serves as one of the 5 instructors in the Technology, Engineering & Computing Camp (TEC), a week-long camp designed to offer middle school girls an early introduction to the world of technology, engineering, and computing. She offers Web Page Design classes each day as part of a schedule that also includes Robotics, Nanotechnology, Presentation Skills and Rockets.
- o Information competency workshops are offered in partnership with the Counseling Center, Teen Works Program, OMED (Office of Minority Educational Development) Challenge Program and, most recently, the Undergraduate Research Opportunities Program where novice researchers gain the library skills needed to successfully complete their project proposals and research papers.

- **Create Brownbag Training Series for Georgia Tech staff**

In 2005, we initiated a series of Georgia Tech staff training Brownbag workshops in collaboration with the Office of Organizational Development. These workshops are tailored to the novice researcher on campus, often administrative staff, who desires a basic level of competency with research in Library databases, Internet search engines, and/or with our catalog system for both personal and professional purposes. In 2007, in order to address a new mandate of the Provost that emphasizes a data-driven approach to hiring, tenure and promotion processes, we will offer workshops for faculty and staff on the use of citation analysis tools.

We provide a multitude of instruction and training opportunities that emphasize our dedication to the development of information and technical competencies for lifelong learning. Our prized collaborations with faculty and the Georgia Tech community at-large have been instrumental in forming a deep connection to the campus and have fostered the development of our reputation for providing invaluable expertise in these arenas.

We wanted a user-driven web presence.

We needed a more robust structure for our website to accommodate the increasing number of online resources added during the past several years. We sustain our web services program with a comprehensive assessment agenda that provides for the study and analysis of user needs, expectations, and behaviors in the digital library environment. We actively research and develop tools to improve information access and retrieval and our web presence is dynamic and responsive to changes in the greater Internet environment. We strive for consistency, efficiency, convenience, and visual appeal.

- **Usability studies**

Early Library websites were insensitive to user needs. We required feedback from undergraduate and graduate students with limited experience of our site to tailor the site to their needs. We now collect user input derived from usability tests, surveys and other data collection methods. Input and feedback is collected from usability tests conducted on-site and under the leadership of the Web Program Manager and other staff. Methodology has been developed from several years of research on accepted best

practices for web usability studies. The studies' findings are analyzed by the Web Program Manager, who then guides the development of new iterations. We strongly believe in iterative testing, realizing that the website is really never a finished product, but rather a continuously evolving service.

- **Web program**

The process of managing our web presence has evolved over the past several years. We increasingly rely on a Library-wide staff effort to collaborate, share ideas, and build content that is consistently user-centered. Our web management program is enriched by the disparate talents and interests of staff at all levels, as well as ideas and inspiration from peer institutions. We present a web presence that is functional, reliable, and innovative.

- **Online access to full-text**

Students and researchers use the SFX OpenURL Link Resolver to access conference proceedings and to link to gray literature from Google and other resources. Our strategy was to expand the capability of the link resolving process by integrating a series of sophisticated interactions with other services, such as Google Scholar, OCLC's Directory of OpenURL Resolvers and xISBN service along with a vendor's OpenURL resolver (ExLibris' SFX product) to provide richer and more effective linking services. This gave us opportunities to:

- develop the Wag the Dog web localizer (http://rsinger.library.gatech.edu/localizer/localizer.html) which analyzes content from search engines such as Google and link users from those search results to electronic copies available at the Georgia Tech Library.
- fostered the development of Umlaut, an OpenURL Link Resolver intended to improve access to library collections by contextualizing citations and available holdings more accurately for a given user. Currently running with Georgia Tech's catalog, Umlaut utilizes a host of web services and can take several paths depending on what it finds at various stages. The OCLC contest judges were impressed at how much the Umlaut does for the user; especially the effort to get them to full text files, and thought the use of OCLC services was well done.

> *WAG the Dog was runner-up in the First OCLC Research Software Contest. The Second contest was won with Umlaut, both developed by the Georgia Tech Web Application Developer.*

- promote the use of OpenURL at the national level by serving on the NISO OpenURL Z39.88 Advisory Committee and the OpenURL Review Panel.

The current implementation of FindIt, based on Umlaut technology, makes it possible for students to link directly to conference proceedings, pre-prints, and post prints. We will continue to exploit these technologies to offer increasing functionality for our users.

The input from usability studies helped us improve the efficacy of information retrieval for all students. Test findings have facilitated the development of new programs and applications, including the award-winning Umlaut. We now have a website built on solid, sensible information architecture.

III. Select, acquire, organize, preserve, and assess information and learning resources appropriate to Georgia Tech's mission and programs in cooperation with university libraries and informed by the academic needs of our campus constituents.

In addition to the Library's $5.2 million in annual collection development activities, partnerships and deep collaborations within the academic community are essential to our success. We participate in the Galileo statewide consortia to better provide our users with the most extensive and relevant information available.

Students, faculty, and staff want seamless access to full-text information throughout the University System of Georgia (USG).

To meet this need, the Library has participated in developing the Galileo Knowledge Repository (GKR), a statewide institutional repository for Georgia, based on the DSpace software, providing seamless access to the digital intellectual output of the 35-campus University System of Georgia (USG). We are the lead technical site for this ambitious initiative with three partner USG universities. Georgia Tech will co-host the GKR, once fully implemented.

We were the catalyst behind the statewide implementation of SFX and SFX has become a key component across the USG libraries today. It allows for resource localization in an open linking environment and serves as a cornerstone technology in the management of electronic resources. The Georgia Tech Library was the first in Georgia to embrace its potential.

Georgia Tech librarians and technologists are prominently featured in the Galileo Upgrade Phase 2 and were invited to lead the Galileo-based project to configure and implement the ExLibris MetaLib federated search software for use in the major research libraries in Georgia. We are the lead librarians and technologists for MetaLib implementation in Georgia.

In 2003, Georgia Tech absorbed the Institute of Paper Science and Technology (IPST), a private graduate school and research institute. The future of IPST's 70,000 item library collection and related services was unclear.

The successful merger of IPST with Georgia Tech allowed us to enhance our collections and provide valuable resources to those studying paper, textile and fiber engineering, biology, chemistry and chemical engineering, environmental engineering, public policy, business, and industrial engineering. We evaluated IPST's international collection of pulp and paper information resources and transferred more than 20,000 non-duplicate items to the Library. The mutually advantageous blending of the libraries also helped augment our personnel in the areas of Technology and Resource Services as well as Public Services by adding one librarian and four staff members from IPST. Today, we provide Georgia Tech students, faculty, and staff with one of the largest collections of pulp and paper information resources in the world.

IV. Use emerging technology to acquire, organize, store, and preserve digital information and multimedia content and create online collections for scholars.

In spring 2002, the Georgia Tech Faculty Senate issued a mandate that we provide electronic delivery of journals wherever possible. We created Electronic Resource Coordinator positions in both the Acquisitions and Collection Development departments to help fulfill this mandate. We now subscribe to 7,733 e-journals; an increase more than two fold over the 3,284 subscribed to in fiscal year 2002-2003. In

addition, the Library has expanded the Faculty Senate's mandate to include delivery of as much of the Library's collections to the desktop upon demand as possible. This focus led to needed growth in Systems, Archives and Records Management and the development of a new Digital Initiatives Department. Our digital focus is fast-paced and innovative to meet the needs of our community.

We need to collect and ensure persistent digital access to the intellectual output of the campus.

We created the Digital Initiatives Department in 2003, and by 2006, the department has grown to six full-time members. We reengineered and added positions in other departments to work in concert with Digital Initiatives. This collaborative effort produces some of our best work including SMARTech and EPAGE. In addition, this department is tasked with continual scholarly communication and collection building as well as keeping abreast of digital preservation technologies in order to preserve the digital output of our campus.

- **SMARTech**

In August 2004, we launched an institutional repository, SMARTech (Scholarly Materials And Research at Tech, http://SMARTech.gatech.edu), which has grown to over 10,000 items including pre-prints, post-prints, Georgia Tech theses and dissertations, (a collaboration with the Graduate School started in 2003 http://smartech.gatech.edu/handle/1853/3739), lecture and symposium videos built on the open source DSpace software. In fiscal year 2005-2006, users performed 50,434 searches, viewed 1,000,791 item records, and downloaded 489,292 items in SMARTech. The Digital Collections Archivist works closely with the department to collect and preserve Georgia Tech e-publications in SMARTech, an innovative use of an institutional repository.

- **EPAGE**

We established EPAGE (Electronic Press At Georgia Tech, http://EPAGE.gatech.edu) to provide critical production support services for campus produced intellectual output. The EPAGE service provides technical support and capture of conferences, technical support for journal publishing, and the capture of live presentations for inclusion in SMARTech. Our first experience with open-access (OA) e-journal production services came in 2006 with the journal, *Information Technologies and International Development (ITID)*, published by MIT Press. The Library provides back end, editorial process support for the journal.

> *"ITID is the first and only MIT Press journal to be published as Open Access and our collaboration with the Georgia Tech Library has been critical to the journal successfully managing this new publication model. The Library's support and leadership is ensuring that ITID will have more impact, a richer and more collaborative online environment, and will be better able to serve a world-wide epistemic community. The entire ITID team - including the editorial office, the MIT Press, and the Georgia Tech Library - will together help define the future of scholarly publication."* –Michael Best, Co-Editor-in-Chief

The experience the Georgia Tech Library has acquired through its institutional repository and membership in the DSpace Federation has allowed the Digital Initiatives and Systems departments to take a lead in the state-wide repository initiative, the Galileo Knowledge Repository in partnership with Georgia State University, the Medical College of Georgia, and the University of Georgia. According to the Registry of Open Access Repositories (http://archives.eprints.org/), SMARTech is; the 4th largest of 58 DSpace repositories in the United States, the 13th largest of 179 DSpace repositories in the world, the

13th largest of 201 repositories on any software platform in the United States, and the 55th largest of 764 repositories on any platform in the world (accessed 2006-11-15).

We needed the technological and institutional means to achieve the mission of collecting, and making available archival materials to support the teaching and learning mission of the Institute.

The Library saw a need to offer more relevant and dynamic services than previously provided by the Archives Department. An increased commitment to supporting the mission of the Institute through locally created digital collections for use in the classroom and a more robust records management program led to increased staffing and an Archives and Records Management Department.

- Participation in the beta-testing of the Archivists' Toolkit, an open source product to help reduce processing, training, and digital tool development costs, enable automated Encoded Archival Description (EAD) processing, and promote archival standardization.
- Adoption of DSpace, an open source institutional repository software, for use as a dark archive of digital archival materials and to populate digital collections served through Greenstone open source digital library software. This technological evolution led to increased staffing within Archives with the addition of an Access Archivist and Digital Collections Archivist, both dedicated to the digital access and preservation of collections.
- Creation of a Records Management unit of the Archives Department. In conjunction with a committee of campus leaders, we completed an assessment of the records management program at Georgia Tech in April 2002. The months-long project examined campus records management practices. As a result of this exercise, we established a Records Management unit as an arm of the Archives Department. We also developed an offsite Georgia Tech Records Center, and a records management training program for campus entities.

We established strong ties to departments on campus and produced digital collections in collaboration with their professors to bring collections digitally to the classroom, most notably: (1) The Griffith Observatory Star Award-winning *E.E. Barnard's Photographic Atlas of Selected Regions of the Milky Way* (http://www.library.gatech.edu/about_us/digital/barnard/index.html) which also received a favorable review in *Sky & Telescope.* (2) *The Fulton Bag and Cotton Mills Digital Collection* (http://www.library.gatech.edu/fulton_bag/). We also added a Records Supervisor and a Records Coordinator II to meet campus expectations and have increased the number of departments taking part in the program from 40 to 61. This program has become a vital part of the business operations of the campus.

> *"While some people may be ready to sell the SUV to own Barnard's masterpiece, Georgia Tech's online version is just as mesmerizing." –Stuart J. Goldman,* Sky & Telescope, *December 2005*

We need to explore the technological and institutional means to fulfill the Library's commitment to preserve collected digital materials for long-term access.

In 1996, RLG with its *Report of the Task Force on Archiving of Digital Information,* framed the challenge of managing digital information resources: "*If we are effectively to preserve for future generations the…corpus of information in digital form that represents our cultural record, we need… to commit*

ourselves technically, legally, economically, and organizationally to the full dimensions of the task." By 2002, the Library moved assertively toward managing licensed electronic resources and campus-generated digital intellectual output. Hence, we have worked aggressively to address the usability of digital information resources over time and across technologies. We began by establishing operational digital preservation networks and cooperative organizational models to manage them. Our technologies and organizational model are being adopted by other consortia in Alabama, Michigan, South Africa, and in the UK via a Joint Information Systems Committee-supported initiative. The Library is advising on this project which will result in the preservation of institutional repository content at the major U.K. universities. More specifically, our deep and ongoing commitment to developing and disseminating replicable, digital preservation strategies has resulted in the following list of accomplishments:

- **MetaArchive Cooperative (2004-present)**

We co-founded the MetaArchive Cooperative (http://www.metaarchive.org) with the libraries of Emory University, Auburn University, Florida State University, University of Louisville, and Virginia Tech. In 2004, the cooperative was awarded one of eight original digital preservation partnerships in the Library of Congress' National Digital Information and Infrastructure Preservation Program. The Cooperative has successfully implemented the MetaArchive Preservation Network, a distributed digital preservation network technology based on the LOCKSS (Lots of Copies Keep Stuff Safe) software and is the first LOCKSS Private Network (LPN) to be established.

- **Educopia Institute (2006-present)**

Georgia Tech's Principal Investigator in the MetaArchive Cooperative is a founding member of the Board of Directors and is Educopia's first Treasurer. The Educopia Institute, founded in 2006, is a non-profit entity dedicated to addressing issues of sustaining educational cyberinfrastructure advancement through projects and partnerships. It is serving as the parent organization for the MetaArchive Cooperative and will catalyze new digital sustainability efforts between Georgia Tech, Emory University, and other organizations. Initial funding is being provided by the Library of Congress' National Digital Information and Infrastructure Preservation Program.

- **National Science Foundation (NSF) digital preservation-related initiatives (2006)**

The Library is involved in the following digital preservation-related National Science Foundation initiatives.

   - One of the Library's associate directors is involved in the National Science Digital Library's (NSDL) Sustainability Committee, charged with exploring how to sustain NSDL collections economically, technologically, and through active user-ship as well as investigating how the NSDL will continue as an organization. It is contributing to activities to create a U.S. interagency task force on digital information sustainability as a strategy to realize NSDL's sustainability goals.
   - The NSF's Office of Cyberinfrastructure (OCI) invited a member of the Library's leadership to serve on an ad hoc group charged with contributing to the OCI's planning efforts to catalyze the development of a system of science and engineering data collections that is open, extensible and evolvable, and to support the development of a new generation of tools and services facilitating data acquisition, mining, integration, analysis, and visualization. Our representative participated in the planning meeting entitled "New Collaborative Relationships: The Role of Academic Libraries in the Digital Data Universe," led and coordinated by the ARL. The meeting resulted in the final report, *To Stand the Test of Time: Long-term Stewardship of Digital Data Sets in Science and Engineering* (http://www.arl.org/info/events/digdatarpt.pdf).

- **LOCKSS Alliance and related projects (2005-present)**

The Library is a founding member of the LOCKSS Alliance. This alliance was established to sustain and expand the development of the LOCKSS software for digital preservations. Related LOCKSS projects include:

- The Association of Southeastern Research Libraries electronic theses and dissertation preservation network, the 2nd LOCKSS Private Network of its kind in existence.
- The Networked Digital Library of Theses and Dissertations' international ETD preservation effort.
- The USGPO's government document preservation efforts.

Due to our leading efforts in digital preservation and repository building, we have had the esteemed opportunity to work in cooperation with innovative national and international organizations to address the usability of digital resources over time and across technologies.

V. Provide a dynamic staffing and management infrastructure to facilitate the emergence of value-added services; support professional development opportunities; enhance recruitment opportunities; facilitate needed enhancements via staff enthusiasm and commitment.

As evident in other areas of this document, we actively support and encourage professional development. We understand that having a well-informed, trained, and progressively changing body of talents helps to further our goals of service, collection building, preservation, and collaboration. Our dedication to the library profession and our staff is proven through Library support for the teaching of campus courses, creation of a library conference, workshops and staff training opportunities as well as the continual evaluation and improvement to the Library's recruitment and promotion processes.

The Library needed to find ways to engage in the retention efforts of the university.

Since 2001, Library staff has contributed to student retention efforts in response to a major campus focus by participating in the following programs.

- **GT 1000 program**

We dramatically increased our participation in the Georgia Tech Success Program's Freshmen Seminar course, GT 1000, since 2001. Library staff now instruct more sessions per year of this college "survival skills" class (a major campus initiative designed to increase retention rates) than any other external department on campus. Since 2005, one instructor/librarian has served on the Advisory Committee that directs curriculum changes, sets learning outcomes for participating students, and develops and implements training for all classroom facilitators/ instructors. We encourage and fully support this endeavor for MLS faculty and Master's level staff who unanimously agree that the experience is personally rewarding, a valuable way to serve the Institute, and a unique opportunity to gain insight into the lives of Georgia Tech undergraduates. As an additional component of this program, we provide an optional library skills/information literacy unit as an elective, guest lecturer session, and approximately one-third of the GT 1000 instructors select this alternative.

- **Freshmen Partners Program**

Expanding our commitment to undergraduate retention efforts, several librarians have also participated in the Freshmen Partners Program (2004 – 2005), a mentoring initiative designed to partner Georgia Tech faculty with groups of incoming freshmen. These partnerships have a major social component, as much

of the contact is during scheduled activities such as pizza parties, ice cream socials and recreational activities. However, it also provides an opportunity for freshmen to talk with and ask questions of faculty in informal, non-threatening settings.

Participation in GT 1000 and the Freshmen Partners Program has cultivated an enhanced sensitivity to the undergraduate experience in our public services division.

We needed to enhance the opportunities for professional development of both career staff and librarians.

The Information Services Department (ISD) regularly offers staff training workshops presented by subject specialists (both librarians and staff). These one-hour sessions on specific databases, print resources or subject areas are open to all staff and were developed as part of the ISD's 2003 Strategic Planning efforts. In 2003, ISD also instituted a competency-based system of training for new reference desk personnel and other Library staff interested in gaining customer service experience and information-seeking skills, in an effort to ensure consistent, exemplary service. Based on the Langevin Learning Services Model for training, components encompass Needs Analysis, Design/Development, Delivery, and Evaluation. Over 30 staff members have participated in all or part of this on-going, 14-session training program, and 15 of these staff members have served on the Information Services Desk.

The training has helped to quantify the level of service at the reference desk, and provides the opportunity for non-reference staff to enhance their skill set and enable them to interact with the Library's constituency.

We wanted to create an organizational culture that elicits individual creativity balanced with effective teamwork, commitment and ownership in our enterprise.

As the Library pursues its ambitious agenda, a new organizational culture is emerging. We are moving away from planning and directive from the top down and towards engaging staff at all levels to contribute to our work. Recommendations for change are consistently tested against the question, "How does this suggestion improve the academic welfare, support and success of students and faculty?" We focus on giving staff the necessary skills to succeed at their work. Many jobs have been re-engineered in the changing work environment to improve efficiencies in work flow and to facilitate the emphasis on a digital agenda. Significantly more funds are directed to staff training, technical certification and participation in conferences. Comprehensive salary reviews with market comparisons have resulted in significant salary increases throughout the organization, facilitated by strong support from University administration. This cultural shift improves the recruitment and retention of talented staff.

Staff is encouraged to offer insight and generate ideas for new and evolving services. Individuals from all levels of the organization are encouraged to participate in committees and working groups that previously relied on librarians. Creativity and risk-taking are endorsed to accelerate the flow of ideas and encourage experimentation. Individuals are given time and resources to develop and implement promising ideas. Some examples are:

   o   Our E-Resources Coordinator saw the need for a national library forum related to electronic resources and management. In 2005 she worked with a team of librarians from across the country to create the *Electronic Resources & Libraries Conference* held at Georgia Tech in March 2006. Lectures focused on e-resource management, licensing, access, technology, and organizational change. The conference was a phenomenal success and a second is scheduled for February 2007.

- o Our Web Applications Developer is nationally recognized for his ground-breaking work on link resolving.
- o A reference librarian is experimenting with marketing library services through social networking sites such as MySpace, Facebook, and student blogs and wikis to reach the millennial user of academic libraries.

We are now moving toward a culture that strives to meaningfully engage, value, and appropriately reward our staff.

Conclusion:

Through the years of providing services and resources to meet our mission, we found that we needed to incorporate the use of new technologies, internal and external collaborations, and student and faculty-focused initiatives to achieve successful outcomes. We use these successes as learning tools to foster continual improvement and change to better meet the needs of the scholarly community. We believe this evidence of our progress and continuing improvement represents a library of excellence.