User Research Project: Part 1

Research Report & Playbook

Georgia Institute of Technology brightspot

February 25, 2014

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executive summary

Objective

At a high level, the objective of the User Research Study is to understand the research, teaching, and learning needs of various user groups on campus and identify space and service opportunities to support those needs. In parallel, the project will inform the Library Renewal architectural design process and, with staff, design new staffing and service models for Library and Learning Excellence (L/LE).

Research Insights and "Playbook"

Library Design Input

Library Services Model

Process

The research study will be conducted in collaboration with the Library User Research Task Force and takes place in 2 parts. The first, which this document captures and took place between Nov - Dec 2013, explored the research, teaching, and learning experiences and needs on campus, and the role of the library on campus. It included interviews with faculty, postdocs, graduate students, and leadership across 23 schools in all 6 colleges; observations of study spaces on campus; and workshops with faculty, students, and L/LE staff.

The second part of the research study will include more breadth and depth of user engagement and research questions, quantitative research, designing the staffing and service model with L/LE staff, and informing the architectural design process of the Library.

The outcomes of the first part of the study include insights, a user experience model / "moments," goals, guiding principles and "plays."

Insights

- Boundaries between research, teaching, and learning are blurring.

- As people become more specialized, they are more likely to work in silos. Bringing them out requires effort.

- Mastering skills is just as important as mastering content.

- Physical and digital tools and spaces must work together seamlessly.

- There are many resources and library services that students & faculty are not aware of but could benefit from.

- Students should be able to apply their knowledge and skills across disciplines.

- While collaboration is an important part of research, teaching, and learning, there is still a need for quiet, individual work – and the environments to do it in.

User Experience Model

The user experience model describes 5 "moments," which can be thought of as goals that users are trying to achieve within their research, teaching, and learning experiences.

Discovering: Finding the right information, content, people, and tools.

Focusing: Filtering information and identifying what's next.

Growing: Mastering new skills and building relationships.

Creating: Expressing and applying ideas.

Showcasing: Testing and sharing with the community.

executive summary

Campus Playbook

The campus playbook contains a number of "plays," or concepts, which are opportunities for the campus to support the five "moments" and address the key goals listed below. Plays created so far are summarized on the following page.

As a playbook, campus plays can be applied where and when as needed, and exact mechanics are to be developed when a play is applied to a specific context. Which, and how, plays are part of the Library Renewal needs to be determined. The current playbook is not comprehensive and does not represent all ideas to be considered for the campus or Library; additional plays will be created in Phase 2.

Goals

The greatest opportunities for impact lay where institutional and user goals align. These include:

- **Whole Scholar**: Develop knowledge, skills, and interests across disciplines, so that scholars can apply what they know in a wider context and be prepared for the real-world.

- **Innovative Teaching & Learning Methods**: Apply innovative teaching and learning methods in informal and formal settings to continually improve learning experiences and outcomes.

- **Interdisciplinary Collaborations**: Form interdisciplinary and vertically-integrated teams to pursue new areas of work and impact.

- **Campus Communities:** Form communities of practice that capture the diverse interests on campus, where students, faculty, and staff can belong and actively participate.

- **Inspiration & Serendipity:** Inspire people to explore and do new things that excite them.

- **Innovation & Entrepreneurship:** Promote and support innovation and entrepreneurship and build relationships with external communities that enable projects to have impact.

Guiding Principles

When implementing "plays," consider the following:

- **Integrate in one place**: Create go-to places for related spaces, services, and resources.

- **Connect physical and digital:** Connect physical and digital "spaces," services, and resources, augmenting one with the other.

- **Enable flow**: Keep different types of spaces close to one another so that people can easily switch amongst activities.

- **Meet people where they are**: Put things close to where people already are, where they go, and what they do so that new things are likely to be used and become part of existing habits and routines.

- **Be agile**: Keep spaces flexible and adaptable to change.

- **Be "neutral"**: Create spaces that are not owned by one discipline; they are important for interdisciplinary work.

- **Make things visible**: Showcase services and resources.

- **Be a platform**: Help people learn and do things themselves.

- **Reach out to users:** Enable services to be proactive and personalized, e.g.: ask users to opt-in for notifications and recommendations.

executive summary

Play	Overview	discover	focus	grow	create	showcase	Goals addressed
Virtual browsing environments	Through interactive technologies and applications, virtual browsing environments will enable users to navigate, identify and use collections with ease, beyond what's possible with physical browsing and materials use.	●				●	Inspiration & serendipity
Themed communities	Through a competitive process every year, emerging communities of practice can "own" a neighborhood to focus on proposed projects, share resources, connect with experts, showcase their work, and increase membership in the community.		●	●	●	●	Whole scholar, interdisciplinary collaboration, campus communities, inspiration & serendipity
Innovation & entrepreneurship center	Located centrally to student activities, the innovation & entrepreneurship center includes spaces, services, resources, active programming, and programs to help students kick-start and develop new ideas.	●	●	●	●	●	Interdisciplinary collaboration, campus communities, inspiration & serendipity, innovation & entrepreneurship
Teaching & learning studio	The Teaching and Learning Studio provides spaces, technology, resources, and services dedicated to learning about, creating content for, and testing innovative teaching & learning methods.		●	●	●		Innovative teaching & learning methods, interdisciplinary collaboration, campus communities
Project rooms	With project rooms, teams can not only book a collaborative work area for an extended period of time, but also experts' time and equipment altogether.		●		●		Interdisciplinary collaboration
Pop-up showspaces	Pop-up showspaces highlight the activities that take place at Georgia Tech and provide opportunities for people to break out of their departments and buildings. As a mobile kit-of-parts, they're easy to pack up, move around, and customize.	●				●	Whole scholar, inspiration & serendipity
Research guides	Research guides help students, faculty, and staff tackle administrative tasks and guide them through standard processes and procedures so that they can focus on doing research.		●				Whole scholar
Peer-to-peer events	Encourage users to lead their own events by guiding them through the process and providing some structure to get them started.	●		●		●	Whole scholar, inspiration & serendipity
Loyalty program	A loyalty program at Georgia Tech incentivizes users to try new things and be active participants in the community. Completing tasks can grant long-term privileges and/or accrue points that can be redeemed for awards.	●		●			Whole scholar, campus communities, inspiration & serendipity
Quiet spaces	A mix of centralized and distributed quiet space where people can focus and be part of a scholarly atmosphere alongside others. The space may include special features / functions that encourage deep focus and/or serendipity.	●	●		●		Inspiration & serendipity
Conference center	Dedicated to faculty, students, and staff for hosting events on research, teaching, and learning. The Center provides services for the "before" and "after" of events as well – for example, presentation practice in the actual space and archival services for sharing materials online (e.g.: SMARTech).	●		●		●	Whole scholar, campus communities, inspiration & serendipity

executive summary

Library Vision Statement

Draft vision statement for the library as an organization:

Georgia Tech Library will define the technological research library of the 21st century.

We will enable people to explore the past and design the future by bringing together inspirational spaces, curated content, expert guidance, and scholarly communities.

Shifting Library Directions

The Library Renewal project is an opportunity to redefine the technological research library of the 21st century. Driving the renewal is the Library's partnership with Emory University – Georgia Tech will be moving its physical collections to the shared Library Service Center and have seamless access to Emory resources (and vice versa).
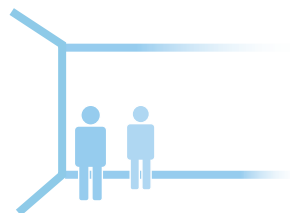
There were many ideas for the future library and the roles it could play in providing content, spaces, expertise, and tools & resources; helping users discover content; and building the community, including:

Spaces: Provide a variety of flexible spaces, such as for quiet study, meeting and collaboration, multimedia production, classes, and "playing"; Dedicate and showcase spaces for discipline-specific and /or pilot projects that are always changing; Create spaces for groups that don't have any on campus; Preserve the library as the place for serious, scholarly activity.

Services: Provide services through many channels, in a proactive and unobtrusive manner as well as on-demand; Provide more services and workshops; Organize collaborative initiatives to bring people together across disciplines; Collaborate with staff and students and be part of their teams.
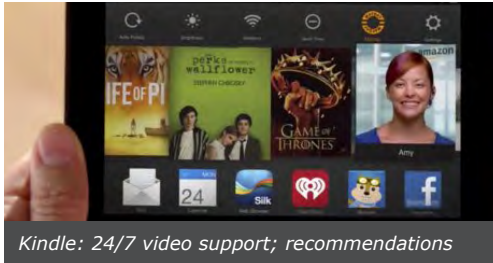
Content: Make resources, content, new scholarship, and activity visible; Showcase unique Library collections; Make recommendations; Continue to grow the collection, perhaps to include people (e.g.: "check out" expertise / experts' time).
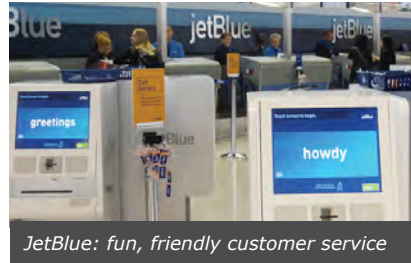
executive summary

Kindle: 24/7 video support; recommendations

JetBlue: fun, friendly customer service

Zoo Atlanta: engages all senses

Apple Store: branding, showroom

Strategies

In thinking about what to include in the Library and how:

- Consider the Library Towers and Clough Commons as one complex and complement what the Clough Commons offers

- Leverage the organizational culture of prototyping and experimenting to figure out what works best

- Create spaces that offer users something they can't replicate on their own; as an example example, concerts deliver experiences beyond the music / recording itself

- Make services and expertise more visible, and deliver and push content and services to where users are

- Distinguish between the Library as an institution vs. the building

- Make the Library more accessible to visitors

- Consider how the library will evolve over time, much like landscape grows and changes over time

- Collaborate with people and organizations across campus to build tools and create programming

- Stay flexible and on the leading edge, especially with technology

Library Storefront

A critical part of the library will be its storefronts in the physical and digital environments. The storefronts should engage users and communicate the Library's resources, services, and value to users.

- Be a one-stop shop with multiple channels of service

- Proactively uncover needs without being intrusive

- Orient visitors and point them to where they can go / what to do

- Be clearly branded and advertised, that refreshes how people view the library

- Be an open-access space, with no barriers to the storefront or library

- Be a place to try things out

- Include exhibitions that are interactive and promote discovery and serendipity

- Show what's available and popular in the library

- Integrate fun, whimsy, humor

- Be distributed, e.g.: pop-ups in colleges

project background

An overview of the project objectives, process, and activities.

◇   project background

◇   project process

project background

The Library's partnership with Emory University to open and share an off-site Library Service Center created an opportunity to renovate the Library Towers and in doing so respond to the changing research, teaching, and learning needs of the Georgia Tech community.

Through an ethnographic study of users and activities, from undergraduate learners to senior faculty and thought leaders, we aim to understand and identify opportunities to support the ideal research, teaching, and learning experiences on campus and create "plays" to be implemented strategically and/or opportunistically.

For the Library specifically, the research project will help define its vision, roles, and service model.

Research Insights and "Playbook"

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Library Services Model

project process

Overview

The research project consists of 2 parts and will be carried out in collaboration with the Library's User Research Task Force. Each phase includes groundwork to define the research questions and approach, understanding & visioning through user research and engagement, then analysis & recommendations.

The first part (Nov - Dec 2013) was a quick exploration into the following questions to inform and jumpstart the Library Renewal programming process:

- What are the current and ideal research, teaching, and learning experiences on campus?

- What's needed to support those experience?

- What role should the library play?

The second part (3-4 months) will refine the research questions, include more breadth (i.e.: more participants and user groups) and depth (i.e.: extended research into key users and/or topics), quantitative research methods, developing the service model of the new Library; and prototyping new concepts.

Part 1 Activities

The first part included:

- 25 interviews with faculty and postdocs & 13 interviews with graduate students

- ~14 hours of observations across Clough Commons, the Library, Student Center, Scheller College of Business, Architecture Library, and Octane Coffee

- A visioning retreat with Library & Learning Excellence staff

- 5 visioning workshops with leadership, faculty, graduate students, and L/LE staff

- Additional material was drawn from a Library Undergraduate Advisory Board meeting and departmental faculty and graduate focus groups conducted by subject librarians and CETL.

Interviews and focus groups included users from 23 schools / colleges:

- College of Architecture: Architecture, City & Regional Planning, Industrial Design, Music

- College of Computing: Computer Science, Interactive Computing

- College of Engineering: Chemical & Biomedical Engineering, Civil & Environmental Engineering, Electrical & Computer Engineering, Materials Science & Engineering, Mechanical Engineering

- College of Sciences: Applied Physiology, Biology, Chemistry & Biochemistry, Earth & Atmospheric Sciences, Mathematics, Physics

- Ernest Scheller Jr. College of Business

- Ivan Allen College of Liberal Arts: Economics; History, Technology, & Society; International Affairs; Literature, Media, & Communication; Public Policy

Georgia Tech experience

What is the research, teaching, and learning experience at the Institute level? Users spoke about the current state at Georgia Tech and how they see it evolving and changing as the Institute responds to external trends, the strategic plan, and users' goals and motivations.

◇   about Georgia Tech

◇   current and future research, teaching, and learning

◇   insights

◇   a look at campus
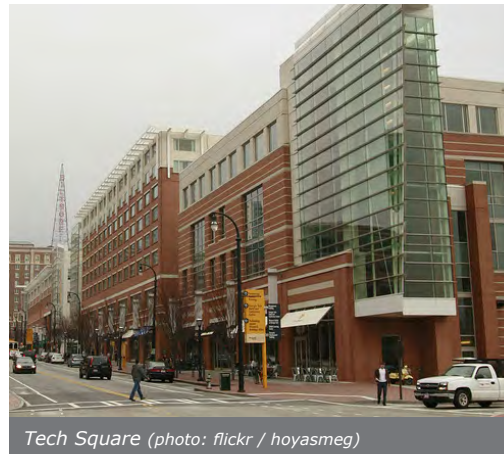
about georgia tech

Georgia Tech has grown quickly from being a trade school to a regionally recognized technological university to a globally recognized institution for the sciences, technology, and engineering. Its focus on applied research is reflected strongly in its academic and research programs, partnerships, campus life, and culture, and there is an entrepreneurial and innovative mindset at every level. People are not afraid to get their hands dirty and to prototype and test new ideas.

Outreach and service are also important at Georgia Tech. With initiatives such as Tech Square and partnerships with MidTown, the Institute engages with the local community and aspires to spearhead the revitalization and economic development of the surrounding area.

Moving further into the 21st century, the Strategic Plan calls upon the Institute's populations to become "leaders in influencing major technological, social, and policy decisions that address critical global challenges."

Founded: 1885 as the Georgia School of Technology and renamed in 1948 as the Georgia Institute of Technology

Academics: 6 colleges – Architecture, Computing, Engineering, Ivan Allen (Liberal Arts), Scheller (Business), and Sciences – 36 Bachelor's degrees, 62 Master's degrees, and 46 doctoral degrees

Student Body: ~14,500 undergraduate (14,000 FTE) and 7,000 graduate (6,150 FTE) students

Faculty: ~ 1,000 instruction (90% tenure or tenure-track), 350 post-doc, and 1,200 research professional faculty

Non-Faculty: ~ 420 instruction and 270 research non-faculty

Research: 3,187 research awards granted in 2013 totaling ~$621,600,000

Carnegie Classification: research profile RU/VH (very high research activity), size and setting L4/HR (large 4-year, highly residential), undergraduate profile FT4/MS/LTI (full-time 4-year, more selective, lower transfer-in), undergraduate instructional program Prof+A&S/HGC (professions plus arts & science, high graduate coexistence), graduate instructional program CompDoc/NMedVet (comprehensive doctoral [no medical/veterinary])

Biotechnology Complex (photo: Gary Meek)

Tech Square (photo: flickr / hoyasmeg)

current & future research, teaching, and learning experiences

Reflecting on trends in teaching methods and pedagogy, research tools and practices, and service models, faculty, graduate students, and campus leadership discussed the current state of research, teaching, and learning at Georgia Tech and how they envision them evolving. In some cases, future directions replace the current whereas in others it's additive.

external trends

Shifts in how people are teaching, learning, and using technology.

IBM – "In five years, the classroom will learn you."

Data-Rich & Personalized

Businesses have long been mining and using "big data" to uncover novel patterns and insights about their consumers. Now, educational institutions are using "learning analytics" to personalize learning experiences for students (Open Education Database).

Fayetteville Public Library – first fab lab in a public library

Creator Culture

The trend towards creation and maker culture continues, with user-generated content and self-published products increasing in past years. Higher education is in a position to prepare students for the "creator society" and curricula have already begun to highlight media creation, design, and entrepreneurship (New Media Consortium).

Challenge.gov – partner with government to solve challenges

Problem Solving-Focused

Today's students need to develop skills in self-evaluation and research, so that they can "assess what they need to learn in order to solve a problem" then tackle it. In the "classroom," this often happens through flipped courses and project-based learning with real-world clients or scenarios (Association for Supervision and Curriculum Development).

LinkedIn Maps

Distributed

Technology has enabled people to connect to others and to information around the world, at any time. With such breadth, the challenge now is to manage and navigate those networks and connect to the right things, while they continually expand.

current & future: **research**

There are many directions and emerging areas of research at Georgia Tech, giving rise to opportunities for interdisciplinary collaborations across and off-campus.

> Current State

- Research remains largely a solitary pursuit. Researchers are creating more interdisciplinary and/or vertically-integrated teams, though finding the right connections at the right time can be a challenge.

- Institutional programs are facilitating collaboration, e.g.: interdisciplinary research institutes (IRIs) which bring together researchers under 10 research areas, and the vertically-integrated projects (VIP) program to encourage undergraduate participation.

- Research is becoming more data-intensive.

- Research can be a competitive environment. There is a high "administrative overhead" and complexity is increasing.

- Undergraduates are becoming more involved in research, giving them real-world, hands-on experience.

>> Future Expectations

- People emerge from silos across campus to contribute to interdisciplinary, vertically-integrated project teams. Ideally, collaboration comes about organically.

- Research is networked: technology has made it possible to share data and information efficiently, and to work with others in real-time wherever they are. In the future, there may be virtual "labs" where researchers can work together online.

- As collaboration increases and research becomes more sophisticated, there needs to be seamless transitions amongst tools. Digital and physical tools need to work together.

- Research leads to breakthroughs and new territories.

- Administrative tasks do not distract from research.

Data-intensive – immersive viz, NCSU Hunt Library

Distributed & collaborative – Microsoft

Interdisciplinary – IRI, Georgia Tech

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current & future: **teaching**

Faculty are changing the way they interact with students, placing more emphasis on problem-based learning to prepare them for the real-world.

> ## Current State

- Many courses are lecture-style (e.g.: large, introductory classes).

- There is increasing interest in problem-based and active learning (e.g.: "studios" and "labs" vs. lectures), though existing spaces do not support these new methods of teaching and learning well.

- For those who are trying to do something new and different, the results / impact are unknown and need to be measured.

- Instructors can be distant from their learners (e.g.: "sage on a stage").

- Designing courses and content is a solo pursuit that happens "behind closed doors."

- For graduate students, teaching can be a chaotic process. While some embrace teaching, others see it as something to "get through."

>> ## Future Expectations

- Instructors can build on collective knowledge to develop new ways of teaching and learning (process and content), rather than pursue them independently.

- Teaching and learning become learner-directed, facilitated by instructors instead of led.

- Teaching enables learners to grow in unexpected places.

- Courses incorporates more creative thinking and "making."

Faculty Commons – Ohio University Alden Library

Creative thinking and making – Stanford d.school

Active learning classroom – U of Minnesota

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current & future: **learning**

Initiatives at the Institute and course levels aim to provide students with more choices and breadth in how they learn (e.g.: which courses, what topics, what deliverables), so that they can direct their own learning experiences.

> Current State

- Undergraduates are focused on maintaining high grades and there are few incentives to take risks. GPA-based scholarships are important for many students at Georgia Tech.

- Inspiration and exposure to others' research is important for overall learning development – being better researchers, designers, problem-solvers.

- Staff are instrumental in helping people do new things, e.g.: orienting undergraduates to research processes, identifying non-traditional resources, supporting and advising on new teaching strategies.

>> Future Expectations

- The learning process is directed by learner, supported by feedback and touchpoints with instructors along-the-way.

- Classes actively engage and challenge students in a variety of ways, e.g.: frame their own projects, present what they learned through a web site instead of a group paper.

- Students apply their learning to real-world problems.

- Students are excited to learn, inspired, and apply what they learn to other disciplines.
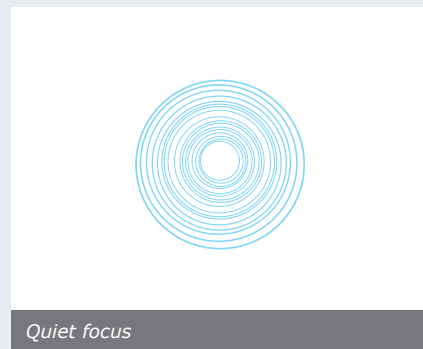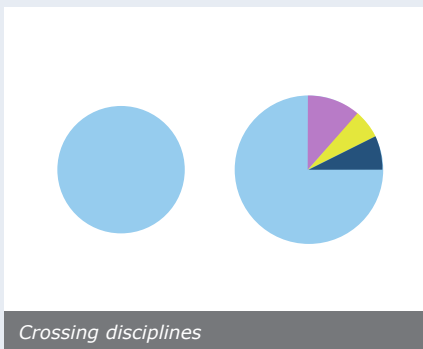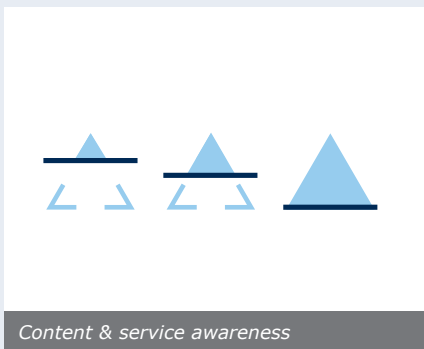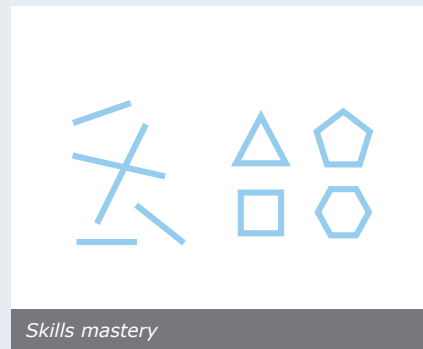
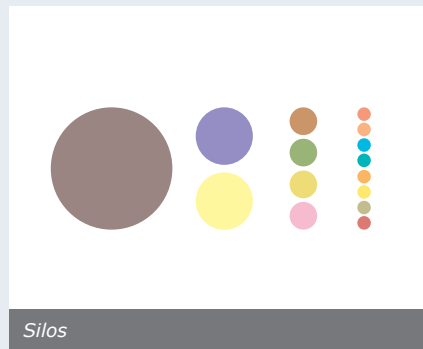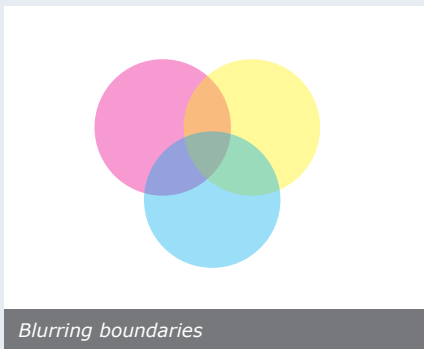*Project-based learning – CUSD*

Multimedia – Seattle University Library

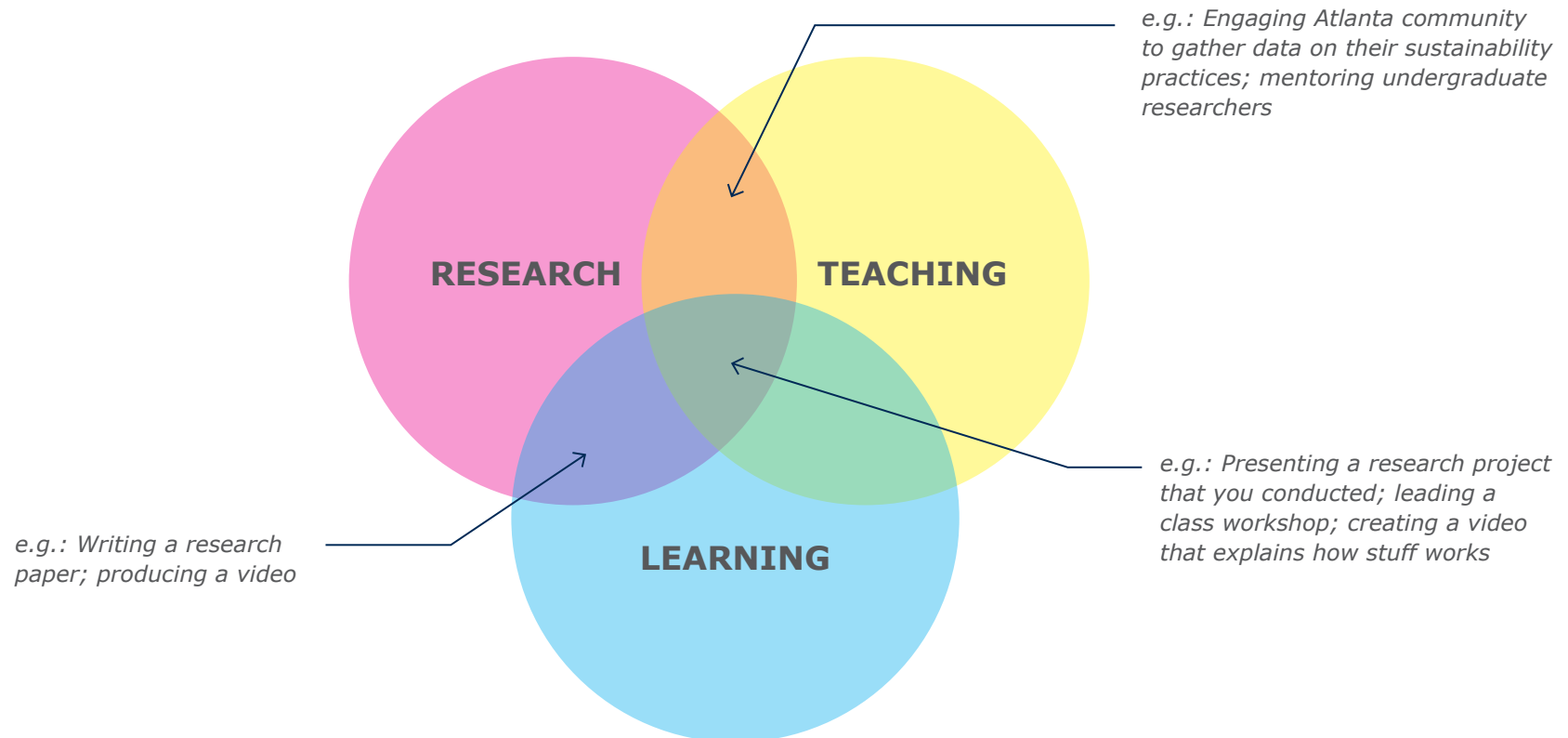*Mobile and online – MIT Open CourseWare*

insights

Across conversations, there were six big ideas – in essence, drivers behind what's happening at the Institute and important areas to address that will impact all people at Georgia Tech.

Blurring boundaries

Silos

Skills mastery

Supporting physical & digital

Content & service awareness

Crossing disciplines

Quiet focus

insights: **blurring boundaries**

**Boundaries between research, teaching, and learning are blurring.**

Though we speak about research, teaching, and learning as distinct activities, boundaries among them are blurring. Interviewees spoke of research as a way to learn, and learning as part of the teaching process. In fact, some participants envisioned no boundaries amongst these practices in the future, as succeeding in one means incorporating elements of the others.

e.g.: Engaging Atlanta community to gather data on their sustainability practices; mentoring undergraduate researchers

e.g.: Presenting a research project that you conducted; leading a class workshop; creating a video that explains how stuff works

e.g.: Writing a research paper; producing a video

RESEARCH

TEACHING

LEARNING

insights: **silos**

As people become more specialized, they are more likely to work in silos. Bringing them out requires effort.

As people advance in their studies and become more specialized, they naturally slide into silos and become members of those communities. Collaborating across disciplines requires more effort. Physical space can also reinforce silos – buildings that are self-contained and encourage interaction within (though positive in their own regards) may give residents few reasons to leave, and distance from other desirable spaces may discourage mixing across buildings.

| e.g.: College | Major | Stream | Research area | Specialization |
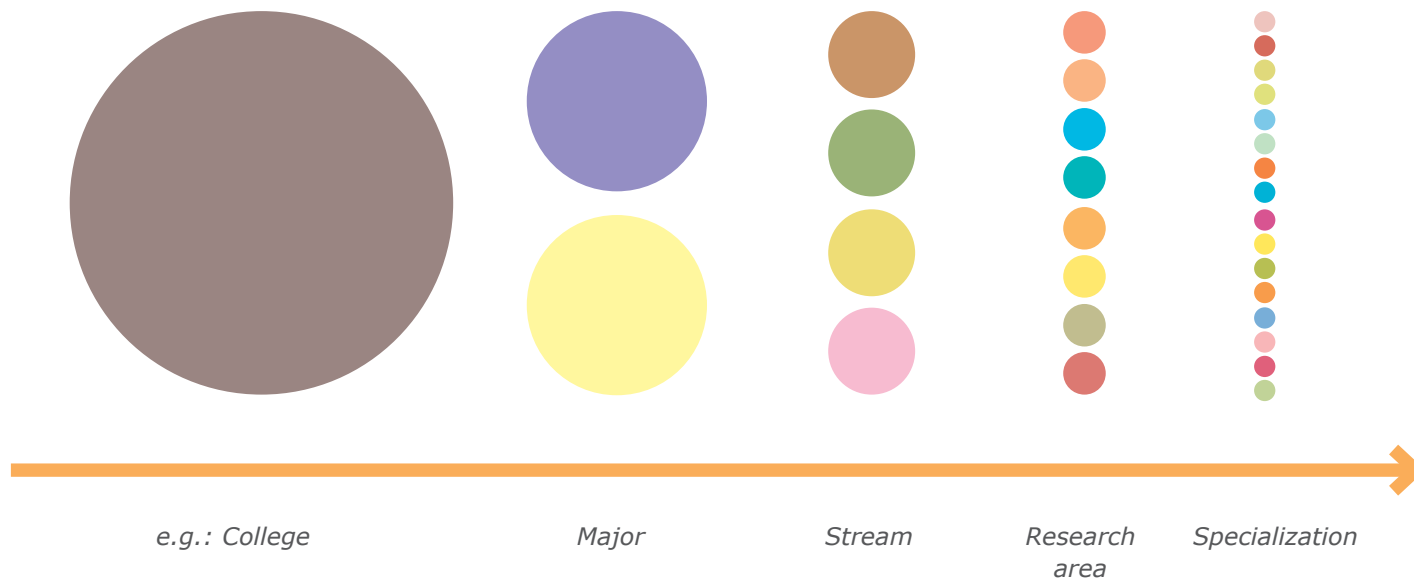
insights: **skills mastery**

Mastering skills is just as important as mastering content.

New ways of teaching and learning often call upon users to present content through multimedia, such as videos, data visualizations, posters, and web sites. Now, everyone needs to know the basics of a wider base of hardware and software in order to communicate effectively and creatively, and be job-ready.

Content

e.g.: research paper

e.g.: infographic

e.g.: video segment

e.g.: web site
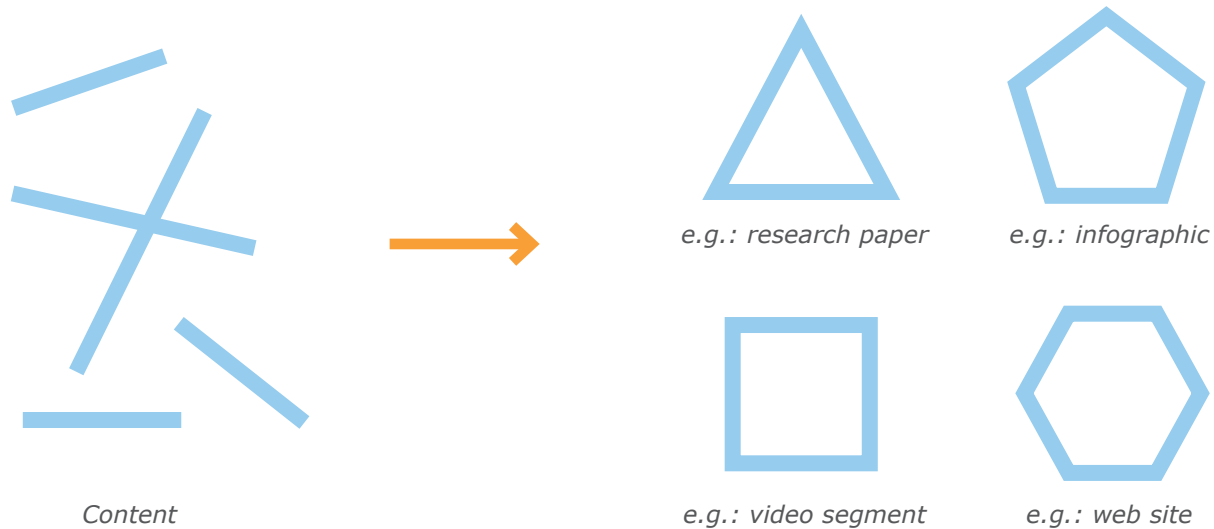
insights: **supporting physical & digital**

**Physical and digital tools and spaces must work together seamlessly.**

Across many activities, people are using both physical and digital devices. Just as digital devices must connect with one another seamlessly, physical and digital devices must work together as well. And as people continue to use both physical and digital tools, their "footprints" are also increasing. For example, a student studying for an exam might spread out notes, textbooks, a laptop, and multiple mobile devices. Digital devices have not reduced the amount of space we need, only added to what we need to find a place for.

insights: **content & service awareness**

There are many resources and library services that students & faculty are not aware of but could benefit from.

Anecdotes indicate that many students and faculty are not aware of the collections and services that the Library has to offer. Of those who do use the collections and services, some scratch the surface of what's available, others dig deeper to find what they need, and a handful are "superusers" who go off the menu and work with librarians extensively to get and do what they need. As the physical collections move to the Library Service Center, it will be particularly important to make the collections visible (including those that are born-digital) and to showcase the expertise and services of Library staff.
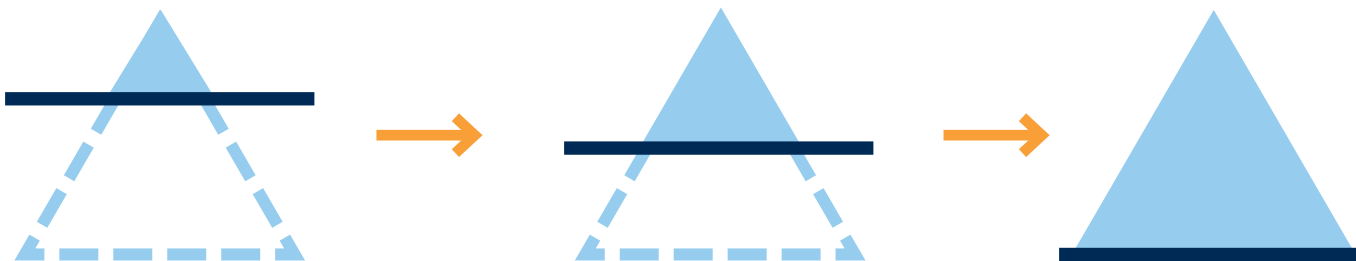
insights: **crossing disciplines**

Students should be able to apply their knowledge and skills across disciplines.

Students often cannot avail themselves of the opportunities to explore other fields – for example, for science and engineering students to pursue social sciences and arts programs (and vice versa). Having a balance—being exposed to new topics and thinking across disciplines—is an important part of the learning experience and for molding graduates who are ready to tackle challenges in the real-world.
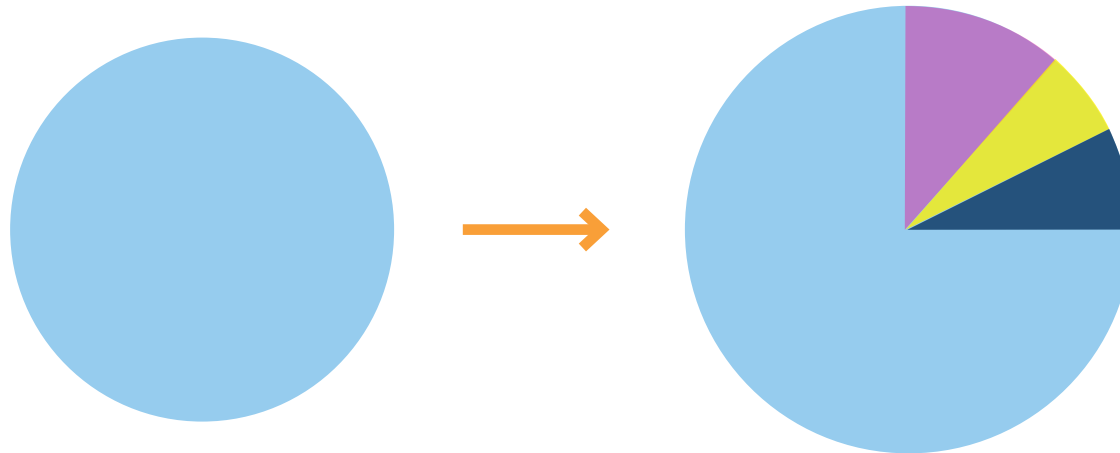
insights: **quiet focus**

While collaboration is an important and growing part of research, teaching, and learning, there is still a need for quiet, individual work – and the environments to do it in.

As we create environments to support collaboration and cross-disciplinary work, we must also retain and create environments for quiet, focused individual work, where users can "get away," concentrate, reflect, and recharge. Not only do such spaces inspire scholarly activity, but they are also integral in supporting the range of user preferences, personalities, and learning styles at Georgia Tech.
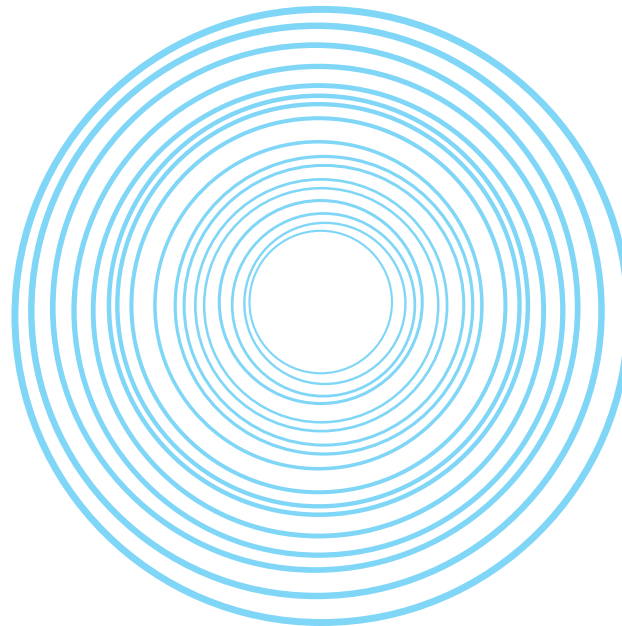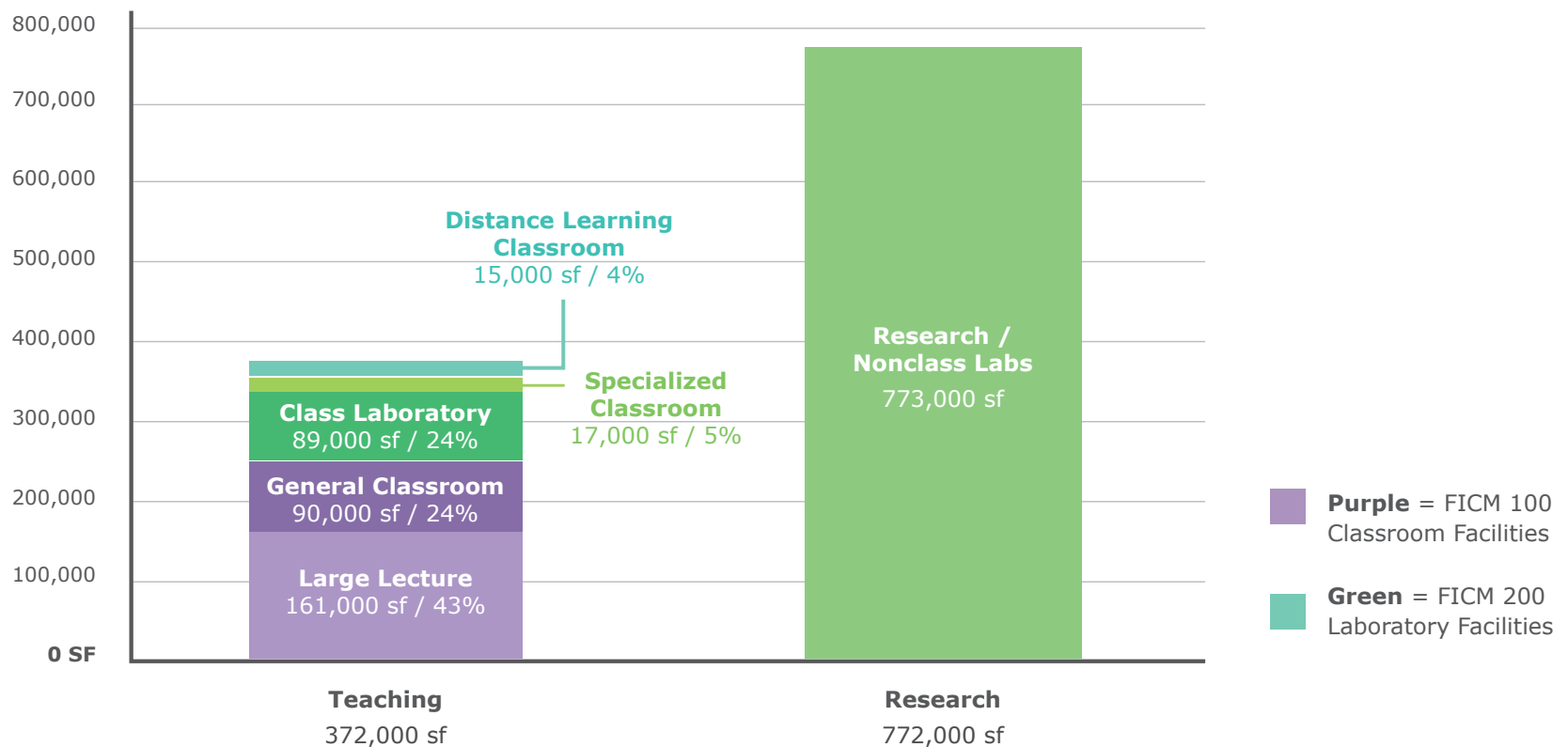
a look at campus

What spaces are available on campus for research, teaching, and learning?

Data is collected from publicly available Capital Planning & Space Management datasets, at http://space.gatech.edu/spaceaccounting

a look at campus: **labs & classrooms**

For formal / scheduled classes and research on the main campus, there is ~372,000 sf of classroom and lecture space and ~772,000 sf of research (non-classroom) lab space; both exclude service areas (e.g.: storage, equipment rooms, preparation rooms).

Distance Learning Classroom
15,000 sf / 4%

Specialized Classroom
17,000 sf / 5%

Class Laboratory
89,000 sf / 24%

General Classroom
90,000 sf / 24%

Large Lecture
161,000 sf / 43%

Research / Nonclass Labs
773,000 sf

Teaching
372,000 sf

Research
772,000 sf

Purple = FICM 100 Classroom Facilities

Green = FICM 200 Laboratory Facilities

a look at campus: **study facilities**

The majority of study facilities (FICM code 400) on campus are in the Library Towers, Clough Undergraduate Commons, Architecture Library, College of Business, and Klaus Computing Building. Study facilities are not restricted to a particular discipline or unit and include study spaces, stack spaces, open-stack study rooms, processing rooms, and study service areas. Detailed analysis is needed to pull out spaces that are not for study (i.e.: stacks, service and processing areas).
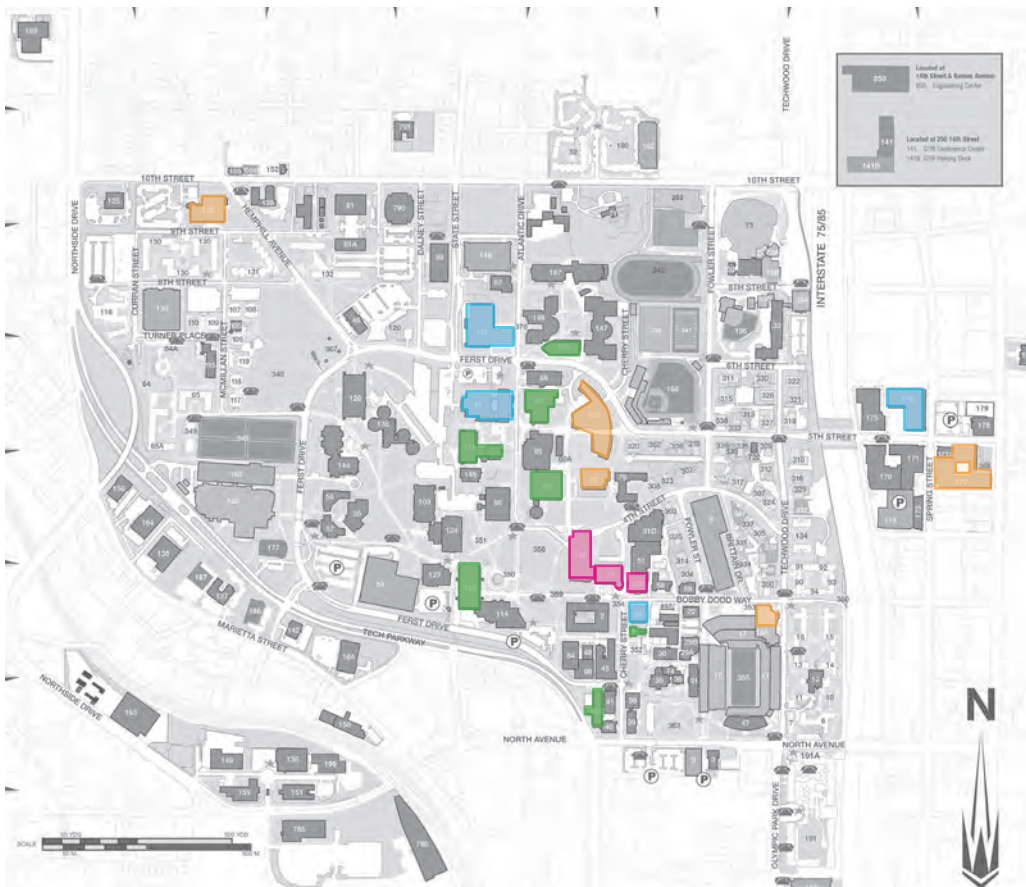
Study Area

- ☐ < 1000 sf
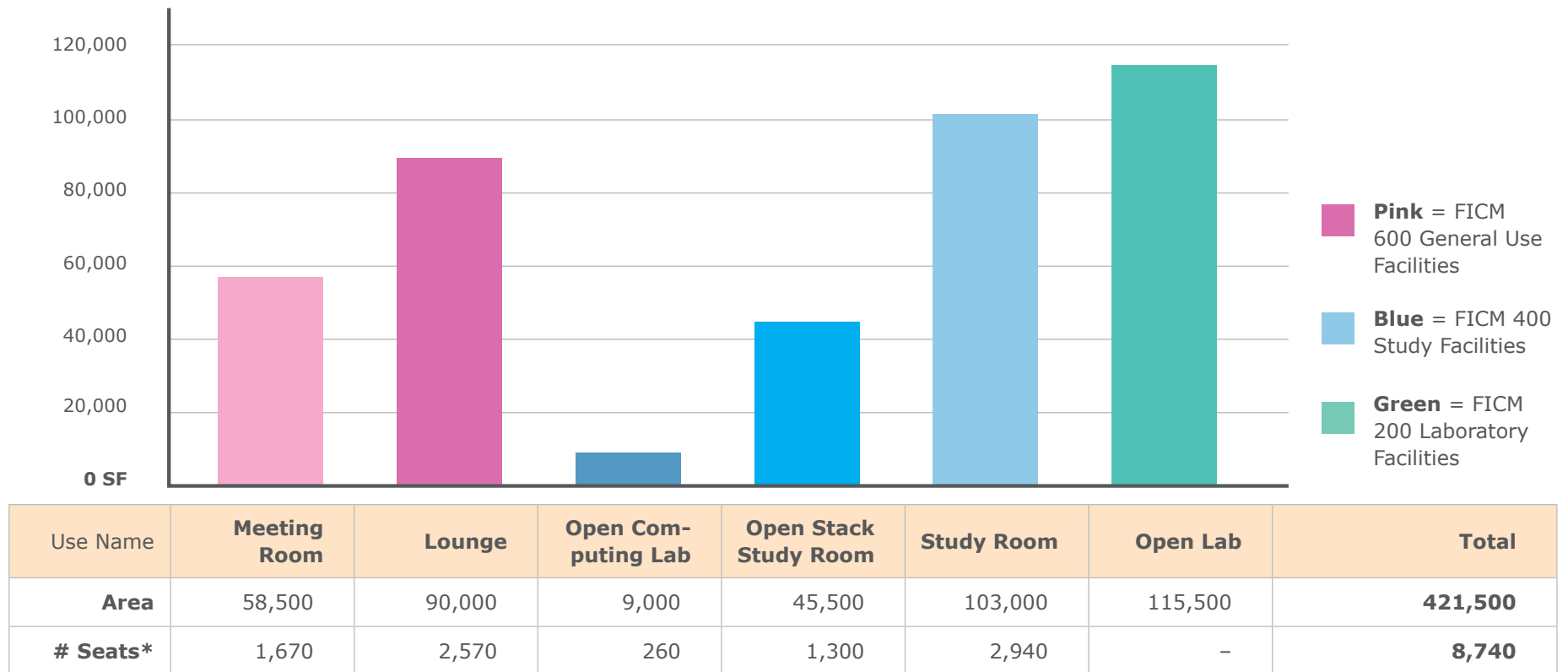- ☐ 1000 - 2,999 sf
- ☐ 3,000 - 5,999 sf
- ☐ 6000+ sf

Bldg	Building Name*	Area (sf)
24	Smith	335
176	Centergy One	612
181	Marcus Nanotechnology	656
81	Howey	782
85	Van Leer	1,184
104	Student Center	1,235
25	OMED (Chapin Bldg)	1,277
165	Whitaker	1,303
101	Knight	1,426
111	Mason	1,748
50	Computing (COC)	1,787
153	Klaus	3,184
129	Inst. for Paper Sci & Tech	3,552
18	Athletic Center	3,923
172	College of Business	5,710
75	Architecture (West)	5,741
166	Clough Commons	25,933
77, 100	Library Towers	119,700^
	Total	**180,323**

*Does not include residence halls (~33,400 sf distributed across ~30 buildings) or buildings with < 100 sf study space (2 total).

^Currently includes ~70,000 sf stacks.

a look at campus: **study / work spaces**

Taking a closer look at study facilities and other possible study / work spaces on campus, such as lounge and meeting rooms within the General Use category and open laboratories within Laboratory Facilities, there is ~ 421,000 sf of space (or, 8,740 seats) where students can work at any time. Open labs may serve particular disciplines though are for open, informal instruction and work; open labs include such spaces as music practice rooms, computer labs with specialized software, or language labs.

Pink = FICM 600 General Use Facilities

Blue = FICM 400 Study Facilities

Green = FICM 200 Laboratory Facilities

Use Name	Meeting Room	Lounge	Open Computing Lab	Open Stack Study Room	Study Room	Open Lab	Total
Area	58,500	90,000	9,000	45,500	103,000	115,500	**421,500**
# Seats*	1,670	2,570	260	1,300	2,940	–	**8,740**

*The Council of Education Facilities Planners International (CEFPI; 2006) recommends user seating at 35 sf / seat. Seats were not estimated for "open lab" as such specialized spaces often have different standards.

user experience

What is the research, teaching, and learning experience at the user level? In speaking to undergraduates, graduate students, faculty, and staff, we distilled five key "moments" that make up great research, teaching, and learning experiences and that we should support. To make each "moment" concrete, we have presented example experiences, users' current experiences in pursuing each moment, and what they hope to do in the future.

◇   users

◇   "moments"

users

In our first phase of research, we categorized participants as either an undergraduate student, graduate student (masters, PhD, postdoc), faculty, or staff member.

Undergraduates   **Graduates**   **Faculty**   **Staff**

users: **goals & motivations**

Through interviews and workshops, users described their goals and motivations. At a high level, this is what we heard:

Undergraduates

- Earn high marks in class

- Graduate with real-world experience and job skills

- Prototype and implement their ideas

- Become innovators, entrepreneurs, and leaders

Graduates

- Publish papers in high-impact journals

- Finish and defend their dissertations

- Secure tenure-track positions in academia

- Impact and help others through their work

- Continue with hands-on research after graduation

- Be effective learners, educators, and researchers

users: **goals & motivations**

Through interviews and workshops, users described their goals and motivations. At a high level, this is what we heard:

Faculty

• Empower students to succeed, inspire them, and give them opportunities to build their skills, knowledge, confidence, and creativity

• Truly collaborate across disciplines on- and off-campus

• Lead change at Georgia Tech that enables students to pursue what interests them and prepares them for the next step

• Create an impact through their work

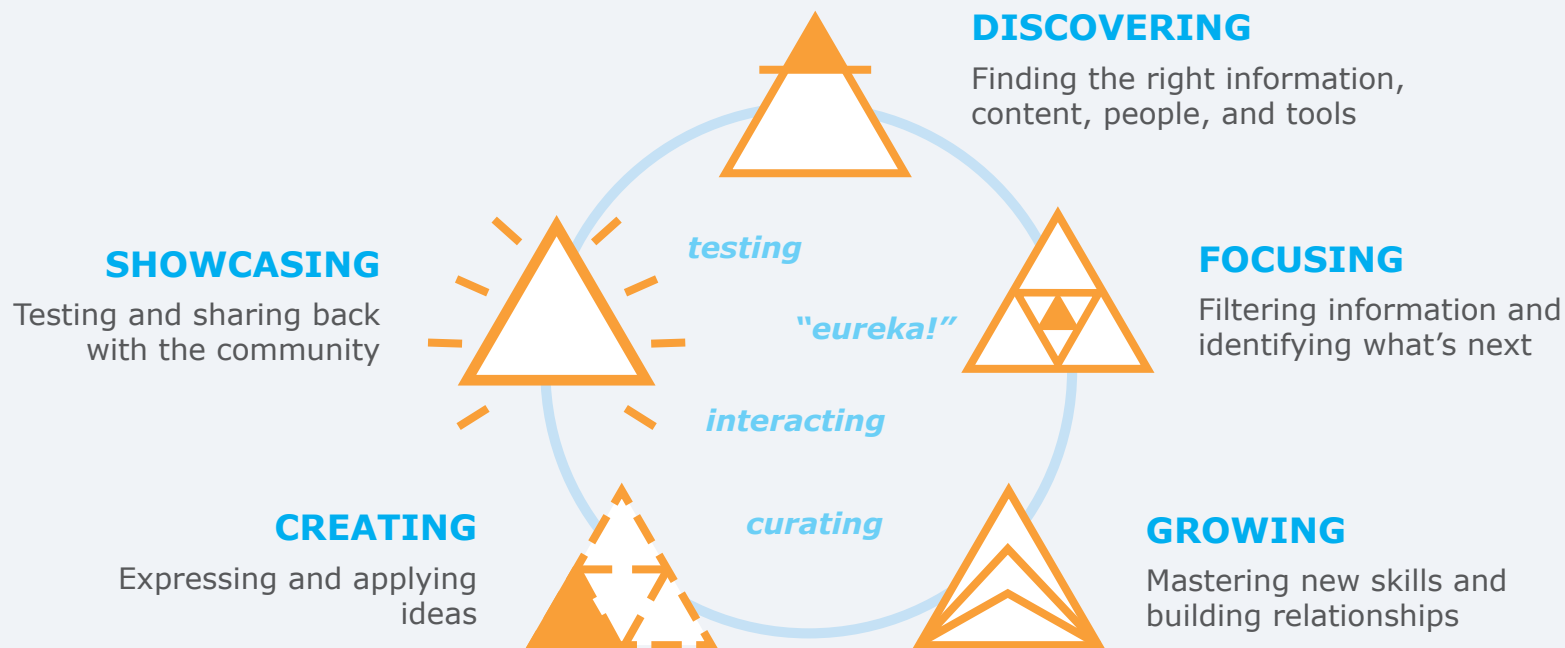• Continuously finding new areas for research and impact

Staff

• Secure resources and funding to make ideas possible

• Get the information and resources that others need in front of them

• Support evolving ways to teach, learn, and do research by continually building their skills

• Work with users toward a common goal

moments

Users told stories about their day-to-day work and what helps them be successful. From this, we distilled 5 key "moments" that make up great research, teaching, and learning experiences. To help people at Georgia Tech excel, we need to support these five moments. In addition to the key moments, there are activities that can happen throughout as part of any moment, such as interacting with others, curating information, testing ideas, and having that "eureka!" moment.

DISCOVERING
Finding the right information, content, people, and tools

FOCUSING
Filtering information and identifying what's next

GROWING
Mastering new skills and building relationships

CREATING
Expressing and applying ideas

SHOWCASING
Testing and sharing back with the community

testing

*"eureka!"*

interacting

curating

moments

Since research, teaching, and learning are blurring, we thought about how people work in terms of *projects*. Within a project, moments generally occur in a cycle though there are certainly loops that occur within. Below are examples of how users might move amongst moments, and the following pages present "experience maps" as examples of how moments might play out in projects.

discovering

focusing

showcasing

creating

growing
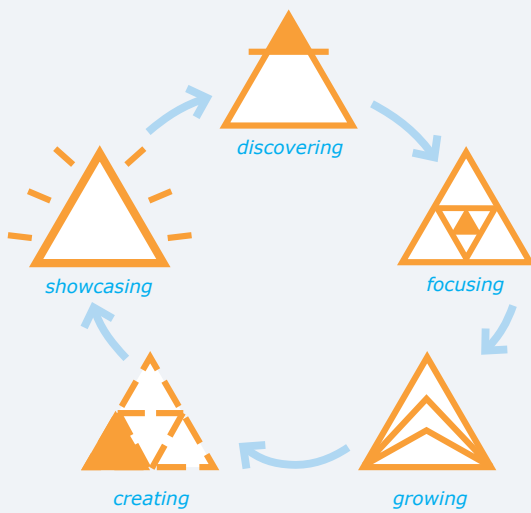
Scenario: *Focusing and building skills in order to create, then showcasing, which prompts discovery for others.*

discovering

focusing

showcasing

creating

growing
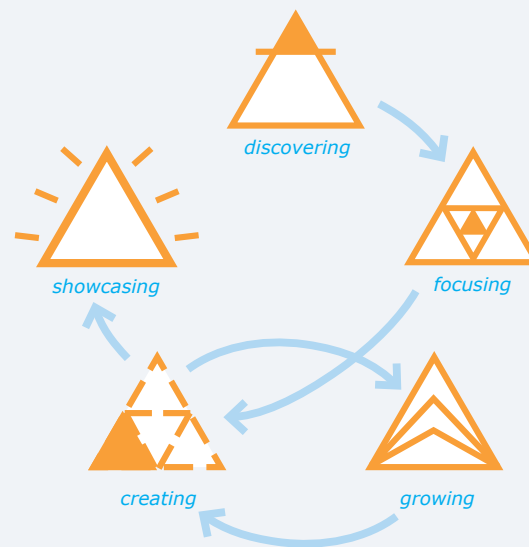
Scenario: *Moving straight from focusing to creating, and in doing so identifying areas for growth.*

discovering

focusing

showcasing

creating

growing
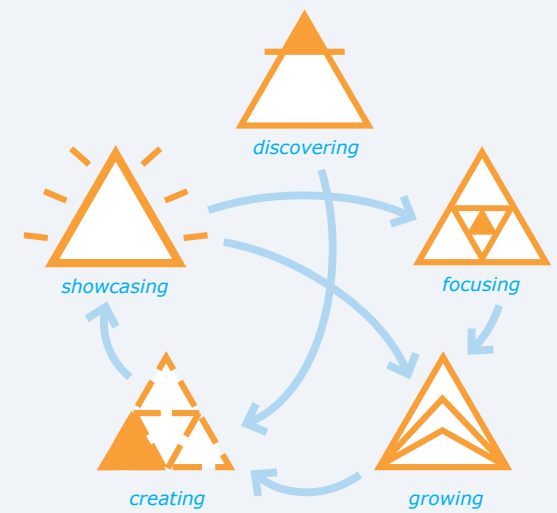
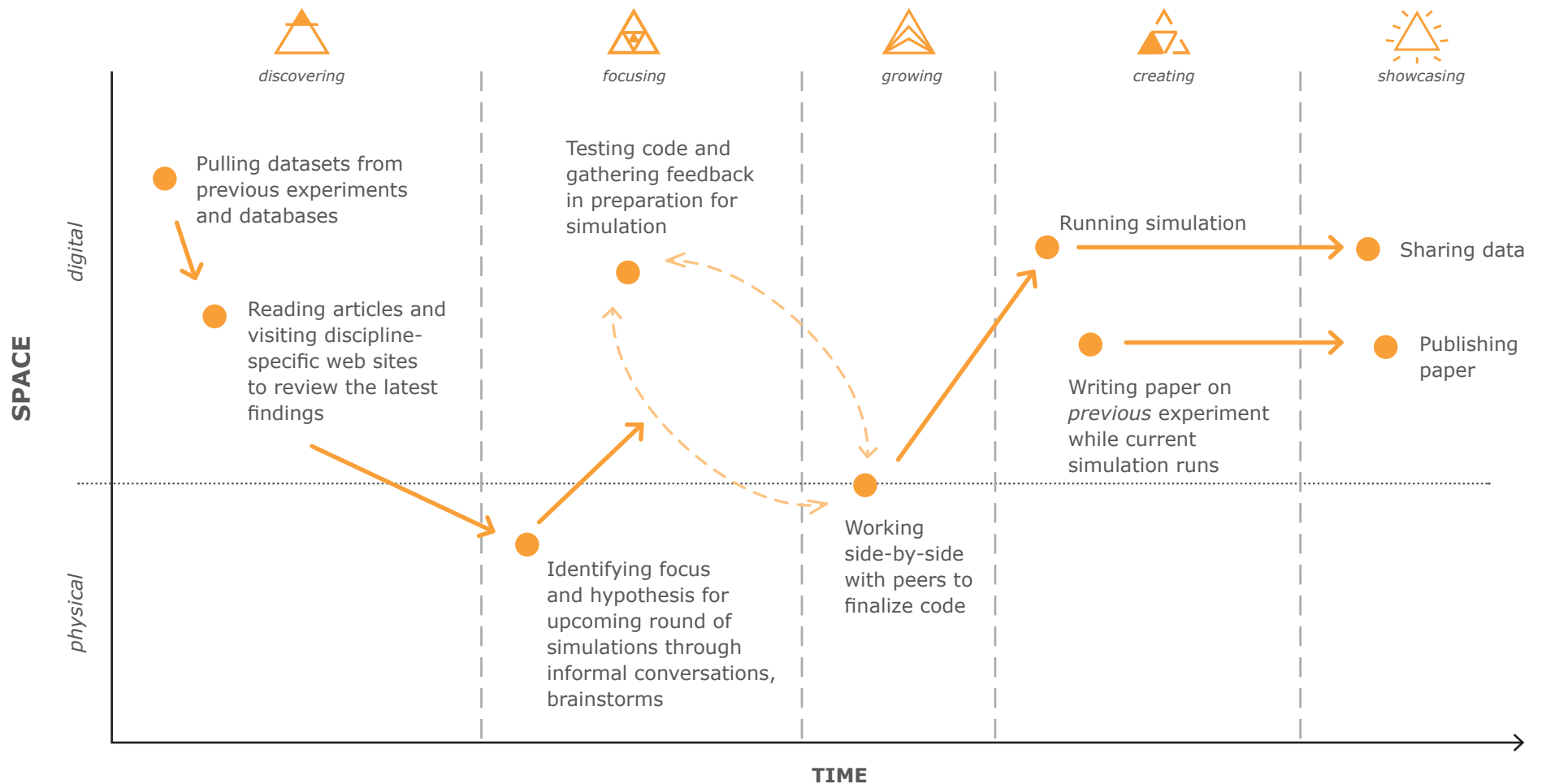**Scenario:** *Iterating and improving ideas by showcasing them and getting feedback.*

moments: **experience map**

As an example of how "moments" play out, here is a current experience map of:
A faculty member flipping a classroom
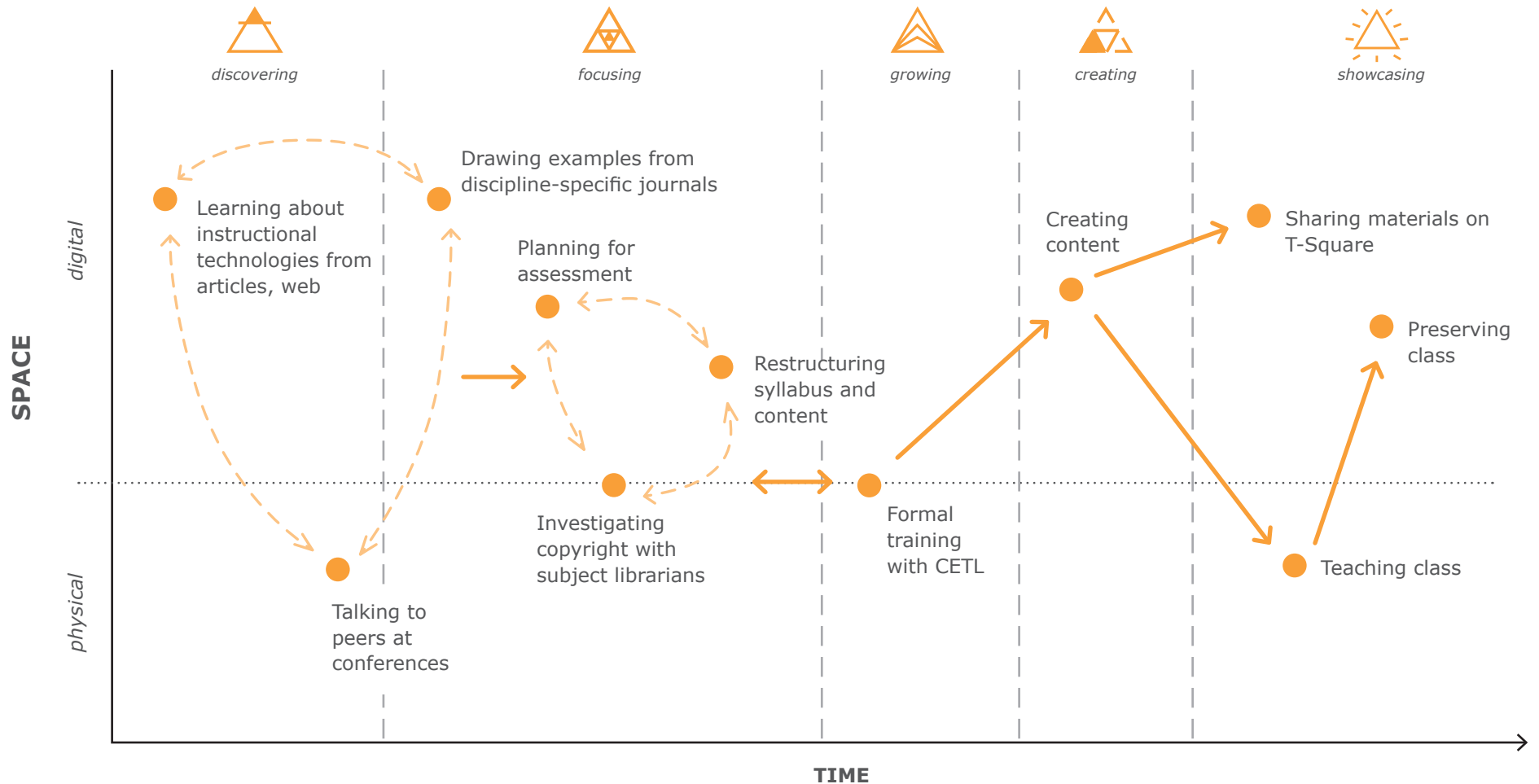
SPACE / TIME

discovering — *focusing* — *growing* — *creating* — *showcasing*

digital / physical

- Learning about instructional technologies from articles, web
- Drawing examples from discipline-specific journals
- Planning for assessment
- Restructuring syllabus and content
- Creating content
- Sharing materials on T-Square
- Preserving class
- Talking to peers at conferences
- Investigating copyright with subject librarians
- Formal training with CETL
- Teaching class

*Note: These experience maps were created by L/LE staff and brightspot and is one representation of how the experience or activity may be approached.

moments: **experience map**

As an example of how "moments" play out, here is a current experience map of:
A graduate student participating in a research group

discovering   *focusing*   *growing*   *creating*   *showcasing*

SPACE (*digital* / *physical*)

Pulling datasets from previous experiments and databases

Reading articles and visiting discipline-specific web sites to review the latest findings

Testing code and gathering feedback in preparation for simulation

Identifying focus and hypothesis for upcoming round of simulations through informal conversations, brainstorms

Working side-by-side with peers to finalize code

Running simulation

Writing paper on *previous* experiment while current simulation runs

Sharing data

Publishing paper

TIME

Note: These experience maps were created by L/LE staff and brightspot and is one representation of how the experience or activity may be approached.

moments: **experience map**

As an example of how "moments" play out, here is a current experience map of:
A group of undergraduate students writing a final paper together
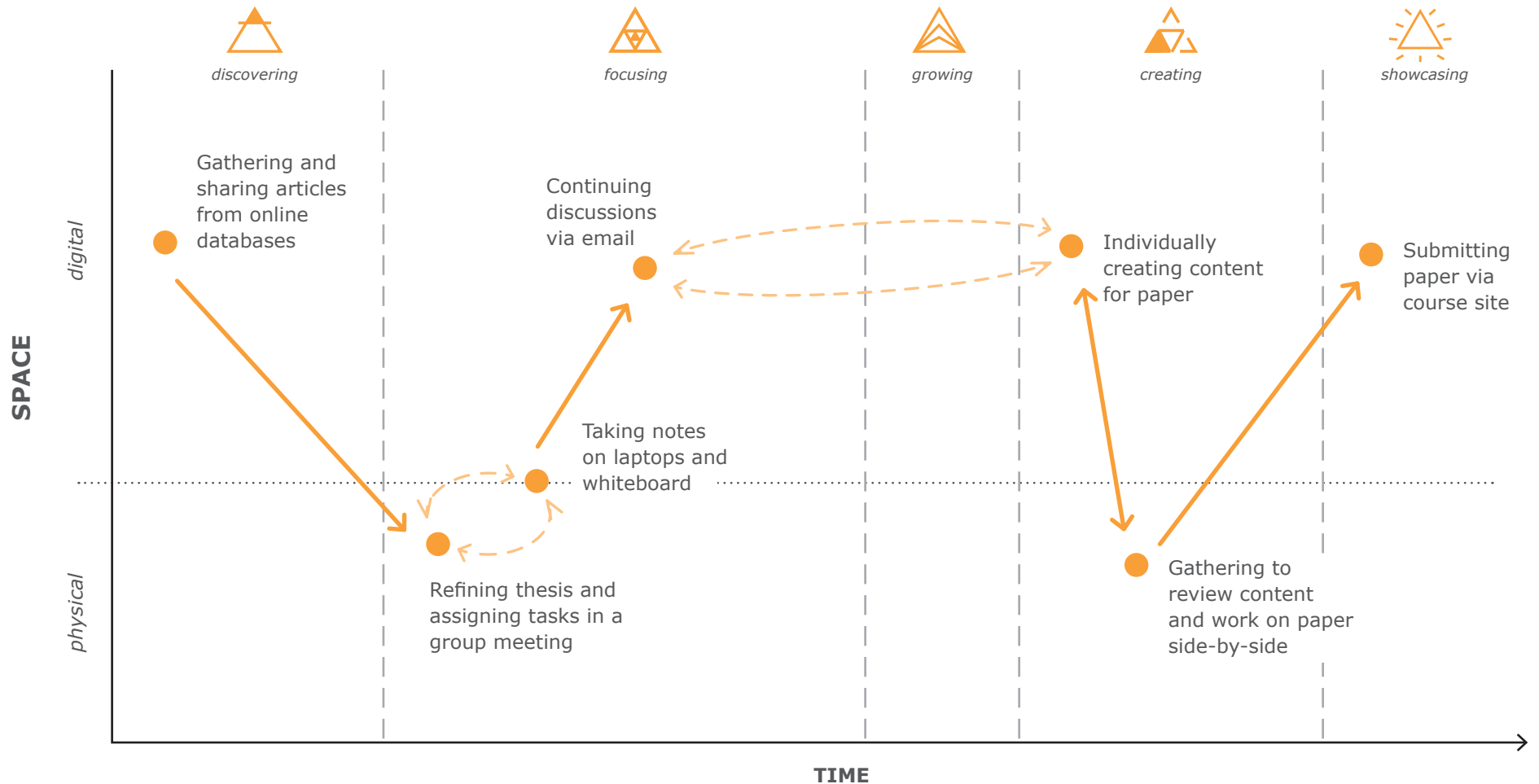
*Note: These experience maps were created by L/LE staff and brightspot and is one representation of how the experience or activity may be approached.

discovering

Finding the right information, content, people, and tools.

Having the right information, content, people, and tools for a project is instrumental to its success. With a seemingly limitless network of possibilities to explore, people need to strategically navigate and identify what they need. At the same time, surprises and serendipitous discoveries can lead to new ideas and opportunities.

Goals

- Retrieve resources independently and quickly

- Find something unexpected that inspires new ideas and directions for work

- Break out of their silos; interact with people that they would never encounter in their day-to-day routines

- Help others find and use information, and develop appreciation for materials (e.g.: Special Collections)

How people "discover"

- Search via Library web site and Google Scholar

- Browse Library stacks and catalogue; serendipity tends to occur when browsing stacks or flipping through journals

- Read core reference collections

- Work with librarians to identify and retrieve resources

- Get guidance from listservs, social networks, external experts

- Attending and networking at lunches, events, conferences

- Through automatic updates / emails

Temple University media collection

Betahaus

discovering

Finding the right information, content, people, and tools.

Clemson Social Media Listening Center

Google Stockholm Virtual Map

Loyala Student Services Hub

University of Sao Paolo

Wants and expectations

- Access to collections globally; all resources searchable and easy to download

- E-browsing experience analogous to physical browsing; better user interfaces

- Fewer points of entry – e.g.: one search can reach all resources

- Experts who can help navigate, filter, and evaluate content

- New ways to digitally navigate, interpret, and manage information, sources, and data – e.g.: a timeline that tracks the evolution of an idea through seminal papers and citations

- Real-time information feeds & displays

- Spaces, services, and programs that encourage people to meet others – whether intentionally or not

- To form collaborative teams organically

- Communities become sources for discovery

focusing

Filtering information and identifying what's next

With information in hand, people need to focus in order to assess what's relevant, identify what fits into the picture and what gaps there are to fill, and determine what they want to do next. It requires time, concentration, and, often, guidance from others to understand what to do next.

Goals

- Fully immerse in the task at hand, with few distractions

- Easily switch among activities and mindsets (e.g.: exploratory and analytical) while remaining in the same space

- Test ideas quickly

- Get help from the right people at the right time, in the right ways

- Identify something they have a passion to pursue

- Minimize downtime (e.g.: between research cycles)

How people "focus"

- Select the right space for their needs, from quiet to buzzing spaces

- Spread out materials on physical and digital surfaces (e.g.: large worksurfaces, multiple monitors, large visualization spaces)

- Use whiteboards to visualize thinking

- Work with collaborators for extended sessions and book rooms to "own"

- Develop ideas through conversations with peers, advisors, and experts – ad-hoc and scheduled

- Write proposals

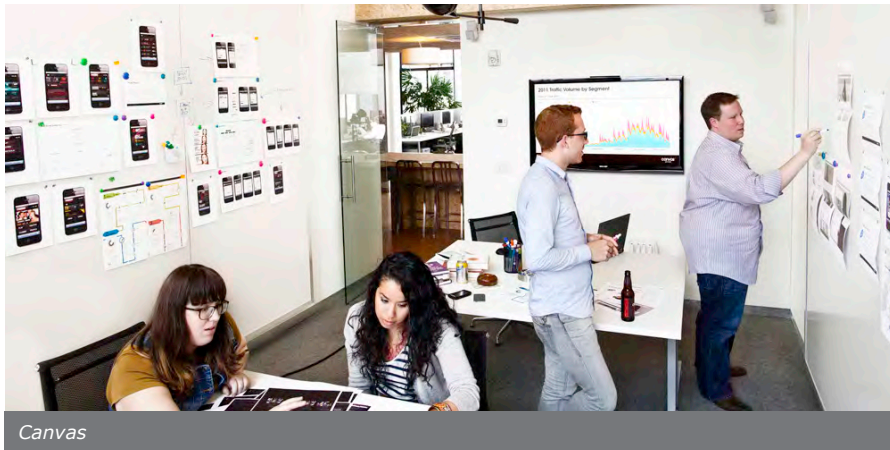- Iterate improvements (e.g.: to experiment design)

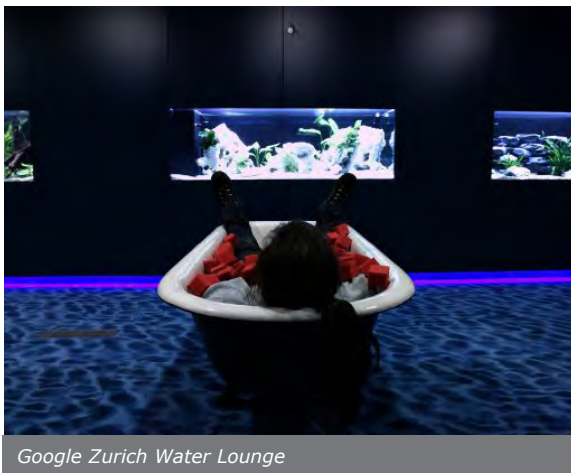
NCSU Library

U. Chicago Manuseto Reading Room

focusing
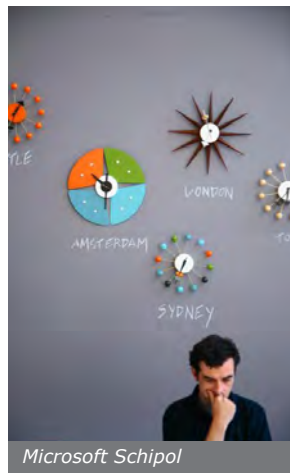
Filtering information and identifying what's next

Canvas

Google Zurich Water Lounge

Microsoft Schipol

Wants and expectations

- Project rooms that groups can "own" for extended periods of time (e.g.: multiple days), where they can spread out, pin up materials, and "personalize" the space

- Access to experts (around the world) at anytime, from wherever you are

- Working in interdisciplinary teams to push into new territories

- Seamless virtual collaboration with collaborators across the globe; working in virtual "labs"

- Natural and inspiring settings

growing
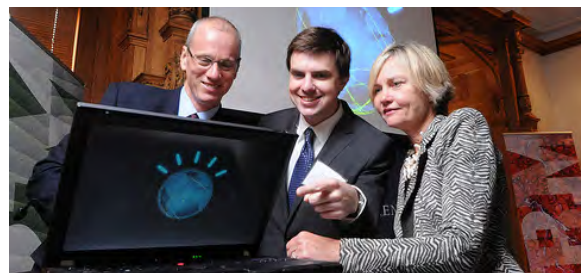
Mastering new skills and building relationships.

As people advance in their time at Georgia Tech, they aspire to be better at what they want to do. Intentionally and with experience, they master new skills, take on new roles, and develop relationships that enable them to grow.

Goals

- Execute ideas as envisioned

- Learn things they can apply (e.g.: teaching methods)

- Build confidence in their abilities

- Become "job-ready"

- Keep on top of the latest tools and technology (e.g.: what students and industry are using)

- Take on new roles, e.g.: as innovators, entrepreneurs

- Achieve something beyond immediate expectations

How people "grow"

- Participate in informal and formal learning opportunities, e.g.: lectures, events, workshops, conferences, courses / classes

- Reach out to experts for consultations

- Connect with Atlanta-based companies and Georgia Tech groups to gain real-world experience, such as shadowing, volunteering, short-term jobs, working in labs

- Participate in co-curricular activities, groups, committees

- Work with peers to learn the skills they have

- Prototype and iterate

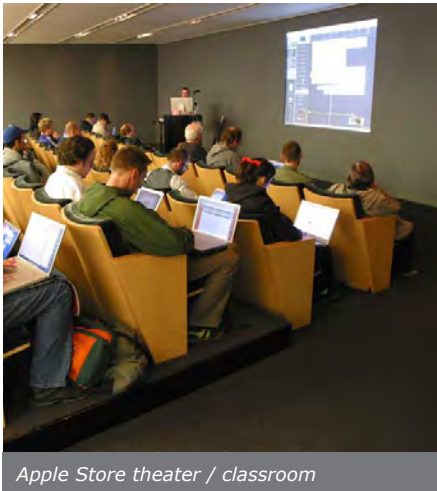*Formal training – e.g.: IBM Analytics Skills Program*
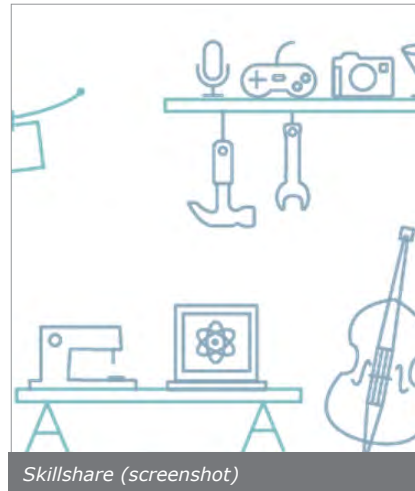

Exploratorium Maker Faire

growing

Mastering new skills and building relationships.

Apple Store theater / classroom

Skillshare (screenshot)

Smithsonian EdLab

Wants and expectations

- More workshops to learn new skills (e.g.: for teaching, media creation, data management)

- Help with "heavy duty" statistical analysis

- Share expertise and knowledge (e.g.: for innovative teaching methods) more effectively

- Engage more undergraduates in research so that they get hands-on experience

- Enable students to direct their own learning, and become better designers and problem-solvers

- Continue to learn from peers (students) – they're usually available at the right place and time, and interaction with peers is more "frictionless"

creating

Expressing and applying ideas.

From papers to books to videos to virtual models to 3D prototypes and mobile apps, there is a growing diversity of "products" that people are using to express and apply what they know.

Goals

- Express (new) ideas through their own "words"

- Prototype and implement innovative ideas

- Solve problems

- Have impact beyond academia

How people "create"

- Use variety of media and tools — written, verbal, visual, aural, and tactile — such as a research paper, radio show, video, or 3D prototype

- Iterate: draft, prototype, pilot

- Collaborate with others, e.g.: side-by-side work, group brainstorming, synchronous collaboration through online tools (such as Google Docs)

- Explore ideas through large-scale visualization and whiteboarding

- Partner with local, regional, and national entities

U. Mary Washington Think Lab

Stanford d.School

creating

Expressing and applying ideas.

Duke Fuqua lecture hall

NCSU Visualization Lab

Wants and expectations

- More spaces for data visualization and "making"

- More spaces for groups to spread out, pin up, and leave up materials, e.g.: project rooms

- Expand beyond the local or national community to collaborate more on a global scale – whether it's for research, active learning, or data sharing

- Physical and digital tools that work together seamlessly

showcasing

Sharing back with the community

In a scholarly environment, sharing back information and content is a critical step. Beyond adding to collective knowledge, it can have positive impacts on individuals, disciplines, institutions, communities, and beyond.

Goals

- Publish in high-impact journals and channels

- Disseminate work to a wide(r) audience

- Inspire others – pique their interest and instill a sense of discovery

- Contribute to the research community

- Catalyze change and influence others to follow

- Secure funding

How people "showcase"

- Present at conferences and events (external and at Georgia Tech)

- Host outreach events

- Submit to journals, publish books, write in magazines and blogs

- Curate exhibitions

- Display student projects digitally and physically

- Share open source software, packages

- Make resources available digitally (e.g.: submitting to respository)

University of Michigan MFA arts show

Georgia Tech Research & Innovation Conference

showcasing

Sharing back with the community

Purdue Hall for Discovery and Learning Research

NCSU Hunt Library Immersive Viz Lab

Stanford Wallenberg Hall

Wants and expectations

- Past work is archived and can be accessed online (e.g.: previous years' class projects), *and* is referred back to (e.g.: students create and archive materials, but don't look back to them)

- Exhibition spaces around campus that showcase Georgia Tech materials and student / faculty work

- Seminal events, such as dissertation defenses, that are hosted in a central location and promoted to the public

- Blockbuster showcases of work that draw users to places (e.g.: a fully immersive environment takes users on a journey through the universe)

- Help with scholarly communication decisions, e.g.: which conferences to attend, how to "build a brand," best options for disseminating research

campus playbook

The campus playbook contains a number of "plays," which are opportunities for the campus to support critical "moments" in research, teaching, and learning and address key goals of the Institute and users. In our research so far, we have heard about opportunities to greater support innovation and entrepreneurship, cross-disciplinary knowledge and collaboration, campus communities, and focused individual work.

As a "playbook," campus plays can be applied where and when as needed. For each play, we have suggested how it might work and the kit-of-parts needed, but exact mechanics need to be developed when the play is applied to a specific context. Plays include "neighborhoods" (integrated space and service concepts), new staff roles, and events and programs to engage the Georgia Tech community.

Which, and how, plays are part of the Library Renewal needs to be determined in collaboration with Library & Learning Excellence and the design team. The plays presented here are also not comprehensive of what's been suggested or what will be considered for the campus or the Library. In addition to the plays, there are many other ideas to explore, develop, and validate in Phase 2 of the Project. Ideas suggested so far are listed after the plays, and ideas for the Library specifically are included in the Library Renewal section of this report.

◇   goals

◇   summary of plays

◇   principles

◇   plays

◇   other ideas

goals

For greatest impact, campus plays address goals that both the Institute and users have:

- **Whole Scholar:** Develop knowledge, skills, and interests across disciplines, so that scholars can apply what they know in a wider context and be prepared for the real-world.

- **Innovative Teaching & Learning Methods:** Apply innovative teaching and learning methods in informal and formal settings to continually improve learning experiences and outcomes.

- **Interdisciplinary Collaborations**: Form interdisciplinary and vertically-integrated teams to pursue new areas of work and impact.

- **Campus Communities**: Form communities of practice that capture the diverse interests on campus, where students, faculty, and staff can belong and actively participate.

- **Inspiration & Serendipity**: Inspire people to explore and do new things that excite them.

- **Innovation & Entrepreneurship:** Promote and support innovation and entrepreneurship and build relationships with external communities that enable projects to have impact.

plays

Plays are new "neighborhoods," staff roles, or events and programs that address institutional and user goals and enable users to immerse in the key "moments" of research, teaching, and learning experiences.
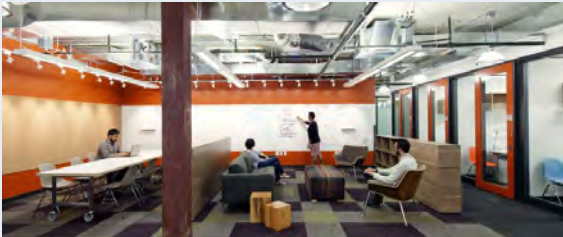
Neighborhoods

Neighborhoods bring together related spaces, services, people, and resources around a common theme in order to create a more supportive and connected experience for users and enable units to work together.

Example at Georgia Tech: Level 2 of the Clough Undergraduate Commons, where academic student services—including their user spaces (e.g.: tutoring spaces), services (e.g.: drop-in tutoring hours), and resources (e.g.: course textbooks, previous exams)—are brought together for greater proximity to, convenience, and awareness for undergraduates.

Staff Roles

New staff roles create opportunities to better connect with users – for example by providing personalized services and helping navigate the diversity and depth of information and resources on campus. New staff roles have some space implications, though the focus is on new service models and delivery.

Example at Georgia Tech: Clough Commons "Help Desk" staff, who are able to answer any questions that undergraduate students may have, and in particular on academic advising and technology.

Events & Programs

Events and programs provide new ways to engage students, faculty, and staff with what's happening on campus and the interests / pursuits of people at Tech. Some are led by the Institute, some by users, and others co-created.

Example at Georgia Tech: Clough Art Crawl, which provides an opportunity for students to display and view art by their peers in a highly-trafficked area of campus.

summary of plays

Play	Overview	discover	focus	grow	create	showcase	Goals addressed
Virtual browsing environments	Through interactive technologies and applications, virtual browsing environments will enable users to navigate, identify and use collections with ease, beyond what's possible with physical browsing and materials use.	●				●	Inspiration & serendipity
Themed communities	Through a competitive process every year, emerging communities of practice can "own" a neighborhood to focus on proposed projects, share resources, connect with experts, showcase their work, and increase membership in the community.		●	●	●	●	Whole scholar, interdisciplinary collaboration, campus communities, inspiration & serendipity
Innovation & entrepreneurship center	Located centrally to student activities, the innovation & entrepreneurship center includes spaces, services, resources, active programming, and programs to help students kick-start and develop new ideas.	●	●	●	●	●	Interdisciplinary collaboration, campus communities, inspiration & serendipity, innovation & entrepreneurship
Teaching & learning studio	The Teaching and Learning Studio provides spaces, technology, resources, and services dedicated to learning about, creating content for, and testing innovative teaching & learning methods.		●	●	●		Innovative teaching & learning methods, interdisciplinary collaboration, campus communities
Project rooms	With project rooms, teams can not only book a collaborative work area for an extended period of time, but also experts' time and equipment altogether.		●		●		Interdisciplinary collaboration
Pop-up showspaces	Pop-up showspaces highlight the activities that take place at Georgia Tech and provide opportunities for people to break out of their departments and buildings. As a mobile kit-of-parts, they're easy to pack up, move around, and customize.	●				●	Whole scholar, inspiration & serendipity
Research guides	Research guides help students, faculty, and staff tackle administrative tasks and guide them through standard processes and procedures so that they can focus on doing research.		●				Whole scholar
Peer-to-peer events	Encourage users to lead their own events by guiding them through the process and providing some structure to get them started.	●		●		●	Whole scholar, inspiration & serendipity
Loyalty program	A loyalty program at Georgia Tech incentivizes users to try new things and be active participants in the community. Completing tasks can grant long-term privileges and/or accrue points that can be redeemed for awards.	●		●			Whole scholar, campus communities, inspiration & serendipity
Quiet spaces	A mix of centralized and distributed quiet space where people can focus and be part of a scholarly atmosphere alongside others. The space may include special features / functions that encourage deep focus and/or serendipity.	●	●		●		Inspiration & serendipity
Conference center	Dedicated to faculty, students, and staff for hosting events on research, teaching, and learning. The Center provides services for the "before" and "after" of events as well – for example, presentation practice in the actual space and archival services for sharing materials online (e.g.: SMARTech).	●		●		●	Whole scholar, campus communities, inspiration & serendipity

principles

When implementing plays, consider the following:

- **Integrate in one place**: Create go-to places for related spaces, services, and resources.

- **Connect physical and digital**: Connect physical and digital "spaces," services, and resources, complementing one with the other.

- **Enable flow**: Keep different types of spaces close to one another so that people can easily switch amongst activities and test things out. For example, between individual and group work, learning and social interaction, and making and thinking.

- **Meet people where they are**: Put things close to where people already are, where they go, and what they do so that new things are likely to be used and become part of existing habits and routines.

- **Be agile**: Keep spaces flexible and adaptable to change.

- **Be "neutral"**: Create spaces that are not owned by one discipline; they are important for interdisciplinary work.

- **Make things visible**: Showcase services and resources.

- **Be a platform**: Help people learn and do things themselves.

- **Reach out to users**: Enable services to be proactive and personalized, e.g.: ask users to opt-in for notifications and recommendations.

play: **virtual browsing environments**

Through interactive technologies and applications, virtual browsing environments will enable users to navigate, identify and use collections with ease, beyond what's possible with physical browsing and materials use.

Cleveland Museum of Art - Gallery One digital collections browsing (by Local Projects)

DOK Delft Heritage Browser

Seattle Public Library

discover   focus   grow   create   showcase

How It Works: There are many possibilities and use cases for a virtual browsing environment; they range in complexity and choosing the appropriate application(s) is key. Virtual browsing environments should go beyond replicating a physical browsing experiences – they should offer something more. At a minimum, users should be able to browse virtual bookshelves, see additional information about resources (e.g.: related resources, popularity), discover resources through unique filters and arrangements, see previews, get recommendations, save citations, and explore curated collections. A web-based browsing application should be available for basic activities as well, such as getting recommendations and discovering new content.

Kit of Parts: Multiple screens, soft seating, work surfaces (e.g.: to jot down notes, work with physical materials while browsing digitally)

Value to Users: Engaging browsing experience that helps users discover new and unexpected resources. Greater awareness and understanding of what's available.

Value to Georgia Tech: Makes materials visible even if they're off-site or born-digital. Encourages collections use and enables users to make the most of what's available. Showcases materials that are unique to Georgia Tech.

play: **themed communities**

Through a competitive process every year, emerging communities of practice can "own" a neighborhood to focus on proposed projects, share resources, connect with experts, showcase their work, and increase membership in the community.

MIT Media Lab LEGO Learning Laboratory

Cornell Risley Residential College for the Arts

Chattanooga Public Library 4th Floor

discover   *focus*   *grow*   *create*   *showcase*

How It Works: A competition every year selects a handful of groups to build communities of practice in designated "neighborhoods." Selected groups commit to pursuing proposed projects, conducting outreach to engage new members, and showcasing their work-in-progress and final outcomes through exhibitions and events.
As the themes of these neighborhoods change every year, these neighborhoods become the go-to spaces to engage in the newest directions of work at Georgia Tech. Suggestions for community structures include: user groups (e.g.: postdocs), work processes (e.g.: authors), and topics or challenges (e.g.: sustainability).

Kit of Parts: Themed communities include flexible individual and group spaces, exhibition and event spaces, and project rooms. Resources can be loaned for the long-term to keep in the community. Staff provide content expertise, and exhibition, event, and programming support.

Value to Users: Provides interdisciplinary groups with a space they can own and establish a community of practice. Gain support for their work and draw in more members.

Value to Georgia Tech: Supports interdisciplinary collaboration and encourages people to pursue their interests. By bringing multiple communities together, enables efficient service delivery and increases chances for serendipity.

play: **innovation & entrepreneurship center**

Located centrally to student activities, the innovation & entrepreneurship center includes spaces, services, resources, active programming, and programs to help students kick-start and develop new ideas.


UIC Innovation Center

UVA Darden iLab *(photo: Elli Williams)*

Ryerson Digital Media Zone *(photo: Lisa Sakulensky)*

UVA Darden iLab

△ discover △ focus △ grow △ create △ showcase

How It Works: As the central one-stop shop and first line of contact for all innovation and entrepreneurship (I&E) inquiries, administration, and support services, the Center drives and nurtures I&E on campus and provides spaces and services for the full life-cycle of an I&E project (e.g.: brainstorming, prototyping, pitching). As a hub for the ecosystems, it enables a seamless user experience, coordinated service delivery, master events and program calendars, space and resource sharing, and connections to communities and nodes of activity off- and on-campus. Importantly, the Center is a showcase of ideas that attracts external partners and investors alike.

Kit of Parts: Service point / zone, consultation spaces, exhibition areas, large multipurpose event space, project rooms and incubator spaces, instruction spaces, drop-in work areas, informal work and gathering spaces, meeting rooms, specialized spaces (e.g.: media production, presentation practice), staff and guest workspaces

Value to Users: Provides guidance and connections in a complex system. Platform of spaces, tools, and people to help them succeed.

Value to Georgia Tech: Anchors and displays innovation and entrepreneurship on campus. Central, dedicated space encourages like-minded people to meet, recruit project members, and share ideas. By helping users navigate the ecosystem, increases participation and likelihood of success.
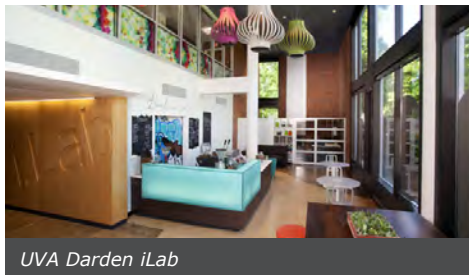
play: **teaching & learning studio**

The Teaching and Learning Studio provides spaces, technology, resources, and services dedicated to learning about, creating content for, and testing teaching & learning methods.

Harvard Hauser Digital Studio *(photo: Eric Ouyang)*

NYU Digital Studio *(photo: Jeffrey Bary)*

RIT Teaching & Learning Studio

discover · focus · grow · create · showcase

How It Works: Users at the Learning & Teaching Studio can explore and test teaching and learning methods, and in particular create content for flipped classrooms and MOOCs. The Studio is proximate to teaching & learning experts, so users have immediate access to help when needed. The Studio also provides one-on-one consultations and side-by-side work sessions with experts, hosts faculty-oriented events, and leads courses on a variety of topics, such as new technologies, making the case for curricular change, and designing assignments. There are opportunities to partner with or be operated by units such as CETL.

Kit of Parts: Consultation spaces, media studios, flexible multipurpose instruction and event spaces, dedicated faculty workspaces, "test" classrooms with the latest instructional technology, workspaces for staff and "resident" experts

Value to Users: Expand teaching skills and have the tools to create the courses and learning experiences they envision. Test new content and methods in a safe environment.

Value to Georgia Tech: Supports Institutional goal to innovate in teaching and learning. Builds a community of instructors that can help one another and champion innovative methods. Helping instructors do well means that students will have better experiences in the classroom.

play: **project rooms**

With project rooms, teams can not only book a collaborative work area for an extended period of time, but also experts' time and equipment all at once.

Canvas, NYC

TU Delft Library Project Rooms

Red Bull Team Room

discover · focus · grow · create · showcase

How It Works: Project rooms enable groups to book spaces, tools / equipment, and experts (such as subject librarians, meeting facilitators, and video production gurus) at the same time, for example for a flipped "office hours" where experts come to you and your work. Project rooms and experts can be reserved using different strategies, such as (1) case-by-case basis, via proposals, (2) credit system, or (3) open reservations.
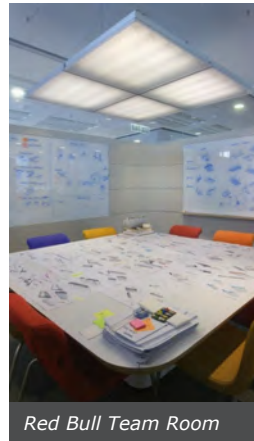
Kit of Parts: Project rooms are similar to meeting rooms. They include movable, modular furniture; ample wall space for writing and pinning up materials; and basic technology. Project rooms can also be specialized, such as "making" intensive or data visualization spaces.

Value to Users: Able to "own" a space and focus for extended periods of time. Minimizes time lost in looking for spaces, setting up, breaking down, and re-situating. More in-depth consultations; being able to show / point to specific work.

Value to Georgia Tech: Provides neutral spaces that promote collaboration and working on complex projects. Can adjust operations to meet demands throughout the year.

play: **pop-up showspaces**

Pop-up showspaces highlight the activities that take place at Georgia Tech and provide opportunities for people to break out of their departments and buildings. As a mobile kit-of-parts, they're easy to pack up, move around, and customize.

Parsons – movable storage and display

SF Mobile Museum

Exploratorium - movable exhibitions and demonstrations

discover   focus   grow   create   showcase

How It Works: Pop-up showspaces are platforms to showcase what's new at Georgia Tech that are always moving and changing, and can be set up in high traffic spaces on campus or within different schools and departments (e.g.: a biology project in an architecture building). They include physical and digital components, and can be static or interactive – for example, showspaces might come to life every Tuesday with hands-on demonstrations and Q&A sessions with the people behind the work.

Kit of Parts: Showspaces must be self-contained and securable. Includes vertical surfaces and/or monitors for displaying content and integrated storage. Can include additional surfaces for presentations / demonstrations and power supply as needed.

Value to Users: Having a kit-of-parts takes guesswork and effort out of building exhibitions from scratch. Mobility increases audience reach. Creates opportunities to gather feedback and interact with audiences.

Value to Georgia Tech: Reinforces Georgia Tech's activities in research, innovation, and entrepreneurship on a regular basis. Infuses a sense of wonder and discovery across campus and creates fun, informal learning opportunities. By constantly changing and moving around, increases chances for serendipitous encounters.

play: **research guides**

Research guides help students, faculty, and staff tackle administrative tasks and guide them through standard processes and procedures so that they can focus on doing research.
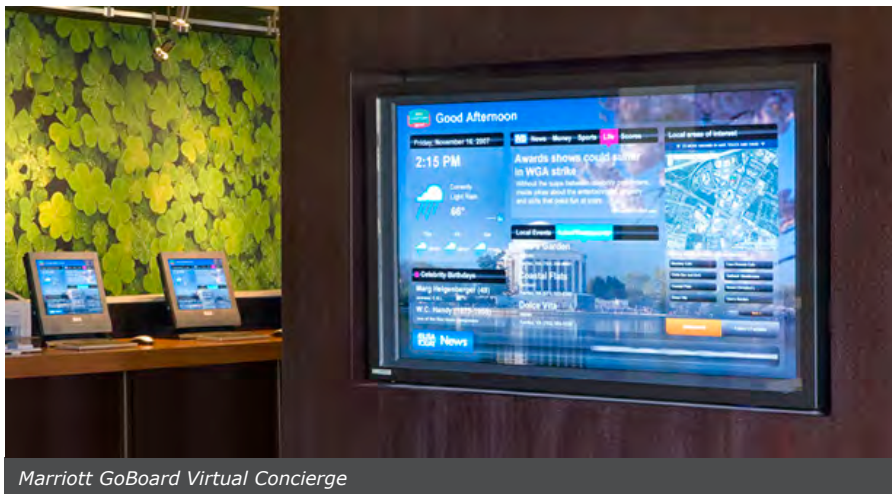

University of Washington, Research Commons

Marriott GoBoard Virtual Concierge

discover focus grow create showcase

How It Works: Research guides are experts at navigating and executing tasks that often distract researchers from being researchers. Through consultations and tools, research guides help researchers identify what they need to do, map out the process, and get things done. They also host drop-in hours, events, and programs over the academic year. Research guides are well-networked and can refer users to other services and people – but only when absolutely necessary; research guides should be the main point of contact for researchers and retain "clients" over time.

Kit of Parts: Research guides have a central workplace where users can drop-in, with a service point for welcoming users and short consultations, individual and collaborative staff workspaces, and consultation rooms for extended meetings with users. Research guides can also be stationed in other neighborhoods, such as the themed communities and I&E Center.

Value to Users: Minimizes time spent on admin tasks and frees up time for research. Eases stress of navigating complex systems.
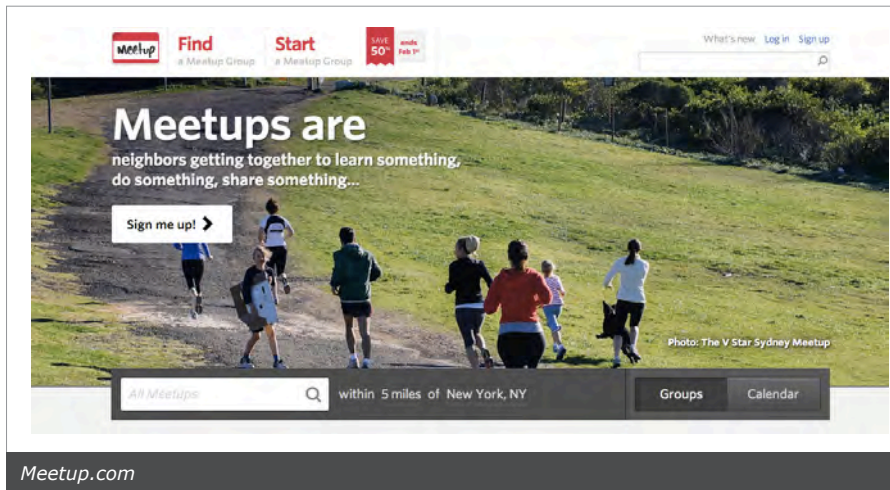
Value to Georgia Tech: Helps researchers be researchers and shows commitment to enabling them to do their best work. Opportunity to save time for researchers and administrators by streamlining processes, minimizing error, etc. Research guide can be key differentiator and attractive benefit of doing research at Tech.

play: **peer-to-peer events**

Encourage users to lead their own events by guiding them through the process and providing some structure to get them started.

Meetup.com

Field guides and toolkits

Unique events (Overland Public Library demos)

discover   focus   grow   create   showcase

How It Works: Create a "menu" of events for users to choose from (e.g.: meet-ups, hackathons, pitches, readings, and how-tos) and a "toolkit" that helps them plan and lead these events successfully. Provide dedicated venues and regular scheduling (e.g.: Hackathons every Thursday evening). Establish a program for the semester and solicit proposals from the Georgia Tech community. Event leaders would then get event, technology, and marketing support.

Kit of Parts: Selection of event spaces, such as flexible multipurpose spaces, auditoria, workshop spaces, and outdoor spaces. Toolkit to help event leaders plan their events; it would include, for example, tips for leading activities, suggested durations of agenda items, marketing tips, and so forth.

Value to Users: Provides a structured avenue for hosting campus-wide events and lends legitimacy and prestige. Having a toolkit enables those with limited event experience to do well.

Value to Georgia Tech: Enlivens campus with a diversity of event types. Brings people together across campus to learn, have fun, and be inspired. Shows that it's important to balance academics and extra-curricular activities.

play: **loyalty program**

A loyalty program at Georgia Tech incentivizes users to try new things and be active participants in the community. Completing tasks can grant long-term privileges and/or accrue points that can be redeemed for awards.

Whitney Museum of Art – Curate-Your-Own Membership Program

Airline loyalty programs & networks

Dallas Museum of Art – Friends Program

GSU Law Library Rewards Program

discover   focus   grow   create   showcase
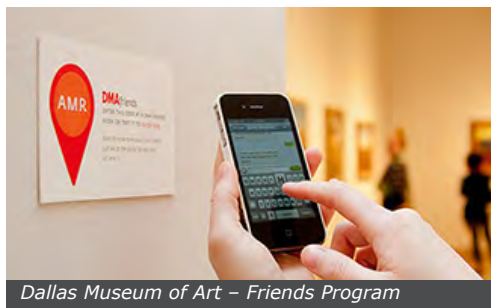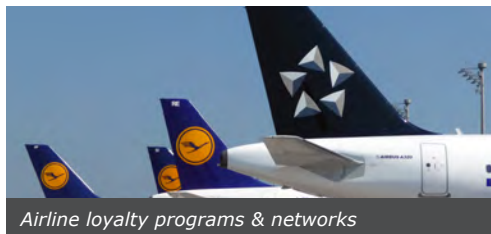
How It Works: The loyal program creates a system of incentives to explore what's offered at Tech, such as going to the library or attending an event. Groups across campus can elect to participate in the loyalty program and create their own tasks and rewards. In general, points are accrued by completing activities and can be redeemed for specific awards and/or unlock privileges. For example, being a frequent ILL user might grant a longer loan period for the next year. There can be opportunities to partner across groups, such that points can be redeemed outside of the group it was awarded in. Rewards should aim to add value to the user experience – that is, be more than collecting points and redeeming "stuff."

Kit of Parts: Web-based and mobile application for the loyal program, with a platform for providers to manage their perks and program members.

Value to Users: Incentivized to try new things and rewarded for participation and loyalty. Feel appreciated and part of a community.

Value to Georgia Tech: Enables groups across campus to establish long-term relationships with users. Can provide a glimpse into the preferences of its communities / users.

play: **quiet spaces**

A set of centralized and distributed quiet spaces that inspire scholarship and learning for faculty, students, and staff, where they can be "alone, together" and work individually, with opportunities for respite and discovery.

Natural scenery, One Flew South, Atlanta GA

Quirky phone booths (photo: Spector Group)

Duke Fuqua Library Reading Room

discover **focus** grow **create** showcase

How It Works: Quiet spaces should include centralized spaces, such as a reading room, and distributed quiet areas, such as carrels, nooks, and phone booths, to support quiet work wherever needed and so users can be "alone, together" or simply alone. Quiet spaces should update the traditional reading room and carrel in functionality and aesthetics — they should be outfitted for work with physical and digital materials (i.e.: provides outlets, large work surfaces), enable deep concentration, and support respite and discovery when those moments are needed. There are opportunities for interiors, collections, and technology to support a scholarly, focused, and serendipitous environment, for example through rotating browsing collections, natural settings / materials, or wi-fi / phone-free "cold spots." There should be proximate respite spaces, where users can refresh without losing focus completely.

Kit of Parts: Shared workspaces (e.g.: large tables) and individual workstations with power outlets and task lighting; informal seating; small enclosed workspaces.

Value to Users: Provides spaces for concentration and getting work done (especially for users who don't have appropriate spaces on campus).

Value to Georgia Tech: Continue to support and enable a critical activity in working and learning.

play: **conference center**

Provide dedicated spaces for faculty, students, and staff to host events on research, teaching, and learning, with services to support the "before" and "after" of the event, such as presentation archival.

Central Michigan University conference room

Open conference area in atrium

UPLOAD TO **SMARTech**
Archival services

discover *focus* *grow* *create* *showcase*

How It Works: A small conference center for research, teaching, and learning events, such as symposia, speaker series, dissertation defenses, and meetups, adds to the portfolio of spaces available on campus for faculty, students, and staff to share their work and meet with peers. In addition to typical conference services, such as technology support and catering, this conference center would provide a greater range of services to support what occurs before and after an event, including media production (e.g.: video production consultations, image search assistance), presentation practice in the event spaces, and material archival and sharing (e.g.: uploading presentations to SMARTech).

Kit of Parts: Selection of event and meeting spaces, such as auditoria and medium to large meeting spaces; lobby and gathering / spill-out spaces; informal meeting / work areas; catering kitchen; staff spaces and consultation rooms

Value to Users: Provides low-cost opportunities to present work and meet peers; helps users with full experience of hosting an event, including activities that would benefit attendees (e.g.: archival)

Value to Georgia Tech: Encourages Georgia Tech to share their work and increases amount of work shared (at event and online); sets precedent for level of service and user experience (for presenters and attendees)
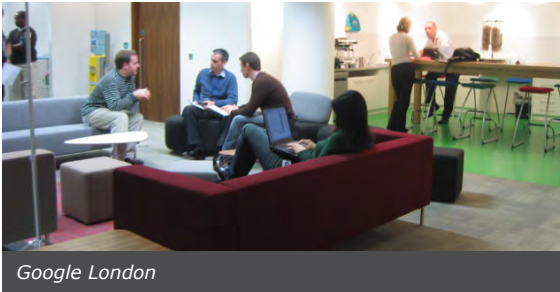
other ideas

In addition to the plays in this document, there are others to further explore and refine in Part 2. On the following pages are ideas / concepts that participants have suggested – they include spaces in high demand; services to help with research, teaching, and learning; tools and resources; and events and programming.

other ideas: **spaces**

Google London

Betahaus Maker Room

U. Chicago Maneusto Special Collections Exhibition

Entrepreneurship & Innovation

- Innovation hub
- Entrepreneurship hub close to center of campus or in Library

Meeting

- Large spaces for events
- State-of-the-art videoconferencing
- "Problem salon" to support problem-based learning communities across disciplines, including archiving and broadcasting solutions to the world
- Interdisciplinary rooms with the resources and expertise needed for those areas
- Faculty club
- Presentation practice spaces

Making

- Central, organized makerspace program funded by Tech Fees with emphasis on peer-to-peer learning
- Tinkering / makerspace for exploring old hardware and software
- Makerspace that emulates real world studio working environment
- Multimedia studio
- Hacking, rapid prototyping "lab-lets"
- Flexible spaces where students and faculty can "play"

Other

- Airport lounge-like spaces to "dock"
- Active learning classrooms
- Configurable black box spaces

Support

- Lockers for safe storage of resources and tech

Showcasing

- "Visibility machine" – exploratory space that inspires imagination and collaboration by encouraging visitors to discover objects and ideas that "feed [the] eyes"
- Doctoral defense presentations (and practice in the same room)
- Large-scale immersive / data visualization
- Exhibition spaces; showcases of Tech's contributions
- Places for specialized information access, e.g.: data visualization, planetarium

other ideas: **services and programming**

NCSU Hunt Library Service Point

Microsoft Event Atrium

Dartmouth Berry Library Exhibition Spaces
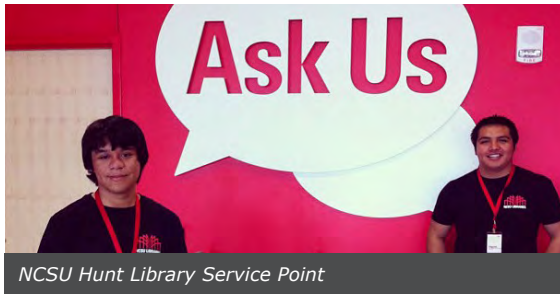
Research Services

- Help putting together dissertation – workshops and/or consultations
- Information on copyright and intellectual property
- More data support

Communications Services

- Communications Center expert for graduate-level work
- "Slide librarians" – help creating presentations, tracking down images, etc.

Events & Programs

- Digital equivalent of "book club" to discuss content
- Expanded class and workshop offerings
- Seminar series, lectures, Q&A sessions
- Campus research "open house" day
- Research methods courses / modules, taught by the Library and built into the curricula
- Peer-led workshops on technology and software

Events & Program Support

- More support for exhibits and programming in Library and Clough

Library Services

- Decentralized library services
- Longer ILL loan period
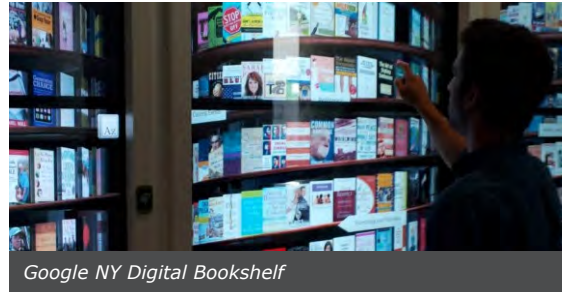- More online instruction to increase access and usage
- Centralized printing

Visitor Services

- More, easier visitor parking
- Better wayfinding and navigation for visitors

other ideas: **resources and tools**

Texas Tech Libraries Roving Reference

Google NY Digital Bookshelf

Drexel University Library Laptop Lending

People

- Bring in expert docents to attract visitors

- Designers to assist faculty and graduate students with structuring research studies (e.g.: SPSS, data analysis support)

Content

- Access to archived student work and lectures

- More datasets

- Content, instruction providers in subjects not represented at GT

Content Models

- Virtual analog to browsing experiences

- Special collections model (small, highly curated collection of print resources, artifacts, etc.) across campus

- Random access digital browsing

- Dynamic data streams / feeds of news, data, searches

- Monthly email with Library reminders and updates

- Library Wiki with quick answers to top user questions

Technology

- Technology / tools for check-out (e.g.: video cameras)

- Tools, technology that individuals cannot afford

- Centralized equipment to manage cost

library renewal

Focusing in on the library, what role will it play on campus and which "plays" should it implement as part of the Renewal project? This first part of the research project has begun to craft the vision statement and directions for the library; further conversations, research, and service modeling in Part 2 will enable the organization to define its future role and offerings.

◇ current state

◇ shifting directions

◇ vision statement

◇ strategies

◇ library storefront

◇ external research

current state

The Georgia Tech Library occupies the Price Gilbert Memorial Library and Crosland Tower (jointly known as the "Library Towers") and operates the Clough Commons. Over the past years, spaces in the Library have been piloted and renovated to meet the changing needs of the student and faculty body and now include, among others, a variety of flexible individual and collaborative work areas (some with computers), a Multimedia Studio, quiet study areas, and a home for StartUp Exchange.

"Mission Control" and 2 West
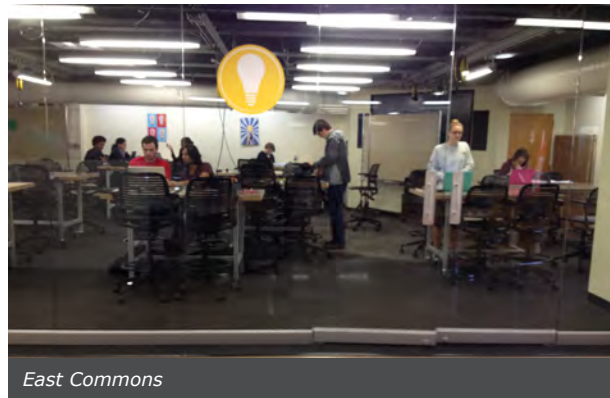
East Commons

Collaborative Computing

Café

By the Numbers

Collections

- 1,060,000 titles
- 24,000 electronic journals
- 250,000 e-books
- 43,000 Georgia Tech research and campus publications in SMARTech

Library Usage (2013)

- 1.34 million visitors (gate counts)
- 98,000 items circulated (including gadgets and media)
- 2.47M articles & books downloaded
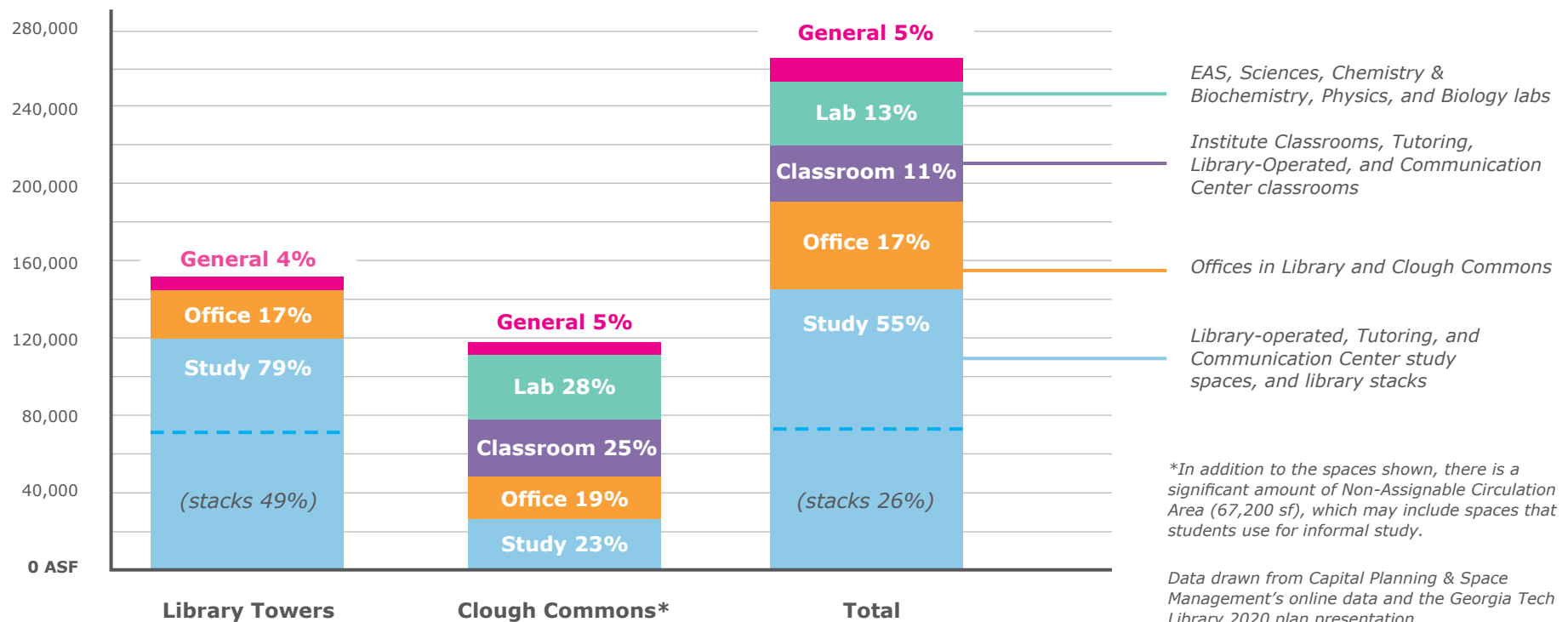- 452 instruction sessions; 8,724 attendees (2013)

Clough Commons Usage (2012-13):

- 2.5 million visitors (door counts)

current state: **space profile**

The Library Towers and Clough Commons are each ~230,000 gross square feet (GSF). The Library has 155,000 of assignable square feet (ASF), while Clough has ~25% less, with 115,640 ASF. Looking at the Library and Clough Commons in aggregate, 55% is for study (~135,000 ASF including stack spaces), 17% is office (~46,000 ASF), and 24% is instruction (classrooms and labs; ~65,000 ASF).

	Price Gilbert	Crosland Tower	**Library Towers Total**	**Clough Commons**	**Total**
ASF	63,607	91,445	**155,052**	**115,640**	**270,692**
GSF	99,832	130,464	**230,296**	**229,919**	**460,215**

EAS, Sciences, Chemistry & Biochemistry, Physics, and Biology labs

Institute Classrooms, Tutoring, Library-Operated, and Communication Center classrooms

Offices in Library and Clough Commons

Library-operated, Tutoring, and Communication Center study spaces, and library stacks

*In addition to the spaces shown, there is a significant amount of Non-Assignable Circulation Area (67,200 sf), which may include spaces that students use for informal study.

Data drawn from Capital Planning & Space Management's online data and the Georgia Tech Library 2020 plan presentation.

current state: **observations findings**

Observations in the Library and Clough Commons along with "intercept interviews" (quick interviews with users in-context) with undergraduates suggest that students work in the Library when they need to concentrate and "get work done." Clough Commons also supports focused work, but is also more frequently used in-between classes and as a gathering space – it is a convenient place to "drop in," is centrally located, and provides spill-out spaces near classrooms.

Activities and behaviors observed in Library and Clough

Spreading Out

Students often spread out laptops, textbooks, and notes around them and end up "claiming" tables. Whenever possible, students tended to spread out around a room as well, preferring to look for an empty table before asking to share a table.
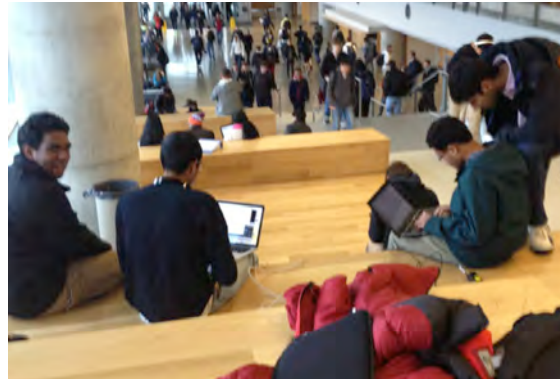
Fluctuating Group Sizes

When working in more open spaces, group sizes grew or shrank as peers dropped-by for casual conversations or to meet. Students would then look for additional seats as needed but remained "anchored" to the original meeting space unless moving was necessary.

"Alone, Together" through Headphones Quiet

Students made their own "quiet" through headphones. Some users expressed a preference for noisier spaces; others enjoyed being "alone, together." Such spaces enabled students to easily switch among focusing, taking breaks, and conversing with peers.

current state: **observations findings**

There are a number of unique spaces in the Library and Clough that amplified what works well or has room for improvement, such as the stairs in Clough and the quiet carrels, Collaborative Computing area, and Multimedia Studio in the Library.
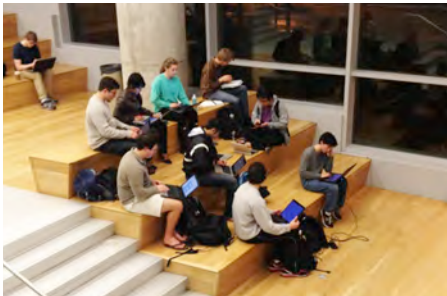

Clough Commons Stairs

Situated along a main circulation path, the stairs were a popular working and socializing space where users are willing to "make do," particularly if they were in-between classes or could not / did not have time to find other spaces to work. It supported individual and small group work at laptops well, but spreading out materials and large group work poorly, though both occurred multiple times.
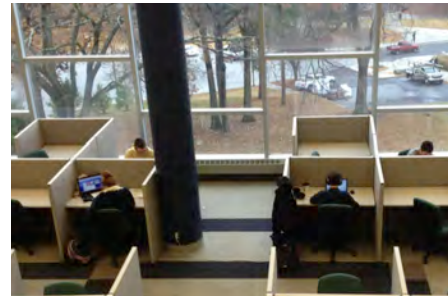
Quiet Carrels

This space is devoted to (individual) quiet / silent study. Students were occasionally in groups and multi-tasking (eating, watching TV, on phone). Carrels provide great acoustic and visual privacy, though can also provide a false sense of privacy – some groups would sit at neighboring carrels and talk occasionally.
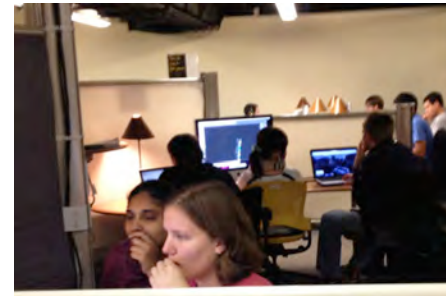
Multimedia Studio

Because of the specialized technology in the space, this space felt more "owned" by the students. The space was lively and full when observed, with groups working over longer periods of time. Groups worked at the stations and on their laptops simultaneously.
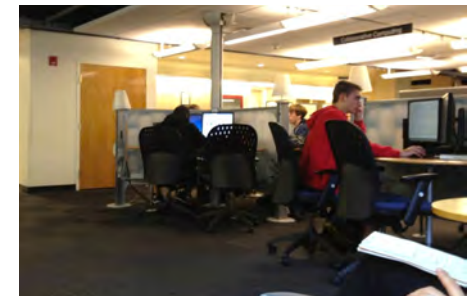
120° Workstations

The 120° tables with dual monitors provided space for 2-3 students working side-by-side. When students needed to work together while having their own screens, however, the partitions made collaborating difficult. Swiveling around to see a peer's screens was the easiest workaround. This meant sitting at adjacent rather than at the same pod of workstations.

shifting directions

The Library Renewal project is an opportunity to redefine the technological research library of the 21st century. Located in the heart of campus, the Library is physically and conceptually poised to be a gathering place for the Georgia Tech community and a crossroads for its many users, disciplines, interests. While supporting and enabling collaboration and meeting, the Lib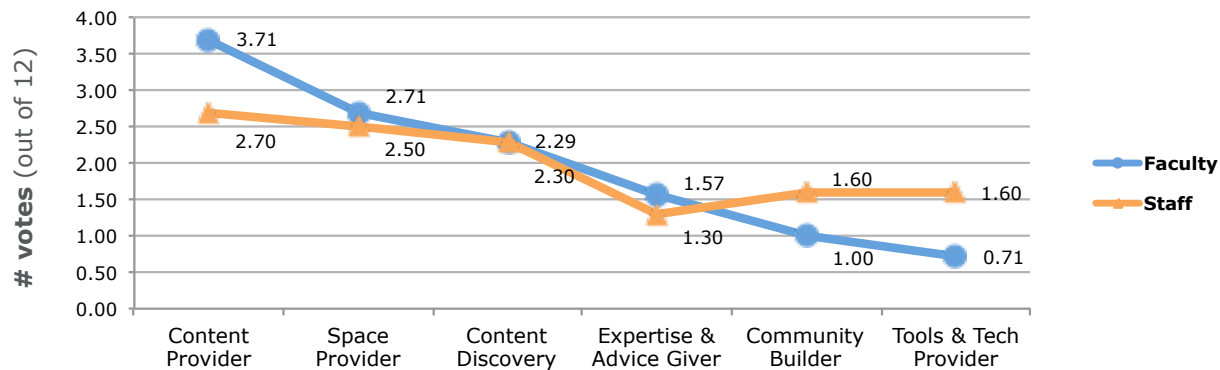rary should also continue to provide spaces for sustained scholarly study, such as quiet reading rooms, for students, faculty, and staff. Also driving the renewal is the Library's partnership with Emory University – moving physical collections to the shared Library Service Center and having seamless access to Emory resources (and vice versa).

Library Roles

In a workshop with the Library Faculty Advisory Board (LFAB), we discussed potential roles that the Library could play, and in what proportions. Each faculty and staff member distributed 12 dots across the 6 roles to indicate their thinking. Results below have been normalized.

Chart: # votes (out of 12) by role — Faculty and Staff

Role	Faculty	Staff
Content Provider	3.71	2.70
Space Provider	2.71	2.50
Content Discovery	2.29	2.30
Expertise & Advice Giver	1.57	1.30
Community Builder	1.00	1.60
Tools & Tech Provider	0.71	1.60

Content Provider: Build the collections and resources that users need	**Expertise & Advice Giver:** Guide users through their projects (e.g.: consultations)
Space Provider: Provide a variety and quantity of spaces to support user activities	**Community Builder**: Facilitate connections among people to help create and strengthen communities
Content Discovery: Help users identify and acquire resources	**Tools & Tech Provider**: Provide the latest tools and technology that users need to do their work

Discussion

- The pulse-taking activity presents a somewhat traditional view of the library with Content Provider as the primary role.

- The Library should provide spaces for people to come together across disciplines and showcase GT work

- While Tools & Tech Provider received the lowest number of votes on average, there was significant discussion about providing technology for presentation, meeting, visualization, collaboration, and browsing.

- Upon discussion and reflection, the role of Content Discovery" overlaps with Expertise and Advice Giver, as one of the key services and expertise offered by the library is assistance with finding new / appropriate content.

- Library expertise and services should be more visible, especially as collections move to the Library Service Center.

shifting directions: **ideas for the library**

Many users also view the Library as a dynamic space for bringing people and ideas together—physically and digitally—to communicate, collaborate, and problem-solve, while retaining spaces for quiet, focused, sustained work. They provided examples of what could be in the future library.

Spaces

- Variety of flexible spaces, such as for collaboration, multimedia production, meeting and conference, formal classes, and "playing"

- Spaces for serious academic work, e.g.: quiet work alongside others.

- Serene spaces to recharge, "get away"

- Dissertation defense spaces, for practice and presentation

- Small conference center with catering and archival services; could be a faculty space

- Spaces dedicated to and that showcase specific disciplines and pilot projects, that are always changing (e.g.: yearly)

- "Studios" with spaces for sustained collaboration and a core collection (e.g.: ~1000 books on-hand)

- Spaces for groups that don't have any on campus, e.g.: post-docs

- Faculty space to promote collaboration and connections

Services

- Organize collaborative initiatives to bring people together across disciplines

- Provide more services, such as writing support for graduate students; content discovery and screening; teaching support; data access, use, and management; and networking

- Collaborate with staff and students – be part of the team, e.g.: embedded in the research process and departments

- Provide (personalized) services in a proactive and unobtrusive manner as well as on-demand

- Provide services through many channels, e.g.: online, kiosks, roving staff, video links, on-demand, mobile apps

Content

- Showcase people and their projects; broadcast new content and scholarship

- Make activity visible, e.g.: through dynamic digital content feeds

- Express "Georgia Tech"

- Display library collections

- Highlight the arts and creativity

- Enable users to see how they contribute to the "scholarly record"

- Make recommendations based on past "purchases" and browses

- Create people "catalogues" that can be checked out like books; leverage communities for content discovery

shifting directions: **graduate personas**

In thinking about the future of the Library, staff created personas to capture some of the more unique needs and user characteristics that they need to support in the future. In part 2 of this research project, these personas can be used to identify people to engage, develop use cases, and test recommendations. Full portraits of each persona are in the appendix.

The Researcher

Engaged in several research projects at a time and very academically-focused. Aims to publish and secure a tenure-track position.

The Entrepreneur

Balances coursework and a side project that he's looking to bring to market. Always networking and presenting ideas informally.

The Novice Seeker

Takes advantage of what's available and has a wide network of sources (from librarians to blogs). Tends to ask for help "just-in-time."

The Conductor

Research group leader who collaborates with internal and external groups. Always available for in-person or virtual meetings.

The Designer

Architecture student who splits her time between lectures and the design studio, and an extensive user of print collections.

*Note: The Library Task Force that created these personas also prioritized them to provide a sense of where we should focus and where there are greatest opportunities for innovation. They are presented from highest to lowest priority from left to right and top to bottom.

shifting directions: **faculty personas**

In thinking about the future of the Library, staff created personas to capture some of the more unique needs and user characteristics that they need to support in the future. In part 2 of this research project, these personas can be used to identify people to engage, develop use cases, and test recommendations. Full portraits of each persona are in the appendix.

The Futurist Inventor

Shaping the future, one project and student at a time. Highly mobile, connected to others, and comfortable with all things digital.

The Expert Connector

Experienced and passionate academic who mentors and leads students and depts. to be their best. Innovator in teaching & learning.
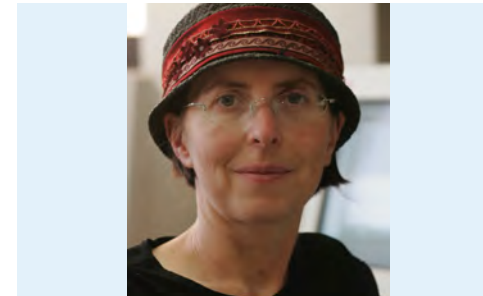
The Tenure-Track Jr Faculty

Passionate about research, and learning to juggle the many roles of a faculty member. Always looking to connect with others.

The Progressive Traditionalist / Thinker

Performs cutting-edge research with multidisciplinary teams. Mentors and aims to instill a sense of discovery in students.

Note: The Library Task Force that created these personas also prioritized them to provide a sense of where we should focus and where there are greatest opportunities for innovation. They are presented from highest to lowest priority from left to right and top to bottom.

shifting directions: **archives personas**

In thinking about the future of the Library, staff created personas to capture some of the more unique needs and user characteristics that they need to support in the future. In part 2 of this research project, these personas can be used to identify people to engage, develop use cases, and test recommendations. Full portraits of each persona are in the appendix.


The Cutting-Edge Educator

Uses technology to flip the classroom and partners with archivists to create hybrid analog / digital classes.

The Architectural Historian

Uses text and image reproductions extensively, particularly oversized architectural drawings, for research and teaching.

The Sustainer

Long-time user and partner of the Archives, who integrates historic materials into class sessions and projects.

The Student Assistant

Serious and dedicated to the Archives. Works on physical collections processing and digital projects, and loves spending time mining online archival collections.

vision statement

The following is a draft vision statement for the Library as an organization; the vision for the library building should be in support of this:

Georgia Tech Library will define the technological research library of the 21st century.

We will enable people to explore the past and design the future by bringing together inspirational spaces, curated content, expert guidance, and scholarly communities.

vision statement, **unpacked**

What this means:

A network for discovering and retrieving (living) information.

A "launching pad" for turning information into knowledge, advancing ideas, and experimenting.

Georgia Tech Library will define the technological research library of the 21st century.

We will enable people to explore the past and design the future by bringing together inspirational spaces, curated content, expert guidance, and scholarly communities.

Showcase physical and digital content and activity by and at Tech.

Inspire users to create new scholarship and allude to "what's next."

Help people carry out their visions and proactively uncover needs. The Library is not just about its spaces and collections, but is driven by its people and their expertise and knowledge.

Bring people together from across campus to share and collaborate. Connect them to communities around the world.

strategies

Conversations with Library leadership and staff have identified several challenges as well as strategies to forming the new library. To name a few, it will be a challenge to re-frame the library for (non-)users and to draw them in (especially if they view the Library as its collections and see that as being accessible online), and to engage graduate students and faculty when many of their needs are filled in their departments / colleges or online.

- Consider Crosland Tower, Gilbert Memorial Library, and Clough Commons as one complex and complement what the Clough Commons offers (e.g.: more spaces and services for faculty and graduate students in the Library).

- Leverage the organizational culture of prototyping and experimenting to figure out what works best.

- Create spaces that offer users something they can't replicate on their own; for example, theaters have large screens and sound system that movies are best viewed with, and concerts deliver experiences beyond the music / recording itself.

- Make services and expertise more visible, and deliver and push content and services to where users are.

- Distinguish between the Library as an institution vs. the building.

- Make the Library more accessible to visitors.

- Consider how the library will evolve over time, much like landscape grows and changes over time.

- Collaborate with people and organizations across campus to build tools and create programming.

- Stay flexible and on the leading edge, especially with respect to technology.

library storefront

A critical part of the library will be its storefronts in the physical and digital environments. As the first line of contact, the storefronts should engage users and communicate the Library's resources, services, and value to users. Staff envisioned the storefronts to:

Apple Store: consistent branding; showroom

JetBlue: fun, friendly customer service

Craigslist: crowdsourced content

Kindle: 24/7 video support; recommendations

Sporting events: camaraderie

Zoo Atlanta: engages all senses

• Be a one-stop shop with multiple channels of service, such as self-serve kiosks and displays, roving staff, and access to remote staff (e.g.: through video-conferencing or chat). The storefront(s) could be thought of as one experience where physical and digital elements complement one another (e.g.: as in an augmented reality experience).

• Proactively uncover needs without being intrusive

• Orient visitors; point out where to go / what to do

• Be clearly branded and advertised, that refreshes how people view the library

• Be an open-access space – no barriers to the storefront; allows access to the whole library

• Be a place to try things out; a showroom

• Include exhibitions that are interactive and promote serendipity, making new discoveries and connections

• Show what's available and popular in the library, e.g.: gadgets, study rooms, computers, printers

• Integrate fun, whimsy, humor

• Be distributed, e.g.: pop-ups in colleges

external research

There are several topics that have been top-of-mind for the Library since the beginning of (and even before) the research project — how to make services visible, creating a library "storefront," connecting the physical and digital, and supporting serendipitous discovery. To bring further perspective into these topics, we reviewed resources and real-world examples. From this, we learned about trends and changing user needs, and gathered recommendations and strategies. Complete reports and sources can be found in the appendix.

external research: **making services visible**

Users' needs and how libraries are being used are changing. Succesfully making services visible will require aligning service offerings and delivery to users' unique needs and behaviors, building staff's skill sets to meet changing needs, and leveraging people to connect users to resources.

photo: Subhashish Panigrahi

photo: NCLibrary / Guarav

photo: Kim Hansen

Users

- User behavior differs by discipline, level, and co-working approach

- Use tools to push content and services to where users are (physically and digitally)

- Users demand 24/7 access, instant gratification, and 'the answer'

- Test new models for partnering with users to meet their needs, e.g.: monitoring activities in real-time through the LMS

Services

- Emerging needs require new skill sets, so librarians need to identify and train for the changing needs of researchers.

- Re-organize services to be more transparent and user-friendly, and to meet students and faculty in whatever physical or virtual spaces they inhabit

- Marketing should be in-your-face and ubiquitous, demonstrating how library services improve the efficiency and efficacy of scholarly endeavors

Resources

- Get librarians where they are needed - embedded in departments and classes, doing outreach, and using new skills

- Develop discipline- specific tools and just-in-time, point-of-need "quick" tools, such as text and video tips

- Provide research skills sessions at the point-of-need, with content developed in partnership with faculty.

external research: **creating a storefront**

External research on storefronts emphasize that they should quickly adapt to the diverse needs of patrons, give new and returning patrons an instinctive sense of place, and inform users about the services and programs offered at the library.

photo: Duke University

photo: flickr / Elmastudio

photo: University of Michigan

Flexibility

- Users want flexible spaces that can be reconfigured to their needs

- New ways of learning are changing demands for space, e.g.: spaces that support both learning and socializing

Creating a "Feel"

- Library should be seen as a "wunderkammer" or "cabinet of curiosities" where the collections are not static but used for branding and promotion (Aurand, 2011)

- The storefront should remind people of the unique mission of the library and promote interaction among users

- The storefront should engage the senses of a broad audience

Advertising Services

- Signage and arrangement of service points facilitates wayfinding. Digital signage can be informative, entertaining, and inviting

- Print, due its static nature, is often invisible but can still be best for directional signage

- The storefront should be welcoming to get students "in the door" (Blackburn, 2010)

external research: **connecting physical & digital**

Increasingly, information is curated and shared in a hybrid interaction model that combines both physical and digital input.

Digital Gateway

- Providing complementary or more in-depth information about content in the physical environment through a digital interface.

Physical Computing

- Providing digital content that is informed or shaped by what is going on in the physical environment. Physical inputs combine with a digital platform to create a hybrid interaction model.
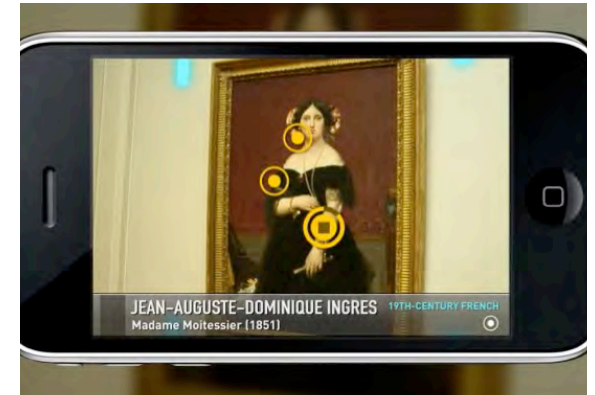
Digital Overlay

- Embedding the physical world with digital triggers or tags (i.e. augmented reality). Similar to physical computing, a hybrid interaction model is created, but in this instance the digital layer acts as the trigger.

external research: **supporting serendipity**

Serendipitous discoveries or encounters can lead to significant progress or breakthroughs. These are a few ways to design for serendipity.

Curation

- Organizing and presenting content is the most common tool for foster serendipity. Tools support both content discovery (e.g.: Google news 'editors picks') or serendipitous connections between people (e.g.: Meetup)
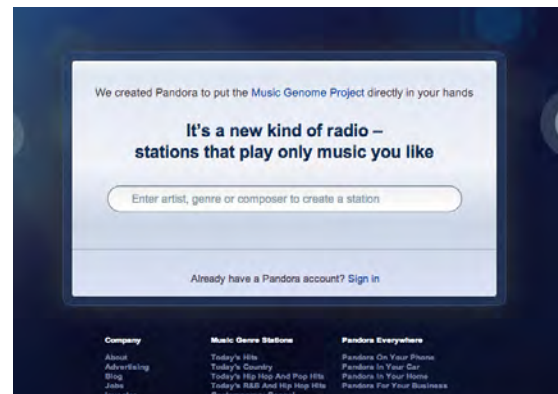
Recommendation Engines

- Providing recommendations based on data mining is another vehicle for serendipitous discovery. Sites like Pandora or Netflix provide users with a constant stream of recommendations and relevant content.
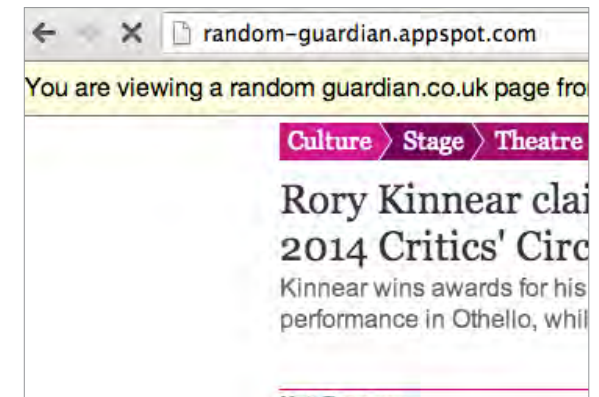
Random Access Tools

- Randomly displaying or sharing content is another way to promote serendipity. The Guardian's website offers a random access tool that displays an article from their archives at random.

next steps

What's to come in Part 2 of the research project.

next steps

Part 2 of the research project will span 3-4 months. In that time, we will continue the research from Part 1 with the User Research Task Force, co-create staffing and service models with Library and Learning Excellence staff, and advise on the architecture design process of the Library.

More breadth and depth

- Engage a wider range of participants for input

- Conduct "deep dives" with users and engage them in longer activities (e.g.: through shadowing them in specific and day-to-day activities; journaling)

- Integrate quantitative methods (e.g.: surveys)

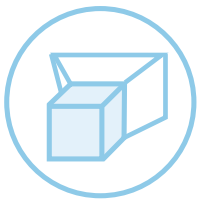- Use library personas to identify areas for focus and innovation and inform library space and service decisions

Co-create library service model

- With L/LE staff, develop the service ecosystem and service experiences of the future library, and use service blueprints to articulate how services they will be delivered through front-of-house and back-of-house

- Advise on staffing roles, skills, and descriptions needed to support new services

- Help plan, implement, and evaluate service model prototypes

Staff experience model

- Complement the user experience model and moments with the staff / service provider side experience model and moments.

Advise on library design

- Advise the design team through review comments and meetings / workshops, with particular focus on the library program

Prototyping / piloting

- Help plan, implement, and evaluate 3 "plays" from the campus playbook

appendix

The appendix includes full descriptions of the personas, research reports, and one-page summaries of each observations period.

◇   library personas

◇   external research reports

◇   observations summaries

library personas

the researcher

PhD candidate in College of Engineering

•Splits time among various research projects within a relatively large group at GT—leads one project and collaborates on 1 or 2 others; presents work to others; collaborates with external groups on large interdisciplinary research projects

•Has scheduled weekly group meetings and a few ad-hoc meetings

Resources:

•Mostly online resources

•Laboratory and office space in department; informal work spaces in department building

Motivations	Behaviors	Needs / Expectations
• Publish a handful of papers and present at a couple of conferences	•Collaborative researcher: solicits input from research group, seeks advice from experts, works side-by-side with others	• Secure study rooms that can be reserved for half day or full day; can reserve less than 24 hours in advance
• Obtain a prominent post-doc position that eventually leads to a tenure-track position at a top university	•Uses the Library for quiet time away from the lab, e.g., writing proposal, papers, dissertation	• Share research data, visualizations, and reports with colleagues outside of GT
• Gain some teaching experience	•Attends software/technology-driven workshops—InDesign, LaTeX, MATLAB	• Poster printing
		• Presentation rehearsal space
	•Teaching assistant for 2 courses over course of PhD	• Access to experts to discuss poster design, presentation skills, teaching tips

the entrepreneur

MS graduate student in Computer Science & MBA program

- Course work in both CoC and CoB; focus on software development
- Has established group for MBA course projects (many work meetings); part of small R&D group in COC (weekly meetings)
- Has a project in development (web system that will match/connect students to corporations); looking to bring to market

Resources:

- Network within and outside of GT
- Management journals for MBA projects
- Coding applications (e.g. Python)

Motivations	Behaviors	Needs / Expectations
• Make first million before 30 • Build interdisciplinary business relationships across the world • Be a thought leader and a innovator in a self-owned cutting-edge software development company	•Always networking to find the next great opportunity •Presents ideas informally in local settings; formally at conferences •Connected 24/7 – Twitter, Facebook, Linked In, text messaging, etc. •Works well with groups - collaborative "group think" approach; able to make everyone feel like they are essential part of group •Voracious reader – journals, magazines, newspapers to stay in-the-know	• Meeting space available on-the-fly; teleconferencing capability • Heavy duty computing power with super-fast web capability, Linux, other open source and/or proprietary software • The next-big-thing in computing world/access to bleeding-edge at GT and beyond • Support for networking via conferences, trade shows, etc • Professional-level guidance getting backing/support for project; patents support

the novice seeker

PhD student in BME

• Working with faculty in BME, ME and MSE on research on heart valve implants; collaborating with Emory cardio-vascular team

•Bi-weekly "all-hands" meetings; daily impromptu lab meetings; Skypes weekly with Emory technicians ; "lives" in the lab

Resources:

•Locates PI-recommended articles from both GT & Emory e-journals

•Searches PubMed and Google Scholar mainly

•Has access to state-of-the-art lab at both Emory & GT; office cubicle in lab; uses PBL rooms for brainstorming sessions

Motivations	Behaviors	Needs / Expectations
•Take advantage of what's available	•Asks for help "just-in-time"	•Ways / channels to find what is needed effectively and efficiently
•Completing their project / thesis / dissertation (deliverables in general) and getting the help needed	•Watches tutorials on Youtube	•Help at point of need, 24/7
	•Posts on Reddit, blogs and other online help venues for expertise	•Most current version of software and tools; training in what's being used "out there"
•Greater proficiency with software to increase productivity	•Looks for peer advice; Emails or calls subject librarians as one point of contact if peer & self help fail	•Virtual access to training modules / videos and help
•Keeping ahead of the curve, creating competitive advantage	•Heavy Library user (virtual for resources/physical for help & training) but focused on routine – less aware of new offerings	•Personalized training – directly applicable to needed context
	•Finds out about workshops from faculty or peers – attends several per year, when relevant	•Better search tools and strategies (e.g. Web of Science database)
		•Help with writing, and understanding IP & copyright

the conductor

PhD candidate in Public Policy

- Splits time among leading research projects with a small GT group, working independently, presenting work to others, and collaborating with external groups to design research projects
- Has scheduled weekly meetings and many ad-hoc meetings

Resources:

- Mostly online resources
- Meeting rooms in Clough; informal work spaces in dept. building

Motivations	Behaviors	Needs / Expectations
• Make impact on science and technology policy in Georgia • Lead research group effectively and inspire them • Build strong working relationships with external partners	•Collaborative researcher: solicits input from research group, seeks advice from experts, works side-by-side with others •Available all the time – has 1-2 ad-hoc meetings per day (virtual, in-person); always on chat; answer emails quickly •Shuttles between research projects off-campus and working on-campus (a "home base") •Concentrates on independent work at home	• Bookable meeting rooms with teleconferencing and ability to present / share screens for meetings with external partners • Project rooms where team can work together for a day or two, e.g.: to flesh out details for the next research project • Platform for managing research projects with team • Share research data and reports with collaborators

the designer

Graduate student in College of Architecture
Splits her time among lecture style classes but spends overwhelming amount of time in the design studio completing assignments, drawings, projects, models

Resources:
•"Special Collection" of curated print & virtual resources
•Architectural drawings & plans in print books and journals , that are not available online
•High resolution scanners nearby the print collection

Motivations	Behaviors	Needs / Expectations
•Desire to improve the world •Seeks to develop new ideas and solutions to complex problems •Seeks inspiration to enhance idea generation and creativity	•Literally lives in their studio space, does very little school work in dorm or at home •Occasionally, pulls all-nighters in the studio, especially around the final review time •Architecture school is very competitive and stressful •Spends most her time in Hinman graduate studio, but also COA buildings and the architecture & design library	•Close physical proximity to the arch/design library and 24 hour access to the resources •Safe spaces & comfortable furniture to relax •24 hour access to food and coffee •Training to improve presentation skills for jury review "crits" •Adequate/safe studio space with lockers (Hinman provides)

the futurist inventor

Associate Professor in School of Interactive Computing

•Shaping the future, one student at a time

•You'll find him/her here: labs, airplanes, Google Hangouts, TED conferences, Twitter, buying Octane coffee to-go, Asia, in transit

Resources:

•Anytime, anywhere, ubiquitous information

•Spaces, funding, and services to help him inspire innovation's next generation

Motivations

•Creating the future, making a forever impact, sharing his excitement about the next century with everyone he meets

•Prototyping not the next big thing but the thing that will be big 5 years *after* the next big thing

•Nurturing students who are better than he/she is—nextgen thinkers

•Believes in both commercial enterprise and open source/access

•Making life 4-D

Behaviors

•Collaborates constantly with other faculty, innovators from industry, and thought leaders from government and thinktanks, on academic and commercial projects

•Beyond busy: can't respond to emails because he/she receives so many; frequently spends weeks in two different time zones

•Gadgets are additional limbs: wears, depends on, and *loves* them; lives in a smart home

•The digital feels physical and inspirational; doesn't distinguish between physical and digital—it's all just information

Needs / Expectations

•Collaborative Spaces /Equipment /Interactions: makerspace lab, where he/she can use equipment, collaborate with faculty and students, and where space is experimental and ever-changing

•Display Spaces: Library as "Visibility Machine": exhibits GT innovations and broadcasts them to wider world

•Services: Cloud platform for collaborations w/ GT and external partners; relies on librarians to synthesize trending info and preserve his research for the future

•Collections/Services: 110% searchable, browseable, anywhere access to journals, books, videos, data, code, social media, etc., on any device

•Library as a "neutral space"

•Space where spontaneous interaction can take place ("playground magic")

the expert connector

Joint Professor, Public Policy and Industrial and Systems Engineering

•Embodies the experienced, passionate, professional academic

•You'll find her/him here: faculty meetings, fundraising luncheons, national policy advisory board summits, on email at 2 a.m., pausing to share advice with a student outside Highland Bakery. Often trying to inspire other faculty and administrators around a shared vision for innovation in teaching and learning.

Resources:

•Mostly online journals

•Studio classroom, MOOC equipment, Faculty Salon, meeting rooms

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Motivations

•Maintain department's #1 ranking

•Find time to teach special seminar and MOOC outside of vast administrative responsibilities

•Hire superb faculty; attract best students

•Give back by sharing wisdom and mentoring the next generation of leaders

•Passionate about advancing the role of women in engineering

•Motivated by flipping the classroom

•Motivated by engaging with undergraduate and graduate students on a personal level

•Building consensus and a shared vision

Behaviors

•Frequently on-the-go, collaborating with other departments, fundraising with alumni, keynoting at international conferences, talking with press, making administrative policy, leading departmental meetings

•Always on email and makes a point to respond within 72 hours; relies on laptop/iPad

•Teaches 1 seminar each semester and was selected to pioneer one of GT's first MOOCs

•Highly engaged with undergraduate students

•Creative "go-getter" full of ideas and energy

•Views the Library as an academic partner and as the go-to experts for research and information.

Needs / Expectations

•Collaborative Spaces/Interactions: meeting rooms for efficient, rewarding in-person or virtual meet-with-an-expert mentoring sessions with students

•Spaces/Services: Library should help attract top-tier students and faculty to GT

•Teaching Spaces/Services: embedded librarians support first-year honors seminar in library's problem-based learning studio

•Equipment/Spaces/Interactions: uses lightboard room for recording renowned MOOC & stops by Faculty Salon afterward to mingle with old friends from other depts.

•Services: relies on cloud collaboration/ preservation tools for admin work & research

the tenure-track junior faculty

Assistant Professor of Electrical Engineering
•Passionate about research and is driven to prove him/herself
•Still learning to juggle the many balls faculty members have in the air
•Seeks a streamlined search experience but still wants to "dive deep"

Resources:
•Online databases to access electronic journals and conferences. Uses ILL when items not immediately available.
•Collaborative spaces to practice presentations

Motivations	Behaviors	Needs / Expectations
• Earning tenure is always looming in the back of mind	•Uses databases to find full-text journal and conference articles	• Needs full-text literature available at office or lab
• Wants to establish a good reputation for self and lab	•Meets regularly with graduate students both as a group and individually	• Needs space/equipment to practice presentations; for grad students as well
• Driven by the discovery of new practical applications, especially those that benefit society	•Juggles research and teaching	• Wants library to teach graduate students how to find and use relevant literature
• Wants to inspire future researchers, and pines for opportunities to connect with colleagues across campus	•Grants fund research projects	• Needs space to host workshops
	•Continually shepherds graduate students in writing articles and making presentations	• Creates lots of data but struggles with managing it effectively
	•"Early Adopter" with new research tools	• Emory databases would be nice
	•Supports Open Access	

the progressive traditionalist / thinker

Faculty member in Literature, Media, and Communication

- Splits time between teaching, advising graduate students, going to meetings with colleagues, collaborating with colleagues on this and other campuses, working on personal research and writing, writing grant proposals

Resources:

On-line journals and databases; other on-line resources; books; reference materials from the Library; printed textbooks; special collections

Motivations	Behaviors	Needs / Expectations
• Exploring the relationships between science, tech, and society	•Interested in virtual browsing, wants to replicate experience of serendipity, browsing; but sad about the loss of books	•Needs collaborative spaces for collaborative work and virtual meetings, but also requires quiet space for individual work
• Performing cutting-edge research	•Makes use of special collections (sci fi, rare books) – need for classroom space in archives; need for retaining archival collections here	•Library as "inspirational space"- beautiful surroundings inspire
• Assisting and mentoring graduate students		•Technological tools/cloud collaboration tools essential to success
• Instilling a sense of discovery in students	•Supervises multidisciplinary group projects – important to foster intersection of humanities and technology	•Print books remain relevant and needed (materiality, library-research driven term papers)
• Leveraging Emory partnership to improve outdated collection (monographs and databases)		•More complete/broader access to databases and e-journals required

archives persona: **the cutting-edge educator**

Image source: Travis Brown on Flickr, CC BY-NC-SA 2.0, http://www.flickr.com/photos/travisbrown/8368181992

Postdoctoral Fellow in School of Literature, Media, and Communication

- He is the future of humanities teaching and research
- You'll find him: Tweeting about THATCamp, interviewing at MLA conference, hacking Google Ngram Viewer, faculty advising the digital poetry club over Antico pizza, in costume at DragonCon, attending book release parties at the Goat Farm, on Twitter again

Resources:

- Science fiction books and zines, digital special collections, open access humanities and digital pedagogy journals, hacker meetups, Reddit

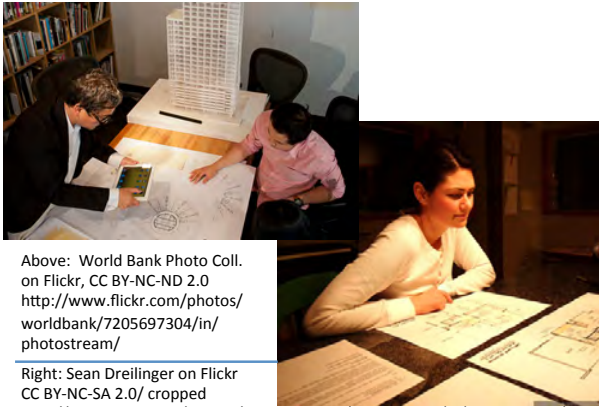| Motivations	Behaviors	Needs / Expectations
• Win digital pedagogy award from national digital humanities organization	• Teaches at least three undergrad seminars/semester, tutors in communication center 10 hours/week, attends intensive digital pedagogy workshops 2 nights/week	• Large instruction space in Archives, with touchscreens, projectors, digital workstations, and collab space, where he can partner with archivists to teach classes based on special collections; Archives reading room should support the integration of digital and traditional research tools and processes
• Land a position as assistant professor of digital humanities at a top university within next two years		
• Inspire students to be creative, savvy, multimodal communicators, as comfortable with snapchatting as with writing research papers	• Constantly seeks fresh, innovative ways to make learning fun: gamification, hacking, sci fi classes, Legos, hands-on activities with primary sources	• Sci fi collection must stay on campus; he and his students love digital archives but also need to smell & touch the real, material thing
• Obtain coveted Royal typewriter & Apple II for personal collection of obsolete tech	• Uses tech to flip the classroom: class blog, social media, T-Square, multimedia assignments	• His dream: partner w/ archivists to build retrocomputing lab, available to anyone who wants to tinker with old hardware/software
• Finish book chapter about digital materiality and blog post about using virtual machines for digital history research	• Partners with archivists every semester on a new hybrid analog/digital class sci fi project using special collections	• Wants to archive student work and donate one of his digital art installations
	• Psyched about Library renewal project	• Needs software to curate, mine, and publish his humanities research data

archives persona: **the architectural historian**

Above: World Bank Photo Coll. on Flickr, CC BY-NC-ND 2.0 http://www.flickr.com/photos/worldbank/7205697304/in/photostream/

Right: Sean Dreilinger on Flickr CC BY-NC-SA 2.0/ cropped http://www.flickr.com/photos/seandreilinger/4004821867/in/photostream/

Faculty member in College of Architecture; professional architect; architectural researcher

- Teaches historic preservation architecture courses with both graduate and undergraduate students; architectural research for contract or personal use; creates new spaces and/or adaptions of old spaces; professional architect or working with professional architect

Resources:

- GT Design Archives collections; databases; Georgia Tech historical materials; digital special collections; staff expertise

Motivations	Behaviors	Needs / Expectations
• Producing high quality, thorough, research	• Comfortable performing initial research on own at Internet search level (Google) and GT Archives search level (home page), but relies on staff expertise for in-depth research	• Reproduction of text and images, particularly oversized architectural drawings
• Training students to engage with primary sources for historic preservation research		• Ability to access wide spectrum of resources (physical - digital)
• Instructing students in best practices of research and research skills	• Creates legally required reports on historic buildings before renovation or demolition	• Larger Archives space that unites the physical and digital; space that accommodates architectural drawings
• Designing spaces that honor history while aligning with current needs	• Uses GT Archives for research and as vital teaching component	• Continued good customer service and knowledgeable staff
	• Most new projects must start from scratch, new projects rarely build on previous research	• One seamless access point for architectural collections
		• Growth of collections and resources

archives persona: **the sustainer**

Image source: Miller Center on Flickr
CC BY 2.0 / cropped
http://www.flickr.com/photos/miller_center/867229283/

Faculty member in School of History, Technology, and Society
• Splits time between undergraduate and graduate teaching and advising, collaborating with colleagues in HTS and other disciplines, working on personal research and writing

Resources:
Utilizes Georgia Tech Archives in teaching, especially Georgia Tech historical materials, GT Design Archives, and collections of Southeastern textile mills

Motivations	**Behaviors**	**Needs / Expectations**
• Exploring the relationships between science, tech, and society	• Has partnered with Archives professionals for 15 years, to create class sessions and projects that are meaningful and instructive for students	• Close, hands-on access to GT Archives materials on campus – access to "the real thing"
• Assisting and mentoring undergraduate and graduate students	• Makes significant use of historical materials in GT Archives as essential teaching tools	• Continued expertise of Archives professionals for customized assistance with class projects
• Instilling a sense of discovery in students	• Supervises multidisciplinary group projects – important to foster intersection of humanities and technology	• Increased reading room space for class visits to Archives
• Making use of historical materials to teach students about current and future world	• Values expertise of Archives reference personnel	• Increased funding for further growth in special collecting areas

archives persona: **the student assistant**

Image source: LWY on Flickr, CC BY 2.0, http://www.flickr.com/photos/lwy/2076392065

Fourth Year Undergraduate Student in History, Technology, & Society

•Proud history nerd

•You'll find him: Arranging and describing archival collections of manuscripts and photographs, Wikipedia-ing GT alumni, spending quality time with the book scanner, uploading files to GT's institutional repository, using Spotify, presenting at undergraduate research symposia, pulling all-nighters in Clough before grad school app deadlines

Resources:

•Archival collections, SMARTech, Wikipedia, e-journals, databases, T-Square, EndNote, GoogleDrive, DropBox

Motivations	Behaviors	Needs / Expectations
•Decide whether to enroll in historic preservation graduate program or library school	•Visited the GT Archives twice for class projects and then applied to be a GT Archives Student Assistant; has been working at GT Archives for two years	•Large instruction space in Archives, with digital workstations & group project space
•GT1000 visit to GT Archives inspired him to consider archives and libraries as a possible career path	•As a Student Assistant, works on both physical collection processing and digital projects involving digitization and GT's institutional repository	•Reading room that's both functional and comfy, so that his sci fi-obsessed friends feel welcome to linger in the space and read books for fun
•Inspired by hands-on encounters with primary materials but also loves spending time mining online archival collections	•For work and research, relies on: laptop, smartphone, scanners, archival collections, academic journal databases, historical newspaper databases, Google searches, citations in Wikipedia articles	•Large, secure, quiet processing space in Archives office area, with tables for arranging and describing large format collections, computer workstations, and scanners
•Successfully juggle senior seminars, research assistantship for HTS faculty advisor, student assistantship with GT Archives, grad school apps, and sleep	•Serious, dedicated, meticulous student; motivated to succeed and to make a lasting impact	•Wants continued access to physical collections: being in close proximity to physical books and artifacts makes the research process pleasurable and authentic
		•Wants simple, one-stop-shop, searchable and browseable access to Library catalog + digital collections + ILL—on all devices, all the time

external research reports

making services visible: themes

Three major themes are impacting "Making Service Visible/Tangible" for an academic/research library.

Users

Users differ by discipline, research needs, and learning styles. Libraries deliver proactive services and collaborate with faculty and students to best meet their needs.

Resources

People are a library's best resource. They help connect users to the best information and to the tools needed for outstanding teaching, learning, and research.

Services

Library services which help our users navigate the complex world of information, need to be highly visible and flexible to meet the ever-changing needs of faculty, students, and researchers.

making services visible: **questions & implications**

Theme	Questions	Implications
Users	What type of users do we have? • Undergraduates • Graduate • Faculty • Researcher • Visitors literate and non-information literate • Mixture of students that know they need help and do not ask • Mixture of cohorts including student veterans and 1st generation students	• How and when to push services to users • How to make users aware of the value of the library and its services • How to be inclusive and meet the needs of each
Services	What is the best way to make services visible?	• With a bookless library, how to retain the libraries importance in teaching, research and learning • Large signage on service "desk" • Marketing campaigns /in-your-face advertising • Web page design
Resources	How to get user community to the needed resources in their subject area?	• Visibility of research/class guides • Subject librarians co-located and very visible/Knowledge Navigators • Marketing of subject librarians • Flexibility of subject librarians to respond to their disciplines, emerging researcher needs and emerging technologies

making services visible: **users**

Users differ by discipline, research needs, and learning styles. Libraries deliver proactive services and collaborate with faculty and students to best meet their needs.

User Differences

User behavior differs by discipline, level (e.g. grad vs. undergrad, researcher vs. student), and co-working approach ("learning-freak" vs. "I wanna share it-geek"). (Connaway, 2010; Knight, 2012; Bilandzic, 2013)

Marketing to Increase User Awareness

Use as many tools as possible to push content and services to students where they are, such as their LMS or class forum. To build library awareness on campus the university should help provide "marketing support to help raise status of librarians and the library value." (Knight, 2012; McCreadie, 2013; Yi, 2013)

Meeting User Demands

Users demand 24/7 access, instant gratification, and 'the answer'. "Proactive services" not only include innovative or preemptive services but also those that best meet users' needs. (Connaway, 2010; Magi, 2013)

making services visible: **users**

Users differ by discipline, research needs, and learning styles. Libraries deliver proactive services and collaborate with faculty and students to best meet their needs.

Collaborating with Users

New models for partnering with faculty and students to meet their needs. For example, monitoring course activities real time through the LMS. (Fitzpatrick, 2012; Alexander, 2011)

making services visible: **services**

Library services which help our users navigate the complex world of information, need to be highly visible and flexible to meet the ever-changing needs of faculty, students, and researchers.

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New Skill Sets

Emerging needs require new skill sets, so librarians need to identify and train for the changing needs of researchers. Better campus partnerships are needed to identify the critical areas. (Auckland, 2012; Fitzpatrick, 2012)

Flexible Services

Changing needs will require re-conceptualized service models and expanding tool sets. Re-organization of services to be more transparent and user-friendly meets students and faculty in whatever physical or virtual spaces they inhabit. (Alexander, 2011; Knight, 2012)

Demonstrating Value

How libraries are being used is changing, and librarians must try new ways of reaching their users. Marketing should be in-your-face and ubiquitous, demonstrating how library services improve the efficiency and efficacy of scholarly endeavors. (Henry, 2011; McCreadie, 2013; Yi, 2013)

making services visible: **resources**

People are a library's best resource. They help connect users to the best information and to the tools needed for outstanding teaching, learning, and research.

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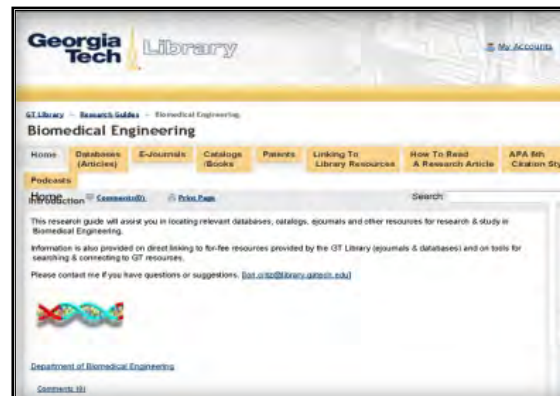
By Gabbyly (Own work) [CC-BY-SA-3.0 (http://creativecommons.org/licenses/by-sa/3.0)], via Wikimedia Commons

People

Getting librarians where they are needed - librarians in departments, embedded in classes, doing outreach to learning communities, developing and using new skills such as data curation.   (Connaway, 2010;Tumbleson, 2010; Auckland, 2012; Alexander, 2011)

Tools

Develop discipline specific tools, including subject and course guides. Just in time, point-of-need "quick" tools, such as text and video tips. (Knight, 2012; Fitzpatrick, 2012; Tumbleson, 2010)

Instruction

Research skills sessions at the point of need.   Instruction content developed and implemented in partnership with faculty. (Tumbleson, 2010; Fitzpatrick, 2012)

storefront: external themes

Three major themes are impacting "Library Storefronts" for academic/research libraries of tomorrow.

Flexibility

New, flexible spaces that enhance student achievement and develop student engagement.

Creating a "feel"

Library storefronts should give new and returning patrons an instinctive sense of place; they should feel that they are in the library, a space of contemplative scholarship and intellectual exploration.

Advertising services

Library storefronts can inform about the services and programs offered by the library while making them easier to locate.

storefront: **questions & implications**

Theme	Questions	Implications
Flexibility	How can library storefronts reflect a building that is flexible enough to meet the changing needs of the institute?	• Space should be able to quickly adapt to multiple needs • A sense of "permanent flexibility" in design spaces • Spaces should be able to meet the diverse needs of our patrons • Keep in my that changes in technology may alter the way spaces are used
Creating a "feel"	How can the library's storefront adequately create a "library" feel even with the drastic changes to the physical library?	• The storefront helps create the library brand • Meet the user where they are • Creating scholarly spaces including many which are appropriate for group work
Advertising services	How can storefronts let patrons know the services and programs available in the library?	• Letting patrons know what is in the building • New and enhanced wayfinding • Immediate help for patrons • Help students and faculty feel like the services are for them

storefront: **flexibility**

New, flexible spaces that enhance student achievement and develop student engagement.

Variety of Uses

Users want "flexible spaces that can easily be reconfigured to serve a variety of uses." (Hendrix, 2010; CS&P Architects, 2013; Bilandzic, 2013)

Individual/Collaborative Spaces

The demand has increased significantly for individual and shared learning and study spaces; "Blurring of the distinction between social interaction and learning." (CS&P Architects, 2013; Bilandzic, 2013)

Changes in Digital Needs

Digital learning has become a group activity; "Important to provide social spaces where students work together." (Hendrix, 2010)

storefront: **creating a "feel"**

Library storefronts should give new and returning patrons an instinctive sense of place; they should feel that they are in the library, a space of contemplative scholarship and intellectual exploration.

Creating Brands with Physical Collections

The library should be seen as "Wunderkammer", "or a cabinet of curiosities…" . The physical collections should not be thought of as a static collection of items, but as tools for library branding and promotion. (Aurand, 2011)

Inviting All Types of Users

The library storefront should engage the senses of the broadest numbers of patrons; from social "net workers" to serious scholars. (Bilandzic, 2013)

Identifying the Mission

The library storefront(s) should stand as reminders of the unique mission of the library on campus and should promote increased interaction among information seekers. (Ellis, 2013)

storefront: **advertising services**

Library storefronts can inform about the services and programs offered by the library while making them easier to locate.

Layout

Just as in a store where the layout helps customers find their way from the storefront to the product they are looking for, the library's layout including signage and the arrangement of service points "facilitates wayfinding." (Hahn, 2011)

Signs: Print vs. Digital

Digital signs running PowerPoint slideshows or iMovie videos can be informative, entertaining, and inviting all at the same time. Print, due to it's static nature is often invisible. However, print is still best for some directional signs. (Barclay, 2010; Larson, 2010)

Inviting

Academic Libraries are trying to include areas that students will want to use. The storefront should portray a welcoming atmosphere to get the students "in the door." (Blackburn, 2010)

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observations summaries

library: **Ground Floor LEC**

Groups collaborate in the café and classroom space

Time: Tues Dec 3, 2013 @ 10:00 – 11:00am

Level of activity: Low – Medium (use increased by 11 / 11:30)

Description of space:

- A combination of a number of spaces, including: café / vending area with hard seating and tables, classroom with high table, grouped seating, collaborative 120 degree tech stations and soft seating near low shelves
- Classroom space appears branded / owned, but is open to informal use when class is not in session

Most interesting observation / thought: The frequent circulation around the space does not seem to disrupt individuals studying, but this area is likely better suited for lively collaboration as a result of the traffic and noise

Activities and patterns observed:

- Individuals studying on stations or at laptops – some gaming, some texting on phone, some printing and some doing focused study
- Groups working at stations or side-by-side, with frequent conversation and collaboration
- Short duration group work and individual work in the café area – mostly on laptops, while in transit

Activities well-supported and why:

- Individual, spread out work at stations
- Group work at the high tables in the classroom (outlets handy, large space to collaborate)
- Group work in the café (can rearrange tables to accommodate larger groups)

Activities poorly-supported and why:

- Collaboration at the 120 degree stations (individuals had to stand up, walk around or talk over the dividers to collaborate)

Questions raised:

- How do spaces adapt to changing use throughout the day and semester? (I came back to the café space an hour later and it was entirely full)
- How can computer collaboration with 2+ students be better supported?

Other take-aways:

- The usage of the space changes greatly throughout the day in a number of ways (informal collaboration to class sessions, individual computer work to group work, etc.)
- Individuals often sit at larger tables, spreading out to "own" tables
- Harder seats with tables seem to be more frequently used than soft seating

library: **LEC Collaborative Computing**

<Caption>

Time: Tues Dec 3, 2013 @ 10:15 – 10:30am

Level of activity: Low

Description of space:

- Mix of 120º and linear tables with dual monitors at each station; print / copy, adjacent to science fiction reading area, informal / flexible work area, and another collaborative computing area (with single monitors)
- Intended for more side-by-side or small group work
- Data and power ports built into the workstations

Most interesting observation / thought: How the group of 3 students oriented themselves in order to collaborate and all work on dual monitors

Activities and patterns observed:

- Of the 7 people observed in the space, ~2/3 were using the 2nd screen
- Most was individual quiet work
- One group was occasionally collaborating: 3 people had set up such that they could turn around to talk to one another or peek across workstation dividers; each was working on dual monitor – modeling, desktop research
- Printing

Activities well-supported and why:

- Dual monitors support working on two applications at a time because each one can be on a monitor, e.g.: watching a video + taking notes
- Side-by-side work: 120º tables enable 2-3 people to gathering around the monitors, and workstations along the linear tables are spaced out
- Creating visual privacy: dividers block views of other people when seated

Activities poorly-supported and why:

- Working side-by-side could be difficult if both people need dual monitors: the distance / barriers between workstations lessen the ability to see everything all at once. In these instances, laptops might be used in lieu.

Questions raised:

- What assignments / work do students need desktop computing and dual monitors to do well?
- How does designating the space as collaborative computing affect its use? (e.g.: versus 1st floor computing)
- When are the data / network ports used?

Other take-aways:

- None

library: **LEC informal work area b/w collab. comp. areas**

<Caption>

Time: Tues Dec 3, 2013 @ 8:00 – 8:20pm

Level of activity: High

Description of space:

- Busy atmosphere, with noise in selected areas – brings to mind "alone, together" though there was chatting going on
- Somewhat dark (neither positive or negative)
- Movable semi-circle tables + one round 6-person table: semi-circular tables were all separated and distributed along perimeter + center

Most interesting observation / thought: <text>

Activities and patterns observed:

- Side-by-side work (3 pairs) and small group work (3 groups of 3)
- At groups, individuals were mostly working independently – for example, in one group of three, 1 was napping, another was working with headphones, and another was chatting with student that dropped by
- Lots of paper / textbooks spread out (definitely more than in morning observations)
- Some food, coffee containers / remnants

Activities well-supported and why:

- Spreading out – lots of students were doing this, and half-circle tables were large enough for 2 people and their materials
- Side-by-side work: as above, furniture is a good size and can be moved anywhere within the space. In the space it was "quiet" enough to have conversations with a peer while not feeling as if you're bothering others

Activities poorly-supported and why:

- Concentrated work requiring more than headphones quiet: unpredictable when / where there might be noise

Questions raised:

- What's the culture of nighttime or Dead Week studying? How do groups and friends plan where they're going to study?

Other take-aways:

- None

library: **Ground Floor Multimedia**

Side-by-side collaboration at larger computer stations

Time: Tues Dec 3, 2013 @ 12:00 – 12:30pm

Level of activity: High

Description of space:

- Small, enclosed space that supports a range of activities involving specialized technology, including: open lab / workstations, large format printing, group computer workstations, recording room, and staff / service areas to support use with technology
- Space is not accessible without a card, and likely has restricted hours

Most interesting observation / thought: Because of the specialized technology in the space, this space seemed to feel more "owned" by specific students, and less utilized by other students. One student, who was printing a poster for class, mentioned that he had just discovered the space a week ago.

Activities and patterns observed:

- Printing before class, supported by staff at the service desk
- Individual work at open workstations, punctuated by some conversations (about classwork or socializing)
- Group work at larger stations, 2 – 4 students at each station, working on the desktop terminals as well as on their laptops

Activities well-supported and why:

- Group work on specialized programs, over longer periods of time
- Independent classwork done side-by-side with classmates, allowing for informal conversation and support to other students

Activities poorly-supported and why:

- Quiet, focused, individual work without headphones (space was very lively, and noisy)
- Stations at open lab portion seemed close together, so side-by-side support from a staff member may be challenging when the entire lab is full

Questions raised:

- How is teaching and learning of new technology supported, both formally and informally? Does this space support formal training as well as informal?
- What percentage of the student population is aware of the space? What portion of that group makes use of the space? How is use encouraged through specific curricula or projects?

Other take-aways:

- The space was extremely busy and full, with hardly any open seats, causing some students to have to wait for a machine
- A number of students were using the printer at once, causing the staff member supporting the space to have to move between the service desk and the printer numerous times, leaving the desk unattended

library: **integrated service desk**

Students getting help at service desk

Time: Tue Dec 2, 2013 @ 10:00 – 11:00am

Level of activity: Low

Description of space:

• Service desk seems very much like a "pass through" space. More of an extension of the entrance than an area of service delivery
• There is an L shaped service desk with 5 staff stations, 3 holding shelves behind the desk, and some mixed soft and table seating in close proximity to the desk
• The intended uses are for circulation, IT, and reference

Most interesting observation / thought: There was consistent activity at the desk, but never more than two patrons getting help at one time. And it seemed as if every service provided was either locating a book in the stacks or retrieving a book on hold.

Activities and patterns observed:

• Checking out books, retrieving materials on hold, getting help locating books, and checking out computers were the main activities that student
• There was several groups of 2-3 students working and socializing in the mixed seating area near the desk

Activities well-supported and why:

• Accessing materials was well supported. In the form of both identifying where a book is located in the stacks/library and loaning computers.
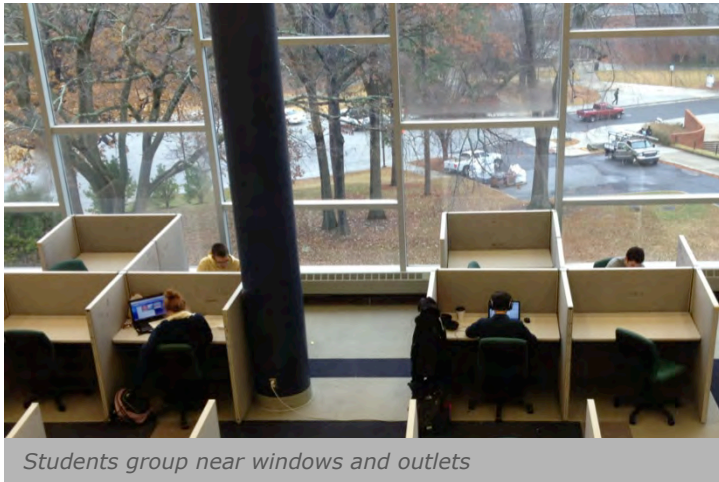
Activities poorly-supported and why:

• There was no reference activity going on.
• Side by side consultation was not supported. Staff members had to turn their monitor so that patrons could see what they saw on their screen.

Questions raised:

• Where do reference consultations happen?
• Was this peak activity? Was this activity low because of finals?
• Were students able to easily find the materials that they identified at the desk? Did they need any more help finding materials?

library: **3rd floor, Quiet Area**

Students group near windows and outlets

Time: Tues Dec 3, 2013 @ 11:00am – 12:00pm

Level of activity: Medium

Description of space:

- The third floor is a mix of individual study carrels (two different designs, both of which feel well used and worn) and newly installed individual and group seating
- The spaces is entirely open, as well as open to above, and is bordered by numerous circulation paths (elevators, stairs)

Most interesting observation / thought: This space, more than others, is highly devoted to quiet / silent, focused individual study. However, students here were occasionally in groups and/or multi-tasking (eating, on phone, watching TV or listening to music while working). It seems that laptops are often an important part of studying, even if they're not being used to do work.

Activities and patterns observed:

- Individuals studying on paper, on laptop, or on both (also using cell phones, eating, and reading)
- Individuals "saving their space" by leaving belongings spread out while gone
- Groups coming to be "alone together," sitting at neighboring carrels or tables and talking occasionally

Activities well-supported and why:

- Individual, quiet study – including spreading out with many materials over longer durations of time

Activities poorly-supported and why:

- "Alone together" group work, where conversations disturb others
- Quick breaks to talk on the phone or chat with friends
- Long duration study on laptop (because of lack of outlets)

Questions raised:

- Is this space (and this type of working and learning) often done for long durations? Or do students do short-term focused work here as well?
- Is there a specific type of research and learning activity that is best supported by this space?

Other take-aways:

- Students group near the outlets, with all carrels near columns in-use
- The new furniture in the space encourages interaction and noise (moving stools, talking) that is in conflict with the space
- Student interviewed said she used the space to help her concentrate in studying for finals

library: **stacks**

carrels and study rooms in stacks

Time: Tue Dec 2, 2013 @ 12:00 – 1:00pm

Level of activity: Low

Description of space:

- Open stacks with a mix of individual study carrels, table seating, and individual study rooms.

Most interesting observation / thought: With the exception of one "cluster" of user seating, there was only one student per "cluster". Whether in open table seating or in carrels, the grouping of seats/seating was occupied by a single person.

Activities and patterns observed:

- Individual concentrative study
- Spreading materials out on the table top.
- Conversation at the end of a row of stacks.

Activities well-supported and why:

- Quiet study. The stacks are isolated and quiet with several seating options.

Activities poorly-supported and why:

- Collaboration. The break out rooms were only large enough for one person.
- Pro-longed study. The stacks have little natural light and not particularly "fresh" air.

Questions raised:

- How did this traffic relate to normal patterns of use throughout the semester?

clough commons: **Clough Stairs & Balcony**

Time Wednesday Dec 4, 2013 @ 11:10 – 11:30am

Level of activity: Low

Description of space:

- Open area with stair seating and soft seating on the floor and on the balcony above
- Stairway and foot traffic
- Large windows with lots of natural lighting

Most interesting observation / thought:

We talked with the student about the renewal plans and that books would be relocated for a re-imagined space in the new library. Student said they didn't personally use books but wondered about what students would do if they needed quick access to books. He asked if there was a way students could browse or read the books online.

Activities and patterns observed:

- Most people working individually (a couple of clusters of students).
- A few people napping or resting and a few people eating or drinking.
- Most people had laptops and a few were using mobile devices.
- Only a few people were using outlets to power/charge their equipment.

Activities well-supported and why:

- Easily accessible open seating.

Activities poorly-supported and why:

- Group activities.
- Some body language and the prevalence of individual work may indicate that this is a more transient "stop-over" space instead of a place where people "camp-out" for longer periods of time.

Questions raised:

- Does the activity in the space change depending on traffic, volume or time of day?
- What websites or applications are they using on their laptops when in the space?
- Student interview follow-up. Too late for this, but would have been interesting to see what library resources (print or online) the student did use since they did not consider themselves book-centric.

Other take-aways:

- Student interviewed said the space is not too loud or too quiet, seating is good, lots of light.
- Student interviewed said the space was good to take a break or get stuff done before class. Going to the library was good when you needed to concentrate and really study.

clough commons: **Clough stairs**
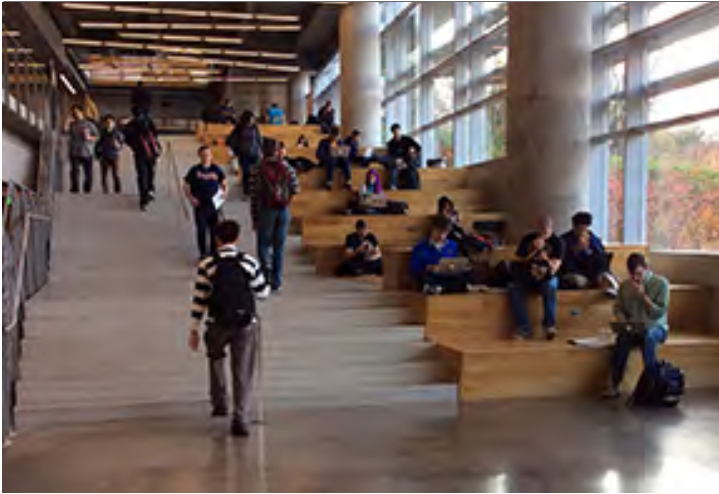
Time Wednesday Dec 4, 2013 @ 11:10 – 11:25am

Level of activity: low

Description of space:

- Volumes of light
- Next to 300 person auditoria
- Close to nature

Most interesting observation / thought: Student interviewed referred to the Library as his "second house"

Activities and patterns observed:

- Clusters on the steps – meet-ups (quick interactions)
- Soft seating more for individuals, some napping
- Laptop and mobile device use (only a couple charging devices)

Activities well-supported and why:

- Comfortable seating to relax a little before moving to the next thing
- It seems that groups move out of the classroom and compare notes or make plans to meet later to work as a group. The volume of the space allows people to step to the side and pull out a device to compare schedules and set appointments.

Activities poorly-supported and why:

- Student struggled with outlet built into low table

Questions raised:

- Are the low numbers of devices being charged related to the hour of the day?
- I only saw one Starbucks cup, the other beverages were vending machine or from an outlet in the Student Center. So, was the line too long at Starbucks? Do they not like the products offered? Are the products offered price prohibitive?
- What are they listening to when their earbuds are in?

Other take-aways:

- Comfortable temperature – air seems fresh
- "Away from Tech, but at Tech" comment made during interview – Clough feels different than other spaces on campus, it has a newer atmosphere/ vibe. The two students interviewed had just come from class in the IC and commented that the Student Center was too noisy.

clough commons: **stairs**
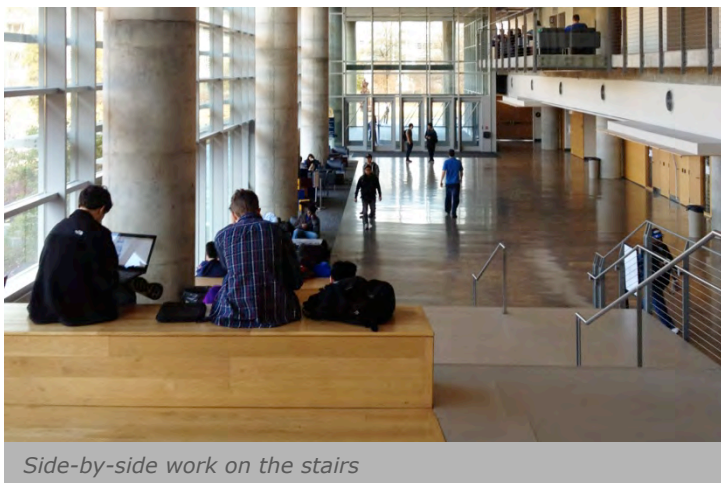
Side-by-side work on the stairs

Time: Wed Dec 4 @ 11:15 – 11:45am

Level of activity: Low-medium – varies with traffic levels and class rotation

Description of space:

- Open, welcoming gathering and spill-out space with fixed seating that supports many activities and group sizes
- Adjacent to two large auditoria, egress to quad, and main circulation staircase

Most interesting observation / thought: This is a hypothesis, but students seem to be highly attuned to the social atmospheres of their study spaces and are constantly evaluating what they absolutely must get done and the likelihood of that occurring when selecting a study space, e.g.: socialize vs. study vs. take a quick break

Activities and patterns observed:

- Side-by-side work on laptops
- Group of 4 sitting across 3 tiers of stairs, all engaged in different activities: eating, casual reading, heads-down reading (headphones in), hanging out
- One individual sitting on "floor" / area between stair steps with laptop, papers spread out

Activities well-supported and why:

- Short-term work, casually working between classes: location, atmosphere, and furniture support dropping-in more than concentrated, long-term work

Activities poorly-supported and why:

- Spreading out – difficult to have more than a laptop and some papers. Two workarounds observed are (1) sitting on the "floor" between groups of stair steps and (2) sitting facing up the stairs and using a step as a table

Questions raised:

- What might be the different study space needs scenarios (e.g.: slightly social with little chance of interruption vs. need a break while keeping in study mindset vs. need complete quiet)?
- How can the furniture / spaces directly outside classrooms affect / support student study behaviors? (e.g.: small breakout rooms vs. open staircase)

Other take-aways:

Interview with group of 4 students (freshmen) revealed:

- they chose Clough because they had classes here and there are people here ("lonely is bad")
- The 2 students working set low expectations for the amount of work they would get done here: read "at least one page" and read 10 pages (but recognized that she wouldn't be able to)
- Students go to the library if they have more time and definitely want to get work done; none however have ever checked out a book

clough commons: **Level 1 Event Atrium & Stairs**
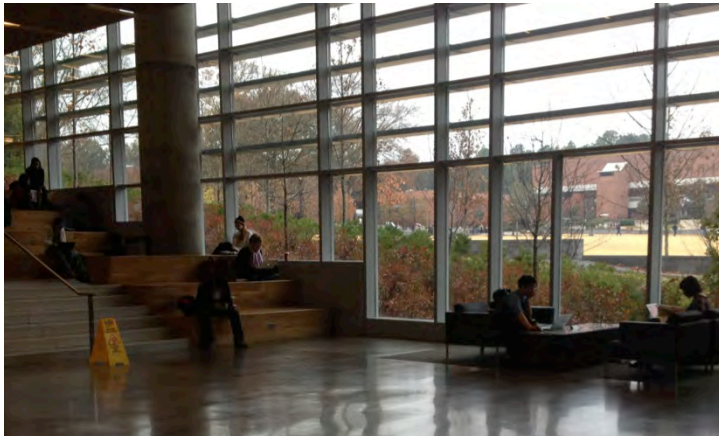
Students study individually and in pairs between classes

Time: Mon Dec 2, 2013 @ 12:00 – 1:00pm

Level of activity: High

Description of space:

- A busy circulation path near auditoriums/classrooms, lined with soft seating and tables as well as a wide wooden staircase (with outlets) for sitting and studying
- Seems to be designed for shorter duration use, either for socializing, studying, or anything in between

Most interesting observation / thought: Several students sat outside the classrooms, or lingered for a few minutes reading papers before entering class or after exiting

Activities and patterns observed:

- Traveling through the space, in pairs or individually
- Individual studying, often on laptop, some eating food
- Group studying, ranging from social to "alone together" on the stairs and on soft seating
- Meeting / gathering with friends, or stopping to chat with friends who are seated in the space

Activities well-supported and why:

- Lively informal group gatherings, with laptops, food and papers
- Space for short duration individual study, e.g. preparing work before class or doing work between classes

Activities poorly-supported and why:

- Given the high volume of traffic moving through the space at times, it may be challenging to do longer term, focused studying in the space

Questions raised:

- How can different types of short duration study be best supported? Are there differences between what individuals doing focused, before-class work need and what groups doing informal work and socializing need?
- What are the most important amenities that spaces along key circulation paths (e.g. between classrooms) can provide?

Other take-aways:

- The primary use of the space seems to be for short duration activities – but those activities can range, even within one group. For example, two students can be seated – one studying, one on Facebook and a third will notice the group, join them and only socialize with them, not studying at all. Activities can be affected by the traffic through and high visibility of individuals in the space.
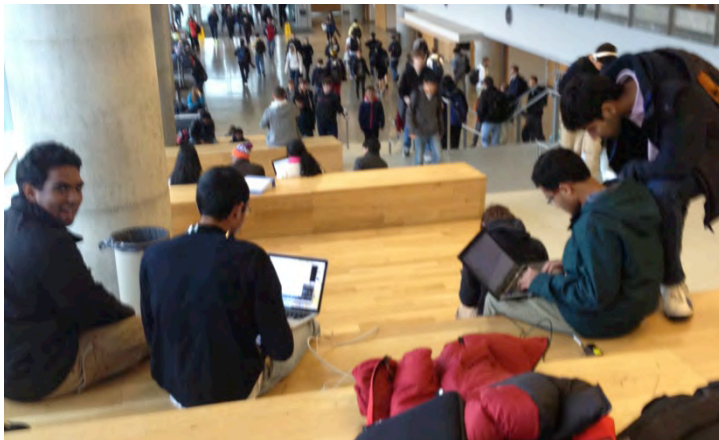
clough commons: **Level 1 Event Atrium & Stairs**

Students gather and linger directly outside of classroom

Before and after classes, students will gather or linger close to the classroom doors to do work on laptops or read papers.

What is causing these behaviors, and how can this be better supported by the space?


Students gather in groups on the stairs

In between classes students gather on the stairs to do work, socialize on their laptops, or talk with friends. Groups will expand in size as more friends travel through the space and meet up with the group (which can be planned or unplanned).

When interviewed, students said that the space is close to where their next class is (closer than their dorm), is less crowded / difficult to find a seat than the upper floors and is less controlled – so they can freely talk and work at the same time.

clough commons: stairs + Level 2 informal work area
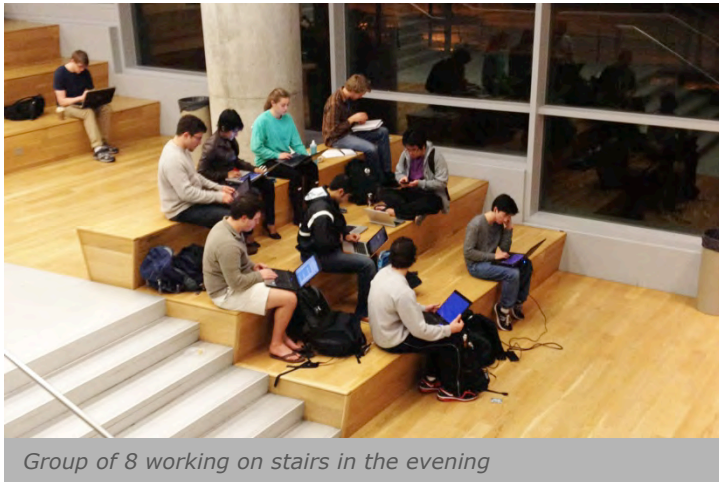
Group of 8 working on stairs in the evening

Time: Tues Dec 3, 2013 @ 7:00 – 7:45pm

Level of activity: High

Description of space:

- Social and relaxed atmosphere with a mix of activities; more active and casual collaboration than in morning observations
- Consistent traffic up / down stairs

Most interesting observation / thought: Having laptops and Google Docs enabled the group of 8 to work anywhere and share their work – e.g.: they didn't need a projector. How else does technology or other devices enable students to "make do" in their space? What's the tipping point when they decide they must move to a more appropriate space?

Activities and patterns observed:

- Work review and problem-solving with the whiteboard at the top of the stair: in group of 3, one person remained seated and referenced laptop while other 2 used papers and worked at whiteboard
- Group members trickling in to join team(s)
- Group of 8 distributed across stairs (see photo), all working on laptops and oriented towards team member on the second step – they were all on Google Docs to collaborate on a paper
- One person left to bring a whole pizza back to the upstairs work area

Activities well-supported and why:

- Side-by-side or small groups (e.g.: up to 4) are best supported on the stairs. Beyond 4, users have to turn around or look across the stair to see all their team members.

Activities poorly-supported and why:

- Large group work

Questions raised:

- How do students define "casual" work? For example, group of 4 observed in Clough Commons yesterday also did not book a breakout room but was gathering to review a video they created for a project.
- What's the daily lifecycle of a space? How do these develop?

Other take-aways:

- Interview with group of 8: Chose Clough because it's at the center of campus. Since they couldn't book a breakout room, the stairs was the next best option and OK for "casual" work. If more "intensive" work (example given was planning where a whiteboard is needed) then would definitely need a whiteboard. Of 8, three went to Library for quiet study; one student said he ONLY studies in the Library

clough commons: **level 2 informal work areas**

Quiet individual work at desks

Time: Mon Dec 2, 2013 @ 12:00 – 12:40pm

Level of activity: Medium – space almost at capacity; students staying for concentrative tasks; quiet

Description of space:

- Somewhat hidden feel, as the space is farther from main entry and bookended by solid walls. It is also bounded by West and East Loop circulation. Noise from adjacent areas is audible, but speech is not distinguishable.
- Mix of armchairs along one wall; group tables and task chairs along middle; and loose soft seating, tables, and whiteboards that are mostly organized along one wall (some have been pulled to other areas)

Most interesting observation / thought: One user asked to join a group table after observing another user doing so.

Activities and patterns observed:

- Mostly quiet individual work with laptops and/or paper / textbooks – students used laptops at tables or in armchairs propped on a lap, an ottoman, or a small table
- Students coming into spaces to look for a seat; no one joined a table of 2 even though there are 4 seats
- Sleeping in armchairs, using ottomans as footrests
- Waiting for a group meeting in a breakout space: group (4-5 people) began to gather outside the door and was not shy to converse even though space was mostly quiet; group waited for a group member to arrive and swipe in

Activities well-supported and why:

- Informal spill-out space for breakout rooms (2 can be accessed from this space) – ample space to stand / sit while waiting; has whiteboards and group seating areas if meetings need to continue
- Spreading out with food, laptop, materials

Activities poorly-supported and why:

- None observed

Questions raised:

- What are the norms for sharing tables and noise? Does this change naturally throughout the day and how?
- How much time will students spend looking for a space before "settling"?

Other take-aways:

- Whiteboards were not used in this observation period – two stood along wall and one stood between two group tables
- One user left her belongings at the table unattended for 2-3 minutes

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clough commons: **level 3 Commons**

Mix of fixed and flexible seating in Commons

Time: Mon Dec 2, 2013 @ 1:00 – 1:30pm

Level of activity: Medium

Description of space:

- Mix of seating and work surfaces: armchairs, small movable desks on wheels, high table seating, and group workstations with task chairs; couple of whiteboards
- Open to individual and group work as users see fit

Most interesting observation / thought: One pair wheeled a small desk to the Gallery area because there were no outlets left in the Commons that they could use; after other group members arrived, they moved back to the Commons when they found and put together several desks

Activities and patterns observed:

- Mostly quiet individual work and hushed pair work; more conversation at high tables – 2 conversations started from people dropping by (possibly because the tables are along circulation)
- Users at movable desks along window faced the exterior; those along wall faced into the space
- One group of 3 were having a louder conversation at the armchairs: created a small cluster with armchairs and task chairs

Activities well-supported and why:

- Movable tables work well to support multiple / changing group sizes: can be easily separated or put together

Activities poorly-supported and why:

- Except for large tables, the size of the high tables and movable tables in this area doesn't support spreading out; most users at these surfaces were working at laptops only

Questions raised:

- Where do students get supplies for the whiteboards? (missing trace)

Other take-aways:

- One task chair was left near the stair
- Interviewees stated that they use Clough because it's convenient, can be drop-in, and they don't have to be quiet

clough commons: **level 3 Commons**


1-2 students use each table

As observed in other spaces, 4-person tables tend to be used by 1-2 individuals, if they were working independently. Some students have materials spread out; others have just a laptop.

"Leftover" chair

Location of chair indicates that an individual pulled it over to sit near the banister. Its "proper" location is to the left of the photo, where the group tables are (see photo above).

clough commons: **Level 4, open seating & group areas**
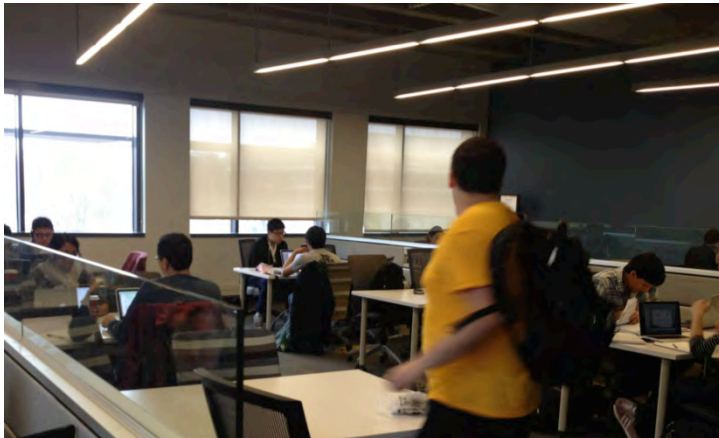
Group work occurring at tables

Time: Mon Dec 2, 2013 @ 1:00 – 2:00pm

Level of activity: Medium - High

Description of space:

- Spaces near the stairs on the 4th floor included a number of areas with flexible furniture to support both group and individual study. These spaces were relatively quiet, with some students wearing headphones and others casually socializing while studying
- One area included ~16 tables and chairs which seem to be geared towards group work, where students were engaged in dialogue about their coursework

Most interesting observation / thought: Students seem to transition from working individually to working in groups frequently. One student will arrive in the space and work for awhile, and will later be joined by 1-3 others (at various times, who will stay for varying durations). These groups will modify furniture to adapt to the changing size of their group

Activities and patterns observed:

- Groups studying together at 4 person tables, using laptops and paper, actively engaged in discussion
- Individuals doing focused work, often with headphones
- Individuals meeting others to informally study together

Activities well-supported and why:

- Informal group, or "alone together" studying, where one group may change in number over the course of an hour or two – and can adapt the furniture to meet their changing needs
- Formal group studying at hard top tables

Activities poorly-supported and why:

- Given the demand on tables and booths, it may be challenging to find available spaces to meet a group at a designated time

Questions raised:

- How do students plan or select where they will study? How does this differ when they are collaborating on coursework (group study, group projects, etc.) vs. when they are meeting informally, to study "alone together"?

Other take-aways:

- Students studying at the group study tables were often doing planned group studying for a course. While engaged in discussion about their coursework, students mainly looked at their own laptops and did not share screens
- Students seem to settle in and take ownership of the spaces, specifically those with mobile furniture – rearranging chairs, stools and tables, taking off their shoes, and spreading out
- Booths are in very high demand – several groups of students quickly abandoned their current study spaces to grab booths that came available

clough commons: **Level 4, open seating & group areas**

Students studying individually, facing circulation path

Students arrange furniture once they arrive in a space to best suit their needs. Once joined by a friend they will rearrange their seats and tables in order to accommodate an expanded group – adding furniture or dragging furniture across the space to suit their needs.

Students use booths to do independent work with friends

Students clamor for space in soft seating booths – moving from their current study space quickly to claim the booth.

Students in soft seating booths seem to often be working on independent work in the company of friends. Work is intermixed with socializing – working on laptops and viewing YouTube videos side-by-side.

student center: **2nd floor**

Time: Mon Dec 2 @ 3:00 – 3:30pm

Level of activity: low - medium

Description of space:

- Small area off of main circulation path (near stairs and between 2nd floor cafeteria and bathrooms)
- A mix of seating – three 4-person tall tables w/ stools, three soft-seating groupings w/ low table, and two 4-person hard seating groupings w/ tables
- Seems like a convenient, high-traffic, higher turnover study area during peak times (e.g. breakfast or lunch)

Most interesting observation / thought: Many individuals were very spread out – using additional chairs and the majority of table space for books, laptop, bags, coats, food, etc. How important is the ability to spread out while studying, and how does this behavior differ in group versus individual study?

Activities and patterns observed:

- Individual study on laptop, or on laptop and books, at table and in soft seats
- Casual conversation between student studying and student passing by
- Group of three formally working together (arrived separately at scheduled time, and were actively discussing / collaborating)

Activities well-supported and why:

- Individual work with room to spread and "bring their dorm with them," including studying with phone, laptop (for music, TV, or work)
- Small group meeting could be pre-scheduled without group members needing to reserve space – all members could arrive at the same time and begin work because space was not overcrowded

Activities poorly-supported and why:

- Individual work on laptop at soft seating – does not support ergonomic posture, with individual using his leg as a mouse pad

Questions raised:

- How much space is needed per student to support different types of studying and learning activities?
- What qualities are most sought after in choosing a study space? Availability? Space to spread out? Proximity to other amenities (food, class, dorm, etc.)?

Other take-aways:

- Individuals seem to "claim" an entire table for four by spreading out their work and belongings. How do these behaviors affect sharing of space, and could space / seats be better allocated to address this behavior?

student center: **2nd floor**

One person waiting for his group to show up...
eventually turned into a group of three.

Some preference for higher tables; similar to
behaviors observed in Clough Commons

student center: 2nd floor

A mix of individual and group study, evenly distributed

Time: Mon Dec 2, 2013 @ 3:00 – 4:00pm

Level of activity: Low - Medium

Description of space:

- Small area off of main circulation path (near stairs and between 2nd floor cafeteria and bathrooms)
- A mix of seating – three 4-person tall tables w/ stools, three soft-seating groupings w/ low table, and two 4-person hard seating groupings w/ tables
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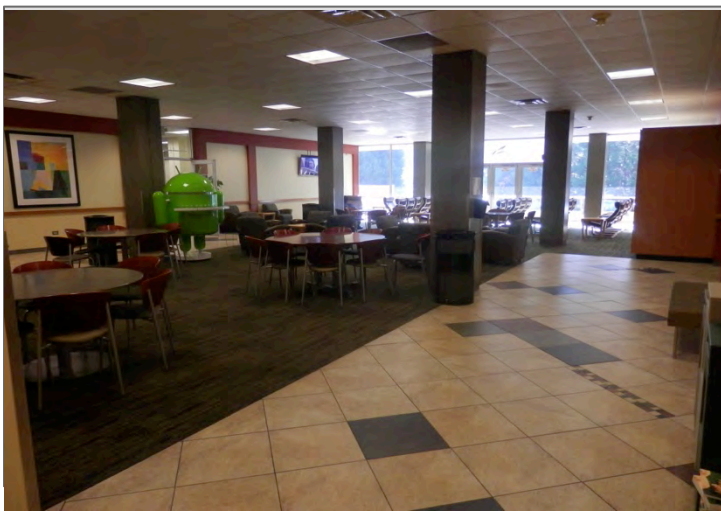
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- What qualities are most sought after in choosing a study space? Availability? Space to spread out? Proximity to other amenities (food, class, dorm, etc.)?

Other take-aways:

- Individuals seem to "claim" an entire table for four by spreading out their work and belongings. How do these behaviors affect sharing of space, and could space / seats be better allocated to address this behavior?

Student Center: **2nd Floor: Informal Work Area between Computing and Under the Couch**

Time: Mon Dec 2, 2013 @ 3:10 pm – 3:30 pm

Level of activity: Moderate: ~50-75% occupied with most users quietly working independently or quietly in pairs, some circulation along the two hallways bordering the work area

Description of space:

- 3 zones of space: (1) viewing area with rows of armchairs facing screen (~20 seats); (2) work / eating area at opposite end of viewing area with 6-person round tables (~24 seats); (3) buffer zone in between with soft and hard seating; two high tables
- Adjacent to computing center and Under the Couch; down the hall from food court
- Furniture quite fixed / bulky

Most interesting observation / thought:

•Students working / relaxing together: one pair was sharing headphones for a video and one of the two people was multitasking between working and looking over at the video occasionally

•One pair of students in the buffer zone were VERY loud - seemed to be socializing and seemed totally incongruous

Activities and patterns observed:

- Quiet individual and side-by-side work with laptops and notes / textbooks at round tables – some people seemed to be studying alone, together (overlapping notes / papers)
- Individual work with headphones, sleeping, casual work / socializing at armchairs
- Moderate chatter from pair working in buffer zone – only noise in the area, except when TV was switched on
- People entering space from hallways, looking for empty seats, then staying / leaving
- Charge station in tabled zone seemed to be a draw

Activities well-supported and why:

- Spreading out: lots of room at round tables
- Solitary work: working alone but not being alone
- Chilling & re-enerizing in "lounge" area

Activities poorly-supported and why:

- High energy/loud collaborative work

Questions raised:

- What are the unspoken norms / expectations for working in this space with respect to noise – e.g.: when it is OK / not OK to switch the TV on?
- What is the norm for asking for permission (if at all) to sit at an already occupied table? (Most people asked if it was OK before sitting.)

Other take-aways:

- Users will create their own quiet via headphones

Georgia Institute of Technology brightspot

Student Center: **2nd Floor: Informal Work Area between Computing and Under the Couch**

Lounge area showing comfortable chairs facing plasma screen

Round tables in work area – 6 or so chairs around each, reconfigured as needed

Student Center 2nd Floor: Informal Work Area between Computing and Under the Couch

Students working alone, together with papers and food spread out on table

Octane Coffee Bar and Lounge, Westside

Main seating area – photo from Octane website

Time: Tuesday evening, December 10, 2013, 6-6:45pm

Level of activity: High

Description of space:

- Crowded coffee and bar space supports both social gatherings and individual study
- Not a cozy space; Design is functional, a bit industrial
- Distance from campus requires that users make a concerted effort to use the space
- In addition to students working, others gather in the space for a drink after work
- Variety of different spaces within the café area (tables near outlets, bar seating, high tables with stools)

Most interesting observation / thought: One group brought a power strip and hard drive to the café. Despite being a commercial space, many users appeared to have settled in for the long-haul, even leaving expensive technology unattended for long periods of time.

Activities and patterns observed:

- Although many were in groups, most worked individually, on a laptop, with headphones.
- Patrons tended to be located at spaces that corresponded to their need. Those using laptops sat close to the wall with outlets, people socializing or reading stayed towards the center of the space, etc.
- Users did not spread out much. Whether this is because they had limited space or because they didn't need the space is unclear.

Activities well-supported and why:

- Individual work on a computer – The tables are large enough to support a laptop (and little else) and there were plenty of outlets along the wall.
- Casual conversations – Because the space isn't quiet, people seemed comfortable having discussions that may not be appropriate in a quiet reading room.

Activities poorly-supported and why:

- Collaborative work - The noise makes it deep conversation difficult, and the tables aren't large enough to allow students to spread out much.
- Reading physical texts or doing something like math hw, which would require space for a textbook and writing surface - The lights in the café were dimmed at 6pm and amount of table space available to individuals was fairly small.
- Chance encounters – People in the space were either "in the zone" or had clearly planned their meeting in advance. Users did not spontaneously interact with one another.

Questions raised:

- What leads a user to choose a functional space over a cozy space?
- Do users prefer the noise of the café/bar, or do they put up with it because they like the space and/or coffee?
- Given that the space supports non-work activities, why choose to work there? Does the "cool factor" of the space influence this decision?

Other take-aways:

- Users took advantage of the drinks at the café, but no one was eating.
- Users seemed comfortable sharing the long tables with other users.
- Did not appear to be many undergraduates in the space.

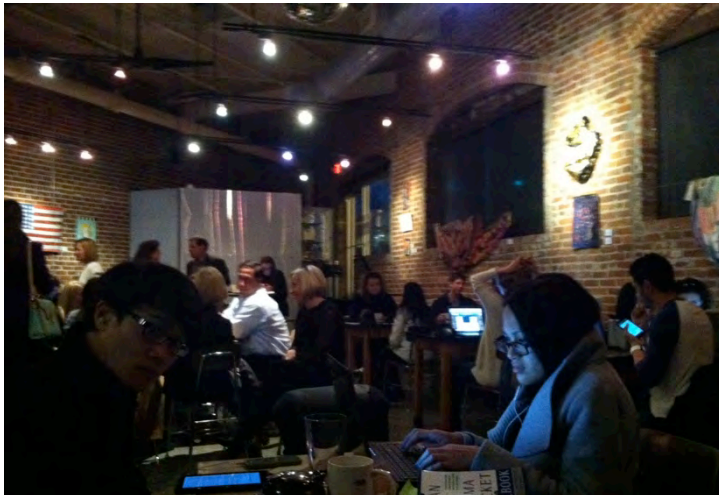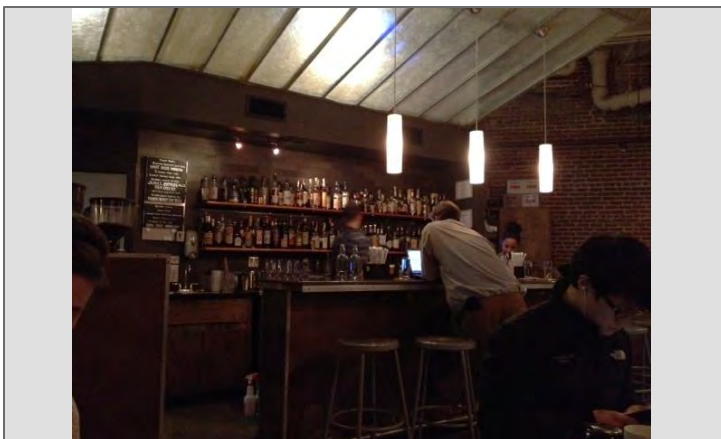# Octane Coffee Bar and Lounge, Westside

Photo from 12/10/13

In the evening, the café is quite dark, and many customers are there for the bar and to socialize. Students continued to work despite the noise and social activity.

Octane Coffee

Laptop user enjoying a drink at the bar

Time: Tuesday Dec 10, 2013 @ 6:00pm

Level of activity: High

Description of space:

- Large, very crowded, L-shaped room; counter across from front entrance; small bookshelf displaying products for sale; full bar in middle; assortment of moveable seating (worn wooden tables and metal stools of varying heights); warehouse building renovated in industrial chic style; dark; very loud (music and conversation din); uncomfortable furniture; magazine rack at back exit; dim and spotlight lighting; bag storage under chairs and bag hooks at bar seating; local art on brick walls; concrete floor; handwritten beer list on wall; building feels cool b/c reveals its own age and history; muted colors

Most interesting observation / thought: Customers seem happy to create workarounds because they love the place

Activities and patterns observed:

- Mostly 20-30 year-olds (equal men/women, students, young professionals, hipsters, creatives) focused "alone together" on digital projects; a few tables of conversations (multiple conversations occurring at shared tables); and a large corporate happy hour in the center of seating area
- Most customers each have at least 1 device and are digital-multitasking (using iPhone while using laptop, sliding iPhone underneath headphone ear to take a call, reading data from external hard drive, B.Y.O. power strip); only 3-4 people reading physical books/magazines, 1 person writing cards
- Customers and staff respect the space: bus own tables, space is very tidy considering how crowded it is; customers trust the space: a laptop was left by itself for at least 15 minutes while customer was outside on the phone
- Many customers left during the hour we were there (dinner time)

Activities well-supported and why:

- Furniture is flexible: customers pushed tables together
- Free wifi (provided as a PR tactic by a local IT consulting company)

Activities poorly-supported and why:

- Overcrowded, especially when we first arrived
- Dearth of electrical outlets
- Noisy (not conducive to quiet study)
- AND YET, customers seem happy to create workarounds for these problems (share tables, bring power strips, use headphones)—why?? because this is a "cool" place to be?

Questions raised:

- How can we capture the spirit of "coffee house cool"? Lighting? Music? Reputation?
- How can we best support the multiple-device-per-person customer?
- How can we create a "noisy quiet" space: a noisy space where people who like noise can focus well

Other take-aways:

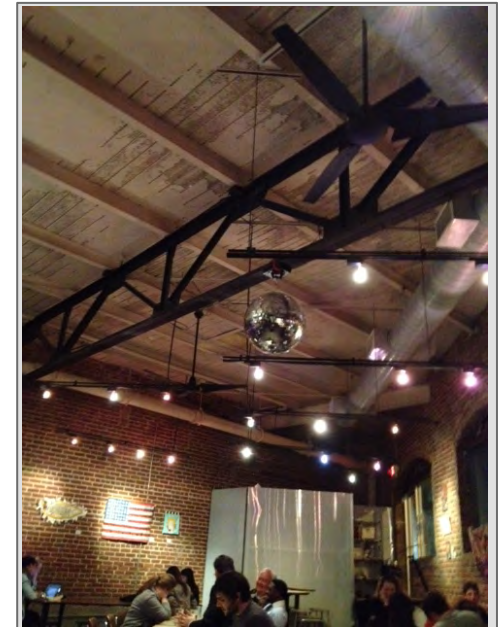- Imperfect, historical architecture can still feel modern and innovative

Octane Coffee

Laptop users camped out at window seats near front entrance

Snazzy font wall decor invites patrons to order drinks at the front counter

One customer left his Mac laptop sitting on the counter pictured at left for at least 15 minutes while he was on the phone outside. View through these windows is of the parking lot.

The space is at once serious (industrial chic, muted colors), sophisticated, and playful

Disco ball adds an air of mystery and whimsy; can we put one in our Library?

This wall totally "says"/embodies delicious coffee: how can typically unused wall space inspire visitors to make use of services offered (in this case, buying coffee)?

Architecture Library

View from seating area (zone 4 below) to service point

Time: Wed Dec 4, 2013 @ 10:20 – 10:50am

Level of activity: Low

Description of space:

- 4 zones: (1) service point adjacent to entrance with offices, 2 staff-facing computer terminals, 3 user-facing terminals, scanner; (2) periodicals reading area with 4 armchairs and small couch; (3) carrel area, 9 with desktops, 5 empty, and a printing station; (4) 12 lightweight 4-person tables and light task chairs – tables arranged in rows

Most interesting observation / thought: Given adjacency of the Library to studios, when do students use the Library vs. their studio spaces?

Activities and patterns observed:

- 3 people in carrel area: 1 using desktop, 2 using laptops
- 2 people on their laptops in the flexible seating area, with some paper materials, personal belongings
- 1 person in flexible seating area drawing and sketching (no technology)
- Pair working independently side-by-side in flexible seating area
- 1 person entered Library to use a computer terminal at service point

Activities well-supported and why:

- All activities observed seemed well-supported

Activities poorly-supported and why:

- None observed

Questions raised:

- Do non-Architecture students use the library?
- Where do Architecture students go to "get away"?

Other take-aways:

- Most comfortable seating in the Library is also the most visible (in periodicals area, in line with entrance)

Scheller: Undergraduate Commons (and bldg in general)

Signage options for breakout rooms

Time: Mon Dec 2, 2013 @ 3:00 – 4:00pm

Level of activity: Low – high depending on location; at capacity in Undergraduate Commons, low-medium in spill-out spaces outside classrooms and breakout rooms

Description of space:

- Intended users are Scheller students and students taking classes in that building. Breakout rooms are open to all and do not seem to be bookable (except by formal courses)
- UG Commons includes comp. workstations, print / copy, café booths, and small table seating; also in the space are course bins with folders for students; adjacent to courtyard
- Building includes spill-out soft seating and tables and breakout rooms (small 4-6 to large 8-10)

Most interesting observation / thought: At right →

Activities and patterns observed:

In Undergraduate Commons:
- Desktop computer use, though 3 users had laptops at the desks instead
- Individual and small group work (2-4-person teams)
- One individual, after a group meeting ended, moved from a round table to the café seating
- Noisy, from equipment / maintenance in courtyard and students

In building:
- Mostly individual work in spill-out spaces and some groups working in breakout rooms (poor view into space); activity varied with classes

Activities well-supported and why:
- All activities observed seemed well-supported

Activities poorly-supported and why:
- None in particular

Questions raised:
- How well does the signage provided work? Do students use them (only 2 breakout rooms in session had signs posted outside)? Why?
- Does a notice about when a breakout room will be vacated create an unspoken "rush" for the room? How are queues managed?

Other take-aways:
- One chair was in corner, separate from other tables as if someone needed a seat and pulled one away to create their own space

Most interesting observation / thought: Surprised to see Undergraduate Commons so full, while spaces on upper floors were quite empty (and quieter).