



SWEM LIBRARY RENOVATION STUDY DIGITAL RESEARCH LAB

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PLANNING TEAM

William & Mary Project Committee

Carrie Cooper - Dean of University Libraries
Lisa Nickel - Associate Dean of Research & Public Services
Ed Aractingi - Chief Information Officer
Stephanie Blackmon - Associate Professor of Higher Education
Virginia Torczon - Dean of Graduate Studies and Research
Dennis Manos - Vice Provost for Research, Graduate, and Professional Studies
Peggy Agouris - Provost
Amber Hall - Senior Project Manager, FPDC

Design Team

Quinn Evans:

Charles Wray, AIA, LEED^{AP} – Principal in Charge
Shannon Wray, CID, LEED^{AP} – Project Manager
Andrea Quilici, AIA, LEED^{AP} – Project Architect
Laura Miller – Interior Designer
Elena Wrobel – Staff Architect

Tappé Architects:

Jeff Hoover, AIA – Principal, Library Programming & Planning

Shen Milsom & Wilke LLC:

Tom Edge – Associate Principal, Technology Planning and Design

Setty:

Joseph A. D'Alu, PE, LEED^{AP} – Director, Mechanical, Electrical, Plumbing & Life Safety Engineering

EXECUTIVE SUMMARY & PROJECT OVERVIEW

The College of William and Mary retained Quinn Evans to develop the concept design for a new Digital Research Lab, or DRL within the Swem Library. The project area is currently known as the Vaughn Read and Relax Space - a 15,000 square foot area located on the first floor of the 2005 Burger Wing addition (Refer to the graphic to the right highlighted in green).

Among several critical outcomes, the primary project goal is the establishment of a forum for interdisciplinary development of, and exchange of, ideas. The DRL is to be a spatial hub within the Library's "prime real estate" that is an "intellectual agora" appealing to both students and faculty across campus. In addition to the digitally-rich instructional spaces associated with the DRL, the concept is to provide additional student study and collaborative space. Among all facilities on campus, the library is uniquely suited to this goal.

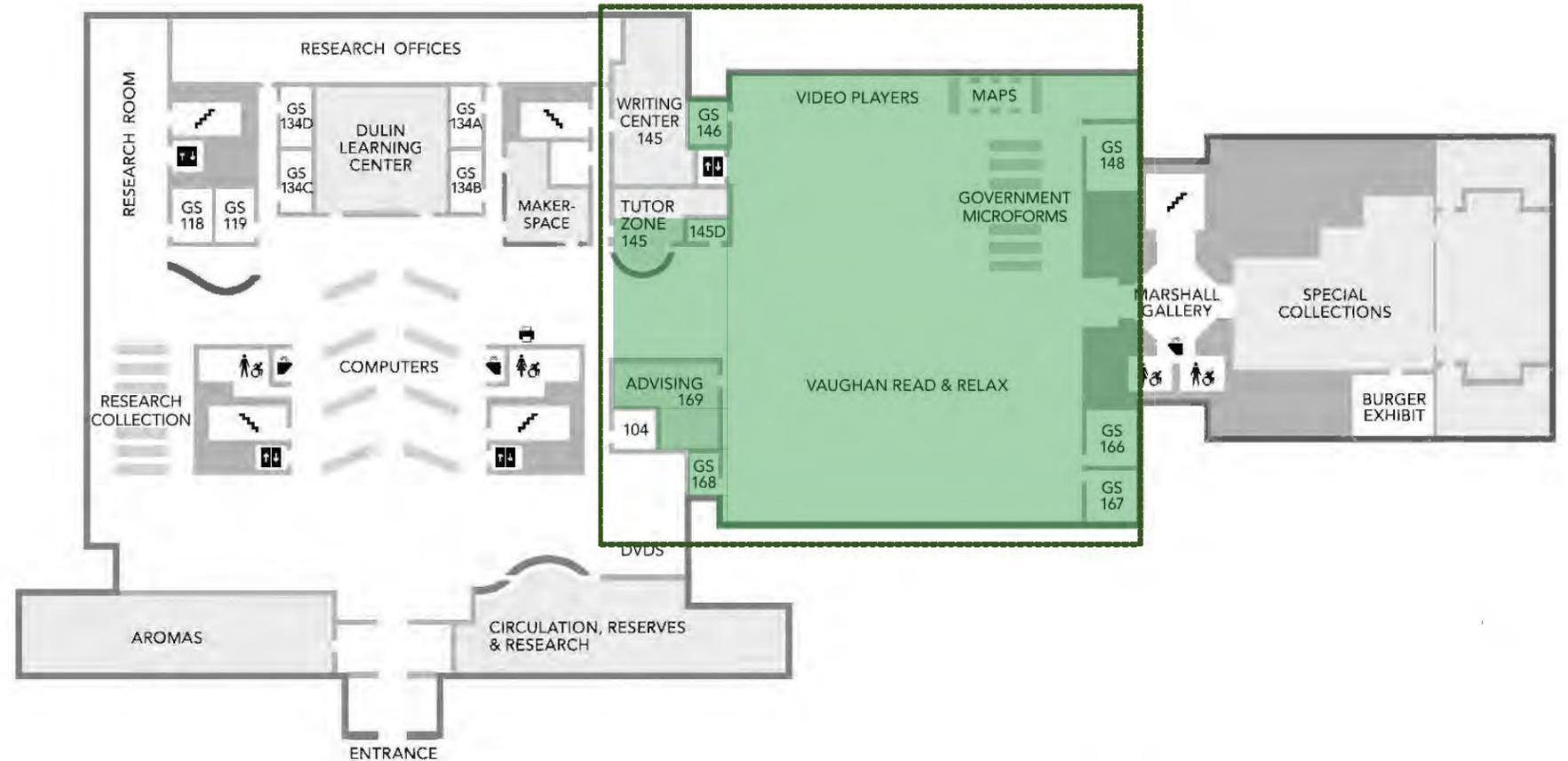
The primary components of the Digital Research Lab are these student services areas:

- The Center for Geospatial Analysis
- Data Visualization Lab
- Prototyping and Experimentation Lab for Future Programs
- IT "Genuis Bar" Help Desk
- Enclosed Collaboration Spaces
- Open Collaboration Spaces

Further, several existing adjacent spaces may be impacted by the renovation given the synergies between the new DRL and these services, in particular": the Writing Center and the Tribe Tutor Zone. These are indicated by the dashed green line in the diagram.

The design is rooted in William and Mary's framework for planning, "Vision 2026", the Library's articulated Values, and the Goals of the emerging Library Strategic Plan. The space program for the Digital Research Lab is developed to support all these aspirations collectively and the design thinking for the renovation is infused with these principals, goals, and vision.

Additionally, the design team's understanding of the project parameters and intended outcomes is informed through conversations with the Library's Leadership Team, and through two (2) programming meetings with a combination of University administrators, faculty, and library staff (one in-person, one virtual). A pre-meeting survey / poll was distributed, and feedback / comments were shared at these meetings. Our understanding of the students' perspective on the future of the library is informed by a separate survey and focus groups discussions.



PROJECT INTRODUCTION

The Library Building Program for partial renovation of the 2005 Burger wing addition to the Swem Library is rooted in William and Mary's framework for planning, "Vision 2026," the Library's articulated Values, and the Goals of the emerging Library Strategic Plan.

UNIVERSITY VISION 2026 GOALS

Goal 1. Expand W&M's Reach

William & Mary aims to address global challenges, forge dynamic partnerships to fuel positive change and model democratic ideals to extend its influence in the world.

Goal 2. Educate for Impact

William & Mary will re-imagine the liberal arts and professional education in the 21st century to ensure the lifelong success of our graduates.

Goal 3. Evolve to Excel

William & Mary will embrace change to achieve our full potential in environmental and financial sustainability, in diversity, equity and inclusion, and in operational excellence.

LIBRARY MISSION

William & Mary Libraries support and enhance teaching and research and foster intellectual curiosity, creativity and lifelong learning.

LIBRARY VALUES

Belonging

We embrace equity, diversity and inclusion.

We strive to create a culture where all individuals feel welcomed, included, and represented.

Curiosity

We are committed to learning.

The libraries are places to discover, play, create, connect, and build community.

Equitable Access

Equitable access to information is a human right.

We advocate to remove barriers to information & create new pathways to discovery.

Flourishing

People are our greatest strength.

We invest in the personal and professional growth of our staff and promote a work environment built on trust and collegiality.

Top among **VALUES** is **Belonging** which speaks to notions of Diversity & Inclusion. We understand that at W&M success requires involvement of individuals with diverse talents and backgrounds as stakeholders in its agenda, and that W&M seeks environments that are open and welcoming that promotes self-agency, participation, collaboration and innovation.

As the Library crafts the next version of its Strategic Plan, we understand these to be the important goals:

LIBRARY STRATEGIC PLAN GOALS

Invest in current staff and evolve existing positions to address challenges

Advance teaching, learning and research through library services

Provide exceptional collections to support evolving curriculum and program needs and improve access to collections

**Expand library reach through alumni and community engagement
Create safe, beautiful, learning-centered spaces**

In addition, William & Mary established Project Goals and Vision Statement specifically for the renovation.

PROJECT GOALS

Unify projects in a space that elevates research and models University wide collaboration;

Support future growth in academic programs that rely on technology support and infrastructure for new modes of research and scholarship;

Engage stakeholders across William & Mary with the Library's planning

PROJECT VISION

Refresh and re-imagine the Burger Wing with the addition of the Digital Scholarship Lab, and a more flexible space for study and collaboration

The Digital Research Lab **Space Program** on the subsequent pages is written to establish the design criteria to be used by the design team as they develop the spatial design solution. Ultimately, the design team is the intended audience.

SPACE PROGRAM

DIGITAL RESEARCH & EXPERIMENTATION LAB (inc. Center for Geospatial Analysis)

A document (“Digital Scholarship Lab: Planning for Research at William & Mary”¹) noting a set of well-considered preferences and outcomes was provided to the design team when commencing the programming work. It described a Digital Scholarship Lab (DSL) as the interdisciplinary hub for activities for “artificial intelligence, digital humanities, digital scholarship, open science, data mining and visualization.” Building on (and quoting from and paraphrasing) that document, this Program describes the quantities and qualitative spatial characters that will facilitate these activities.

“The Digital [Research & Experimentation] Lab is envisioned as both a service organization and a space. It is an integrated service point that builds University infrastructure and leverages strengths and expertise for the good of the whole.”

While recognizing the contemporary nomenclature is “Digital Scholarship Lab,” William & Mary has determined that the more appropriate descriptor for this project is “Digital Research and Experimentation Lab.” The DREL will be the umbrella space that will house a variety of new activities, resources and services described below, and some that are currently provided elsewhere in the library, including the current Center for Geospatial Analysis.

FUNCTIONS

DIGITAL RESEARCH & EXPERIMENTATION LAB

General:

Support a community of knowledge creators -- not just consumers of previously authored text.

- Incorporate large format sharing of and interacting with graphical digital content.
- House engaging spaces for presentations, workshops, group work, and integrative learning.
- Support development of multi-modal research and documentation processes with outcomes configured to reach diverse audiences
- Prominently display on-going and completed projects from within the DREL and other collaborative spaces associated with the renovation

- Host and support these activities/workshops:
 - Drop-in work that doesn’t need prior scheduling
 - Consultation (e.g. Statistical Consulting Center) with available experts, including with librarians, archivists, statisticians, data scientists and peer-to-peer
 - Experiential learning about mentoring for grads & undergrads
 - Data visualization
 - Data/Text mining primary sources
 - Digitization of analog materials
 - Fast and slow presentations, lightning talks and lecture series on key issues in digital research in our future world
 - Creating metadata or naming authority files
 - Web & applications development
 - Collaborative 3D modeling and design
 - Sharing of specialized expertise with others to support ideation and collaboratively troubleshoot projects
 - Cross-university faculty programs and discussions on topics that spark new interest in research collaborations, in new digital applications for research, and in new lenses to view and accomplish faculty endeavors
 - Community-engaged research & workshops

Center for Geospatial Analysis

- Provide access to common GIS and remote sensing (RS) software packages
- Consult with faculty about their research and ways to integrate GIS projects into courses
- Provide access to advanced resources and GIS software (and the knowledge to use it).
- Present events on all kinds of creative GIS approaches.
- Host and support these activities:
 - Production classes for GIS or programming or applications
 - One-on-one consultations with experts (e.g. CGA Fellows)

Staff:

- Provide office space for 7 full time faculty and staff:
 - 1 library operations office
 - 3 revolving faculty offices
 - 3 offices for CGA faculty/staff

SPACE PROGRAM

GOALS

DIGITAL RESEARCH & EXPERIMENTATION LAB

General:

“The DREL will welcome curious faculty and students, to understand their unique needs for digital scholarship support, and to cater to their needs for research, digitization, interface, and data management regardless of major or department. The Lab hopes to attract individuals regardless of their experience or depth of knowledge in technology and digital tools, or size and scope of their intention.”

- Bring together divergent opinions and diverse points of view as part of the design and research process. Be a locus for people with specific questions and people with specific expertise to create new knowledge together.
- Bring disciplines together so that complex research problems are examined with multiple lenses and perspectives. Become a magnet for interdisciplinary activity.
- Incorporate technological resources, human resources and spatial resources for research and collaboration that will be unique in the University and therefore attractive across all academic disciplines and levels of study, including faculty.
- Encourage new ways of conducting research which require new collaborative strategies.
- Celebrate and showcase interactions with technology and between collaborators to increase general awareness of this type of collaborative research activity.
- Foster and create access to the unique advantages that the digital world has to offer, and access to a community of fellow learners, authors, and researchers.
- Be the William & Mary Digital Humanities Lab.
- Support human-centered design processes.
- Promote more equitable access to information and to effectively advocate for inclusive information systems design in scholarship and learning, space and design.

Center for Geospatial Analysis:

- Promote the use of geographic information systems (GIS) and associated tools.
- Enhance “Quantitative skills support” with multi-modal and multi-media devices and methodologies
- Support follow through on skills built in class and workshops to apply GIS coding and mapping to create sophisticated, communicative interactive graphics.

Staff:

- Facilitate access to staff expertise by students
- Provide an efficient, productive and delightful environment for individual staff endeavors.

ARCHITECTURAL CHARACTER, SPATIAL QUALITIES & FURNISHINGS STRATEGIES

DIGITAL RESEARCH & EXPERIMENTATION LAB

General:

The DREL may not need to be enclosed behind a wall (glass or otherwise) separating it from the other spaces, but could be comprised of and assemble of enclosed spaces with a zone of the renovated area.

Include the rooms/zones listed below within the DREL service area

(3670 net assignable square feet):

- IT “Genius Bar” desk and nexus for access to experts and CGA Fellows (150sf)
- Large scale data visualization area (1000sf)
- Prototyping and experimentation space, e.g. VA/AR engagement (500sf)
- Group study areas without full enclosure, but acoustical buffering, flexible perimeters, a (repositionable?) digital wall, and a (repositionable?) analog wall, to accommodate groups in these sizes:
 - 2 for 3 to 6 (160sf ea) with consideration for sub-dividing a 6 person alcove for 2 independent groups of 3
 - 1 for 5 to 8 (180sf)
- Storage Room (200sf):

Staff:

- 4 acoustically isolated private offices (120sf ea) with control of visual access into and out of the space. (Note: 3 additional offices for CGA are itemized below.)

Other spatial attributes and assets will include:

- Capitalize on access to views to the outdoors and access to natural light.
- Establish an open, visible space
- Incorporate a variety of furnishings/seating options to accommodate a diversity of learning/collaborating styles
- Research and group productivity will go on in the space for protracted periods of time, therefore design so that it will be not only initially enticing but also provide long-term comfort (i.e. most of a day). Ergonomics are important.
- Flexible furniture and aesthetically designed space to draw people in and help them be comfortable and well-outfitted to work in a variety of modes
- Intelligent, efficient, adaptable space for high-end computing, applications, devices, and media
- Lab for prototyping solutions
- Generous digital screens and walls for displaying and analyzing visual data
- To enhance inclusiveness and accessibility, incorporate student control over how visually transparent spaces can be, and offer options for spaces with higher levels of acoustic separation.

SPACE PROGRAM

Center for Geospatial Analysis:

Include the rooms/zones listed below within the CGA service area.

(1920 net assignable square feet):

- Instruction space with a capacity of 20 students (1000sf)
- 3 consultation/independent work space for (360sf) with collaborative technology (e.g. large shared monitor)
- Storage Room (200sf)

Staff:

Include the rooms/zones listed below within the CGA area for CGA staff:

- 3 acoustically isolated private offices (120sf ea) with control of visual access into and out of the space for CGA staff

EQUIPMENT & TECHNOLOGY

General:

- Information/data management, manipulation and sharing technologies will be nearly ubiquitous and these technologies will likely be the highest performing versions available on-campus
- Interactive touch screen presentation wall (nominally 6' x 24') and associated consoles and controls
- Digital collaboration stations in group study rooms
- Large format printers (1)
- Print/scan/copy/transmit station (1)
- technology installations must be developed to facilitate swap in newer versions as older ones become obsolete
- Emphasize accessibility and reconfigurability when designating technology systems
- A variety of large monitor options in most spaces to which students can connect their own technology
- Whiteboards with the capacity output to a printer and/or external drive
- Additional technology details to be documented in a subsequent technology program.

Center for Geospatial Analysis:

- Individual workstations (20)
- Classroom teaching wall technology (smart screen)
- Classroom workstations for collaborative learning /instruction (4)
- 20 desktop PCs in classroom

Offices:

- Mobile workstations, 1 ea.

ENCLOSED COLLABORATION SPACES

FUNCTIONS

Enclosed Collaboration spaces

Support group work locally as well as with synchronous collaborators across the globe.

- Support the activities of graduate and undergraduate “consultants” working with other students
- One-on-one expert consultation and tutoring
- Presentation practice space (with capacity for self-recording)
- Host and support these activities:
 - Flexible space for working in small groups, consulting, handling one-on-one tech work, or teaching
 - Collaboratively planning digital projects
 - The open and closed collaboration spaces will be de facto support space for the activity of the Tutor Zone, which has 75 tutors and makes about 3500 appointments per semester

GOALS

Enclosed Collaboration Spaces

- Enable group focused group collaboration with limited distraction while allowing activities and outcomes to be shared broadly – in the library, on-campus and beyond.
- Allow research groups to tune their collaboration space to their spatial needs and preferences

ARCHITECTURAL CHARACTER, SPATIAL QUALITIES & FURNISHINGS STRATEGIES

Enclosed Collaboration Spaces

Include the rooms/zones listed below within the Enclosed Collaboration Spaces service area

(2400 net assignable square feet):

- 12 rooms for expert consultation & tutoring (85sf ea)
- Group study rooms (with flexible perimeters, a digital wall, and an analog wall)
 - 5 rooms to accommodate groups of 3 to 6 (160sf ea)
 - 2 rooms to accommodate groups of 5 to 8 (190sf ea)
- Storage Room (200sf)

Establish an open, visible space. However, recognize the value of translucency for sharing light while enhancing visual focus and personal security/privacy, which can be an important feature for establishing diversity of access and inclusion. Transparency is welcome for access to light and views and for showcasing activity, however, 2-3 opaque walls are generally useful and desirable.

SPACE PROGRAM

Other spatial attributes and assets will include:

- Capitalize on access to views to the outdoors and access to natural light.
- Include some repositionable/reconfigurable seating and partitions
- Incorporate a variety of furnishings/seating options to accommodate a diversity of learning/collaborating styles

EQUIPMENT & TECHNOLOGY ENCLOSED COLLABORATION SPACES

- Technology for local/in-person collaborations as well as for collaborations remote/distant participants in all enclosed group spaces
- Technology for presenting (and/or practicing presenting) in-person and remotely with assets for documenting and sharing presentations
- technology installations must be developed to facilitate swap-in of newer versions as older ones become obsolete
- Emphasize accessibility and reconfigurability when designating technology systems
- Dual monitors in most spaces to which students can connect their own technology
- Smart whiteboards available in all collaboration spaces
- Additional technology details to be documented in a subsequent technology program

OPEN COLLABORATION SPACES

Many of the Functions, Goals and Spatial Characters of these spaces will be identical to those of the Open Collaboration Spaces. Please reference them.

Exceptions will include the degree to which visual and acoustical separation is emphasized and achieved, and other differences as noted below.

FUNCTIONS

(Disparate from the Enclosed Collaboration Spaces)

- Facilitate group collaborations that do not require a high degree of acoustic separation
- Accommodate W&M's competitive gaming team

GOALS

(Disparate from the Enclosed Collaboration Spaces)

- Develop a high energy environment that emphasizes interactive productivity
- Increase awareness of the processes and outcomes associated with collaborative interdisciplinary scholastic endeavors

ARCHITECTURAL CHARACTER, SPATIAL QUALITIES & FURNISHINGS STRATEGIES

(Disparate from the Enclosed Collaboration Spaces)

Establish deliberate areas (but not fully enclosed rooms) for collaboration, from mid-sized workshops to impromptu meetings and huddles.

Include the rooms/zones listed below within the Enclosed Collaboration Spaces service area (2530 net assignable square feet):

- 10 alcoves/zones biased towards expert consultation & tutoring (85sf ea)
- 8 seating alcoves/zones biased towards 3-6 researchers (160sf ea)
- 2 seating alcoves/zones biased towards 6-8 researchers (200sf ea)

Other spatial attributes and assets will include:

- Semi-enclosed "nooks" between enclosed group spaces that are used to define spatial resources for group collaborations/interactions.
- Include a majority of repositionable/reconfigurable seating and partitions/space dividers
- Select finishes and materials that have acoustic buffering/absorbing properties.

EQUIPMENT & TECHNOLOGY

(Disparate from the Enclosed Collaboration Spaces)

- Technology tuned to support in-person collaboration
- Technology specifically for distance collaborations is NOT required in open group spaces
- Dual monitors in most spaces to which students can connect their own technology
- Smart whiteboards available in all collaboration spaces
- Additional technology details to be documented in a subsequent technology program

ARCHITECTURAL NARRATIVE

The design of the Digital Research Lab is informed by several over-arching programmatic goals:

First, the design showcases the abundant technology resources and offers opportunities to see both digital and analog learning on display.

The Center for Geospatial Analysis Classroom and the Visualization Lab, being the most technology intensive spaces, are located in the heart of plan and are the anchors around which all other spaces are organized. They are defined on three sides with glass walls to allow for the exciting work happening in these spaces to be visible to all. To offer maximum flexibility the glass walls are also operable to allow the rooms to expand and contract depending on program needs.

In addition to the digital learning on display, the design incorporates large expanses of writeable wall surface to support analog activities.

Second, the design preserves a sense of openness and visual connectivity between program spaces.

The configuration of open and enclosed study and tutoring spaces were carefully placed to help zone the floor plan both acoustically and visually.

These spaces act as the connective tissue and the character of the walls defining them, whether glass or eroding solid walls, help to ensure that a dialogue between the various program areas is maintained.

Third, the design maximizes views to the outside and the ability for natural light to infuse the space.

All program elements are oriented in a linear fashion to maximize daylight and views from the windows on the north and south elevations. Therefore, the placement of open and closed spaces, as well as location of transparent and opaque partitions, is carefully composed.

Finally, the design offers balance in creating a sense of comfort and wellness amongst the digital technology.

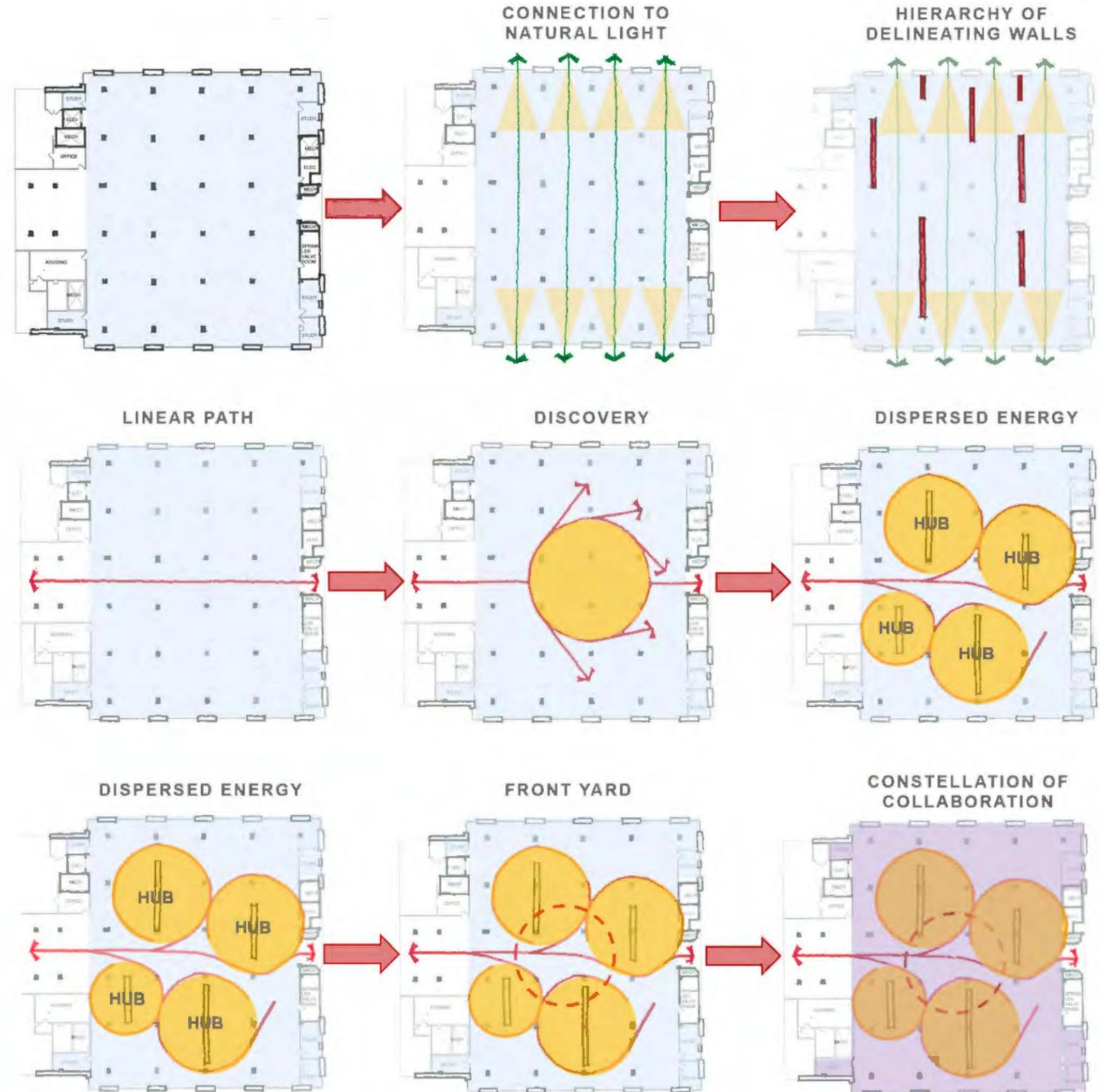
A simple palette of materials is envisioned - with wood being the primary feature material to create a sense of warmth - The students surveyed expressed for this to be a defining character of the new space. The placement of wood will also define key spaces – such as the primary path of circulation and enclosed group study rooms.

The wrapping of wood from the floor, up the wall, and onto the ceiling creates bookends on the north and south sides of the space and helps zone the largest concentration of open group study and tutoring space, which has been strategically placed next to the natural light.

Student comfort and wellness is also achieved by incorporating a variety of spaces to support individual focused work as well as group collaboration, and by a variety of furnishings to support different types of activities and posture preferences.

The design evolution is represented on the following pages.

Diagrams representing the progression of the concept design in response to the character and spatial objectives of the existing space:



CONCEPTUAL PLAN DIAGRAM

The primary point of arrival to the Digital Research Lab is along a central path that connects the existing student computer area with Special Collections. A new connection point will be added adjacent to the existing Circulation / Reserves desk to better facilitate the flow of people to and from the space.

The placement of the major program areas, the Center for Geospatial Analysis (CGA) and the Visualization Lab, in the heart of the Digital Research Lab (DRL) serve as the hubs around which everything else radiates. The visual connectivity between these spaces will facilitate a cross pollination of activity and study. The proportions of these rooms are defined by the existing structural grid (appx. 23' x 23'), with care to ensure that sight lines within the rooms are not compromised by columns.

Directly adjacent are open Group Study and Consultation spaces which create welcoming 'front porch' areas for programs to spill out onto. The location of the Genius Bar / Help Desk ensures that it is visible to both people entering the Digital Research Lab, as well as people using the adjacent program spaces, as support will be a key resource within the DRL. That support is also provided by faculty and resident experts whose offices will be located along the east edge, making them easily accessible for students.

Clusters of open and enclosed Group Study / Tutoring spaces around the perimeter serve as the connective tissue, and provide students with a variety of options for focused and collaborative work. The largest expanse of open Group Study is concentrated along the day-lit north and south edges, providing students with views to the outside.

A Prototype/Experimentation Space near the entrance to the DRL serves as an important placeholder for future programs and digital scholarship needs.

Solid partitions are oriented north/south to maximize daylight and views. In some cases, the partitions are thickened to provide space for mounting digital technology and writable wall surfaces.

The use of glass partitions throughout the space helps to maintain a sense of transparency and openness, and supports a key goal of having learning on display. Operable glass partitions at the CGA Classroom and Visualization Lab allow those spaces to expand and contract depending on program needs.



WALL TYPES

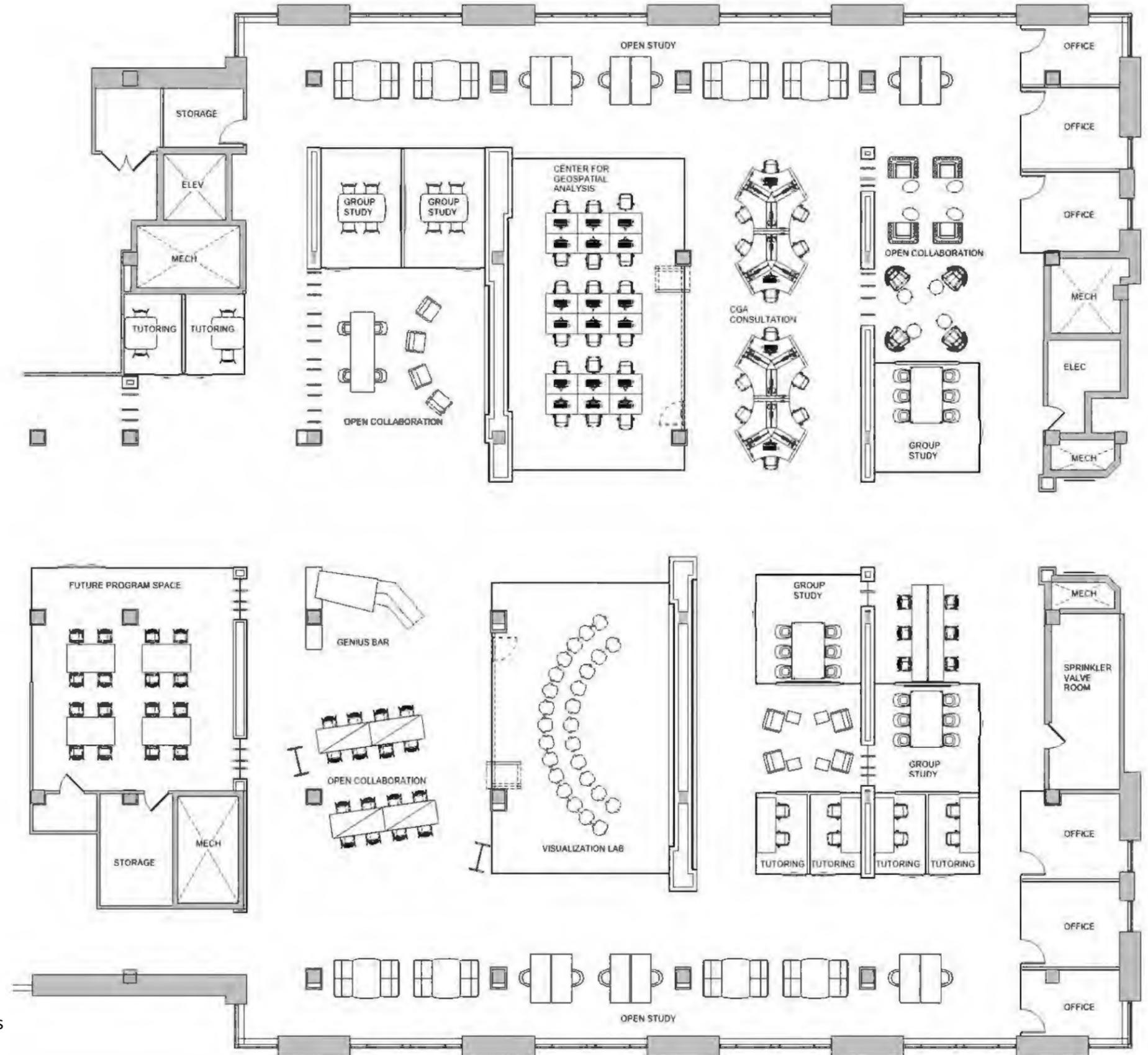
- SOLID (PERHAPS NOT FULL HEIGHT)
- GLASS
- - - - OPEN - NO WALL

OPAQUE / FULL - HEIGHT

SEMI-TRANSPARENT / MEDIUM-HEIGHT

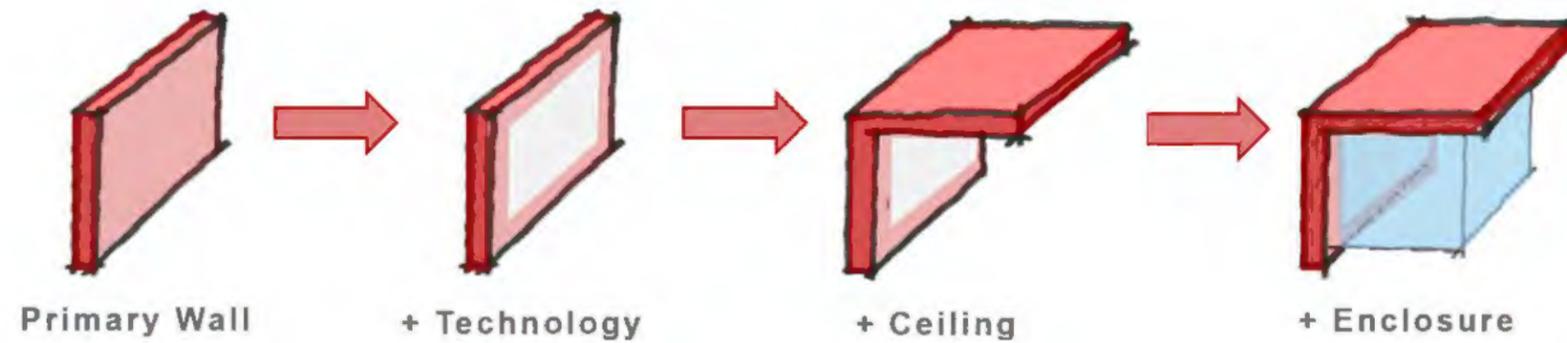
SOLID / LOW

CONCEPTUAL FLOOR PLAN



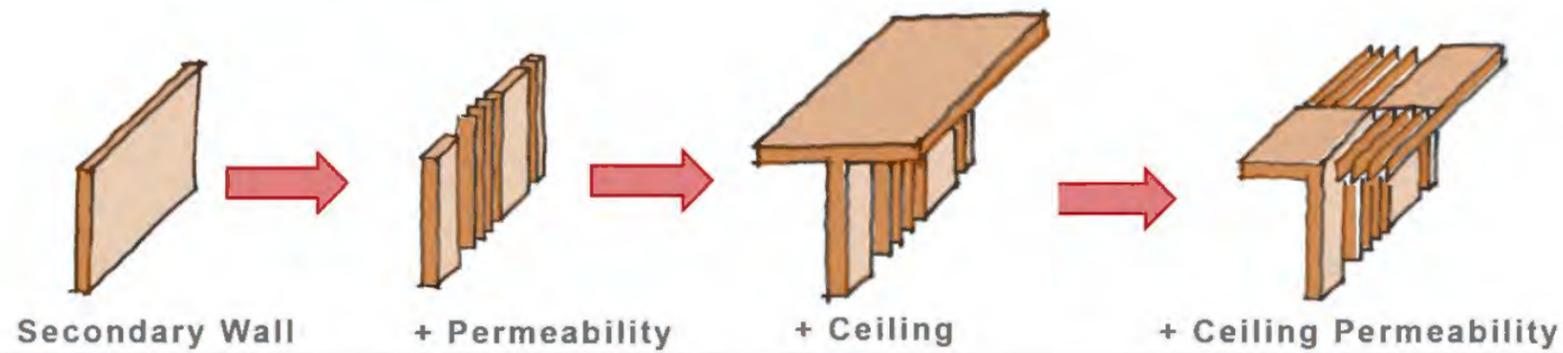
The furniture represented in the conceptual floor plan is for illustrative purposes, and is provided to help convey potential capacities and uses for each space.

DESIGN CONCEPT - Primary Delineating Walls



The primary delineating walls defining the Center for Geospatial Analysis and the Large Scale Data Visualization Lab are envisioned to be the main walls on which technology, both analog and digital will be located. To further solidify them as the primary grounding elements within the space, the walls will be articulated as folding planes to define the ceiling within the enclosed room, as well as the open collaboration areas adjacent to each room. They will be highlighted with an accent paint color for visual interest.

DESIGN CONCEPT - Secondary Delineating Walls



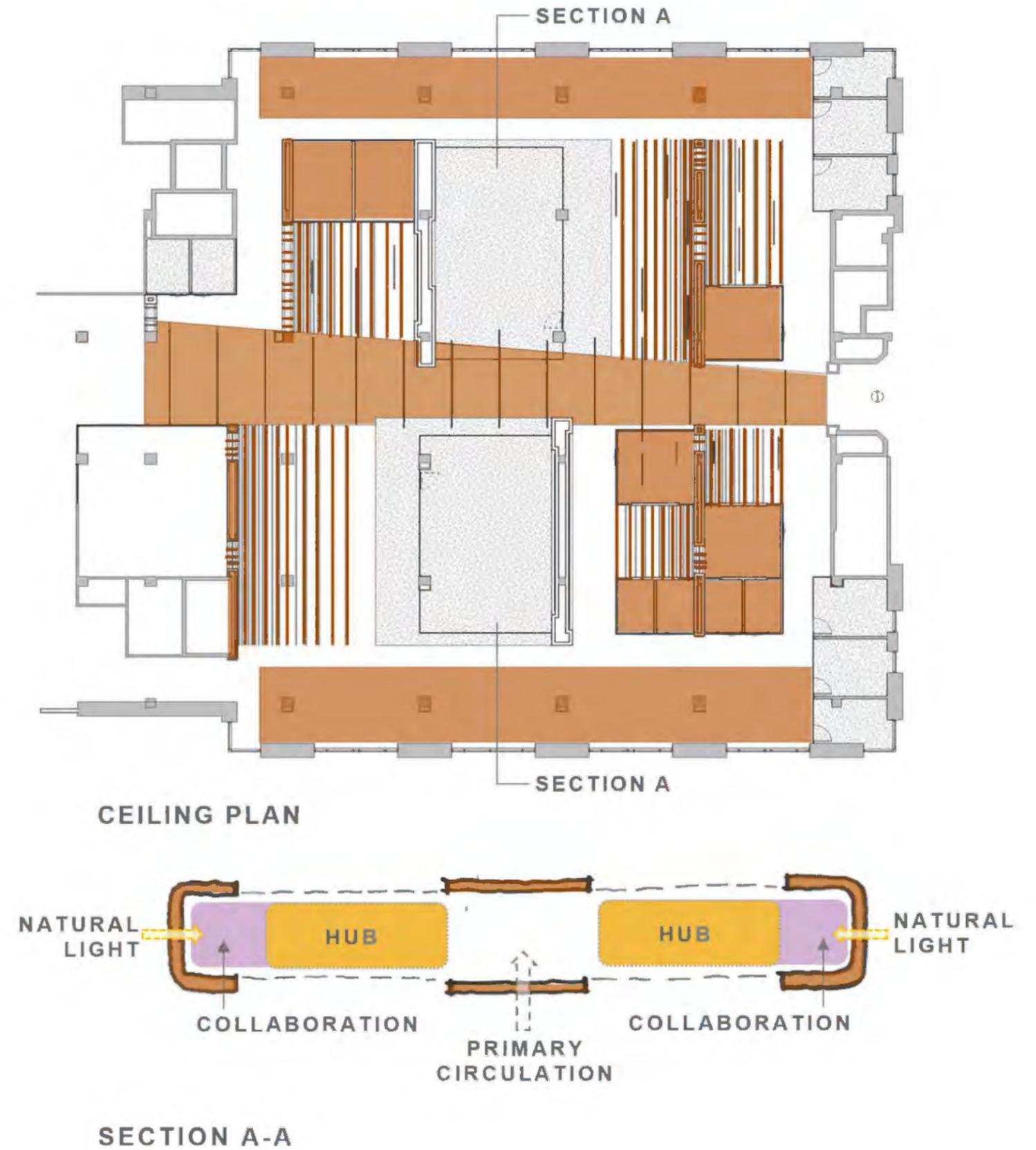
The secondary delineating walls defining the open and enclosed Group Study and Tutoring spaces are envisioned to be clad in wood paneling and trim. The articulation of solid wood walls interspersed with vertical wood panels will provide both enclosure as well as visual connectivity to adjacent spaces as appropriate. Similar to the primary delineating walls, the wood will fold and define the ceiling plane above these spaces.

DESIGN CONCEPT - Unifying Design Elements

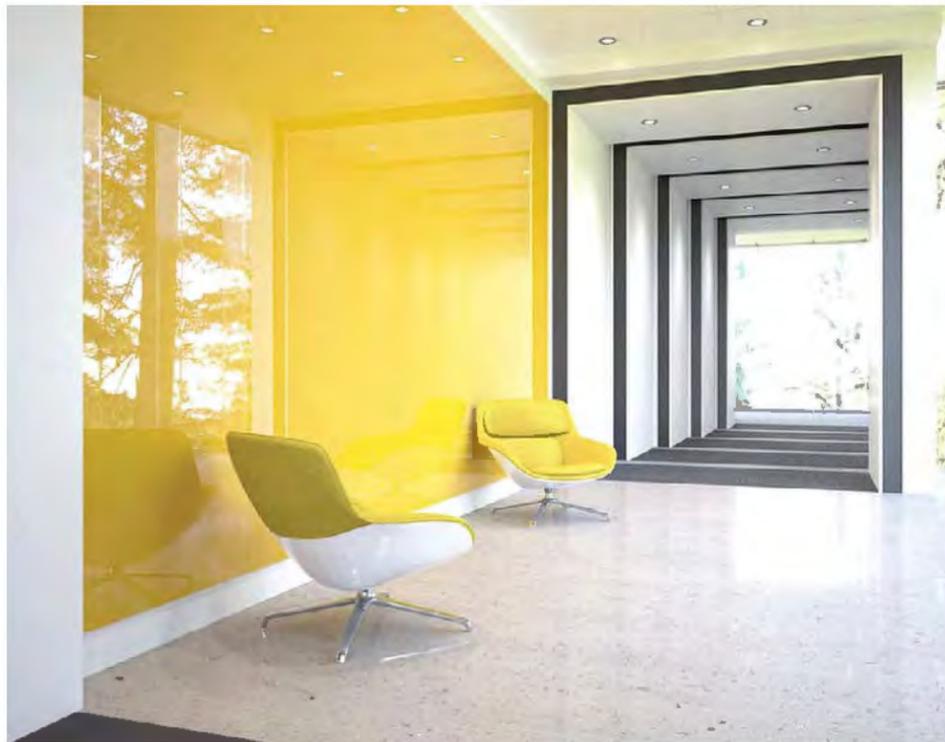
Wood is also envisioned to serve as a unifying material to define both the primary circulation path in the center of the space, as well as the north and south edges. At the north and south edges, wood wrapping from the ceiling to the wall to the floor will create 'bookends' bolstering each end of the space where the highest concentration of both natural light and open study/collaboration occurs.



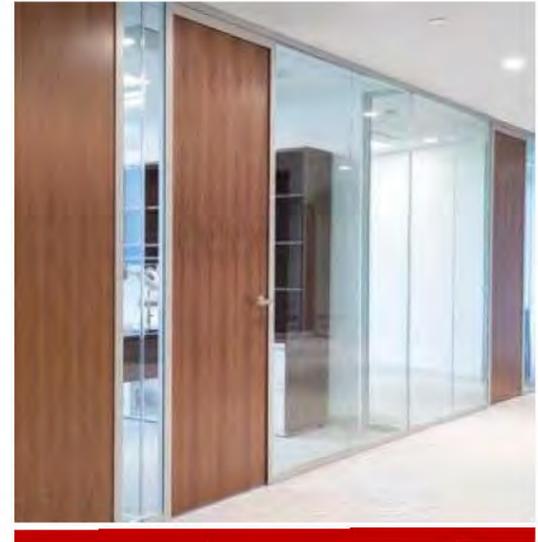
Inspiration Image



DESIGN INSPIRATION - Delineating Walls



DESIGN INSPIRATION - Glass Partitions



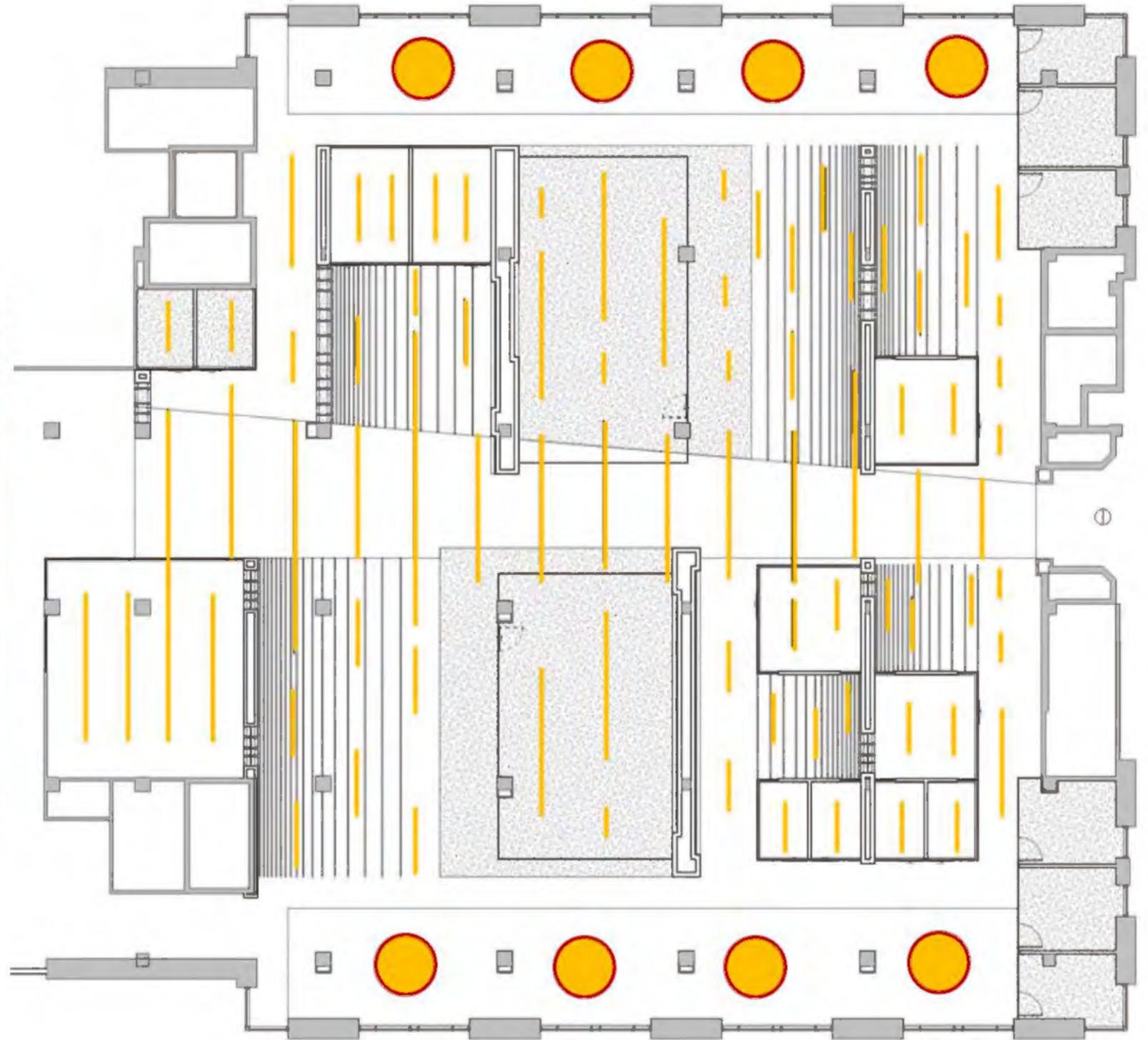
FLOOR PLAN

DESIGN INSPIRATION - Lighting



● ACCENT LIGHTS

— LINEAR LIGHTS



CEILING PLAN



VIEW OF GENIUS BAR AND VISUALIZATION LAB



VIEW FROM GENIUS BAR TO OPEN COLLABORATION



VIEW OF OPEN COLLABORATION & ENCLOSED GROUP STUDY



VIEW OF CGA CLASSROOM & CGA CONSULTATION



VIEW OF OPEN STUDY



VIEW OF OPEN COLLABORATION & VISUALIZATION LAB

BUILDING SYSTEMS NARRATIVE

Mechanical HVAC

The mechanical HVAC concept for the impacted area of study will mirror the existing design. At this time, based on our understanding of the programmed use of the renovated area and the capacity of the existing equipment, no specific change to the primary heating and cooling infrastructure (e.g., cooling tower, air handling units, supply and return air trunk ducts, chilled water piping) is anticipated. The study does recognize that necessary maintenance and/or repairs may be needed as part of the project scope.

The renovated spaces will continue to be served by the existing air handling units in the Basement Level. Supply and return air trunks from the Basement Level currently rise to the First Floor via four existing chases which are oriented within quadrants of the generally square floorplate of the project area. These risers will be retained while all First Level supply and return ductwork branches will be demolished at the point they exist from the space.

In general, the renovated area will be served by new VAV system with new terminal boxes, ductwork and diffusers. Conditioning to renovation, including computer labs/instructional spaces, open and breakout group study areas, offices and storage areas will be outside air mixed with recirculated air. Outside air quantities will be based upon minimum ventilation requirements, for occupant comfort, building pressurization, and or make-up air requirements such as toilet exhaust. Zone reheat capacity will be drawn from the existing heating hot water distribution loop.

Space temperature and humidity criteria will be maintained during summer and winter months. Computer labs/instructional spaces and offices all constitute as fully climate-controlled spaces.

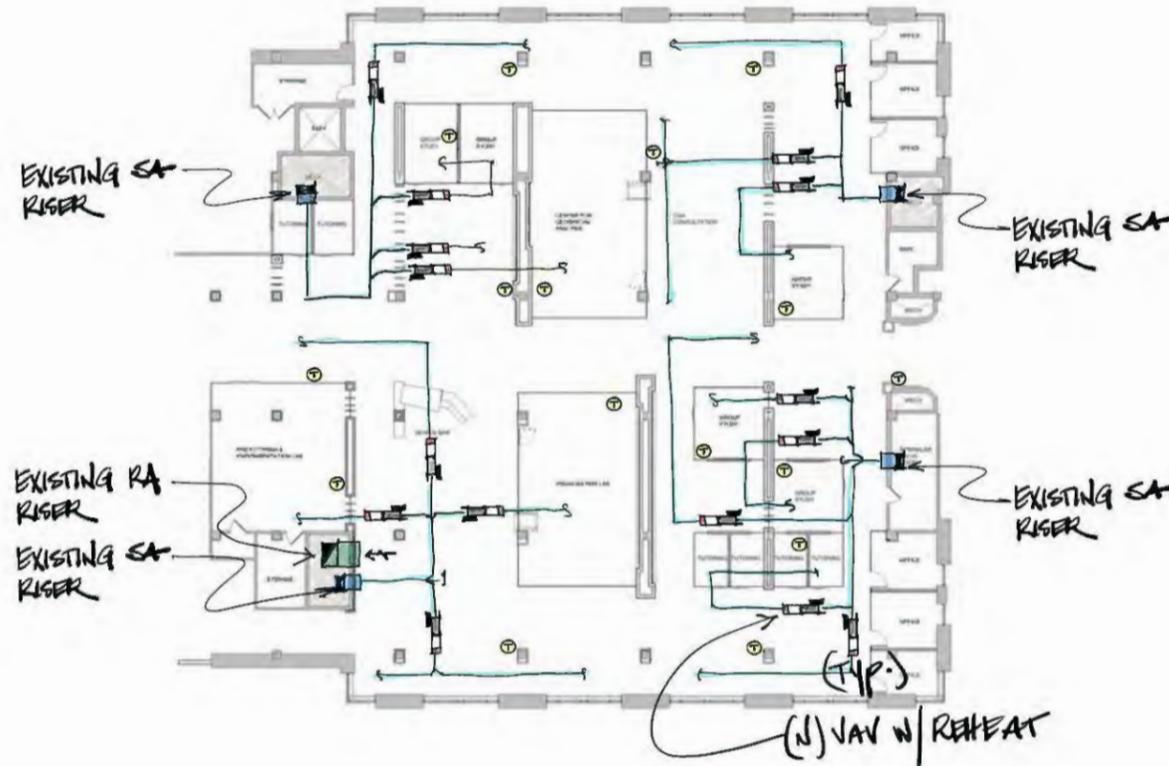
Pressurization will be provided to all program spaces to attain desirable relative air motion, maintain interior climate, and achieve positive pressurization relative to exterior zones (where applicable).

HVAC systems will be sized to accommodate heat gains from lighting, equipment, and people, with densities as defined below:

Each HVAC system will have the capability to run 24 hours, 7 days per week, in the occupied mode. Anticipated occupied time is during the day in fall, winter and spring. This includes evening activities when it is dark outside. Unoccupied time is distinguished as during the late evening and overnight hours. Summer occupancy is assumed to be minimal due to academic schedules.

Systems will be sized to allow flexibility for future renovations, relocating program spaces, and other adjustments. All major equipment will not be oversized to accommodate future building expansions.

The following engineering criteria form the basis of the study analysis and will be used to define and size the systems in subsequent phases of design:



General HVAC Concept

BUILDING SYSTEMS NARRATIVE

Outdoor (Ambient) Conditions:

These criteria will be used for the peak design of HVAC systems and will be based upon the below recorded ambient weather criteria data:

Basis: Williamsburg/Newport News; VA & W&M Facility Design Guideline
Heating: 14 F DB 99.6% of the time, temperature will be above this value.
Cooling: 95 F DB, 78 F WB 99.6% of the time, dry bulb and co-incident wet bulb will be below these values.

Indoor Temperature and Relative Humidity Conditions

These criteria to be met when the outdoor conditions are within the limits described above:

Instructional Spaces/Offices: Summer 72 °F DB minimum, 50% RH max
Open/Closed Study Areas: Winter 72 °F DB maximum, no humidity control
Storage/Unoccupied: Summer 78 °F DB (partially conditioned space)
Winter 68 °F DB

Ventilation Criteria

Amount of outside air / exhaust to be designed for various spaces will be:

Instructional/Office/Study: 5 people/1000 ft², 5 CFM/person, 0.06 CFM/ft²
Storage: 0.5 CFM/ft²
Electrical or A/V Spaces: As required to satisfy calculated heat gains.

Internal Load (Heat Gain) Criteria:

HVAC systems will be sized to accommodate heat gains from lighting, equipment, and people, with densities as defined below:

Office/Study: 1.0 W/ft² for lighting
250 Btu/hr/person sensible heat gain
200 Btu/hr/person latent heat gain
0.25 W/ft² for standard internal equipment
Instructional:
(Visualization/Prototyping) 1.0 W/ft² for lighting
250 Btu/hr/person sensible heat gain
200 Btu/hr/person latent heat gain
0.75 W/ft² for related equipment

Pressurization Criteria:

Relative pressure of one space versus adjacent spaces or outdoors (either negative, positive, or neutral) shall be:

Group Study: Positive
Offices: Positive
Prototyping Lab: Positive
Data Visualization: Positive
Corridors: Neutral or Positive
Elec/Sprinkler Rooms: Neutral

Electrical - Power & Lighting Systems

The scope of the renovation will increase the power requirements of the study area as the use of the space is changing from primarily a library stack and open study zone in the building. This area is currently served by a 208/120V panelboard and associated transformer.

The required increased capacity can be achieved by either: Replacing the existing panelboard and transformer with larger equipment or, the addition of a second panelboard and transformer to supplement the existing.

At this time the second option might be preferred if it is determined that the existing panelboard and transformer have a sufficiently long service life. Further study will confirm such during the next phase of design.

Convenience power will be planned as required by the various functions and densities of usage in the renovated area.

All existing lighting will be demolished and replaced by LED fixtures to satisfy general and specialty illumination requirements. It is anticipated that dimming and custom controls will be provided as required.

Electrical – Low Voltage Systems

Structured cabling infrastructure (e.g., conduit, cable tray, backboxes, etc.) for all data, instructional technology, audiovisual, and/or security systems will be included in the scope of the renovation. At this time, it is assumed that this equipment and cabling will be installed outside the scope of the contract for construction. The scope of these systems will be determined during later phases of design.

Electrical - Fire Alarm Systems

All Fire Alarm and life safety protections shall be extensions from the existing building infrastructure.

Plumbing Systems

At this time, no work is anticipated to impact the existing plumbing systems.

Fire Protection

The entire renovation area will be fully sprinklered as defined by the building code and hydraulically designed in accordance with NFPA 13. Existing sprinkler branch piping and sprinkler heads shall be removed and replaced with new. New mains and branch lines will tie back to existing risers and sprinkler zone assemblies. The sprinkler system will be zoned by floor and limited to an area of 52,000 square feet for light and ordinary hazard spaces. Based on the age of the existing sprinkler system, testing and inspection of the existing piping and sprinkler heads (per NFPA 25) should be evaluated for remediation or replacement.

TECHNOLOGY NARRATIVE



The technology to support the renovated spaces will have a common theme. Wireless network access is anticipated to be ubiquitous throughout. Collaboration, both in the room, and with remote participants, will be designed as part of the spaces, with appropriate infrastructure. The actual technology that will be implemented will be scaled appropriately to the size of the space but will have the following common elements.

Display

Large format displays will be sized for the viewing distances within each space. Multiple displays are anticipated for each area. Each display will have interactive capabilities. Interactivity can be provided at the display itself, or by an interactive tablet-like device. Connection to the displays can be from dedicated computers in the room or from personal devices. Connectivity can be provided both from wired connection points as well as wirelessly. Accommodations can be made for multiple sources to be connected and displayed at one time.

Remote Collaboration

To facilitate effective collaboration between participants in the room and participants outside the room, the experience should be the same regardless of location. To that end, cameras and microphones should be positioned so that far end participants can effectively see and hear the participants in the library, as well as being able to see content, share content, and notate content in the same way as the participants in the library. These cameras and microphones would need to operate seamlessly to provide appropriate views and pick up the necessary sounds, while minimizing background noise.

Ease of Use and Support

The successful use of technology can be improved through the implementation of intuitive systems, simple instruction sets, and timely help desk support. As participants may be infrequent users of the technology, these factors are important in motivating participants to return and use the technology again. Auto tracking cameras associated with auto mixing/beam forming microphones can assist in providing effective remote collaboration without intervention from the users.

Technology Choices

The technologies that are utilized can vary in functionality, ease of use, life cycle length, and cost. For instance, interactive short throw front projection systems can provide the same size displays as an interactive direct view LED display, but most viewers would indicate that the quality of the image is better on the direct view LED display when viewed from an appropriate distance. However, the cost of the front projection system could be a fraction of the cost for the same size image, especially when including the cost of the infrastructure required to mount and power a direct view LED display. For interactive functionality at the display, direct view LED has an advantage because the user will not block or shadow the image when notating as they would with a projection system. Video displays comprised of thin bezel LED displays can also be utilized. These are available in fixed sizes, so may not fit all applications. As well, the thin bezel lines running horizontally and vertically through the image can be distracting to some viewers.

Sizes of displays are most effective when they are calculated to support the viewing distances within the spaces. Sized too large and the viewers closest to the display may find it uncomfortable to watch. Sized too small, and the farthest viewers may find it difficult to easily read text on the display. Interactivity at the display requires that the display be positioned for users' arm reach, both high and low. In the following phases of design, this will be planned carefully with the size of the display, the viewing distances in the room, as well as the ceiling height in the space. Use case studies can help set priorities as to which of those constraints has a higher priority, depending upon which functionality type will be used most frequently.



APPENDIX 1

SAMPLE DREL CALENDAR

Workshop Title	Date	Audience	Size	Time
Managing Your Digital Identity		grad/faculty	15	30 minutes
Research Ethics		undergrad	15	60 minutes
Copyright Café: Understanding Ownership of Your Work		undergrad/grad/faculty	10	60 minutes
Algorithmic Biases		undergrad/grad/faculty	15	60 minutes
How Scholars and Researchers Measure Their Impact		undergrad/grad	10	30 minutes
Research with Online Primary Sources		undergrad/grad	10	30 minutes
What is Open Data and How Can I Use It?		undergrad/grad	15-Oct	60 minutes
Using Data & Information Ethically		undergrad/grad	10	30 minutes
Building your online presence		undergrad/grad	15	30 minutes
Personal Digital Archiving		grad/faculty	15	60 min
Copyright Café: Remixing media: exercising your copyright		undergrad	10	30 minutes
Digital Humanities Spotlight: Cuban Media Project	lunchtime	faculty/gradd/undergrad	15	60 min
Digital Humanities Spotlight: Equality Lab	lunchtime	faculty/grad/undergrad	15	60 min
Introduction to Data Visualization		undergrad/grad	15	60 min
Statistical Consulting			varies	
Theoretical and Applied Statistical Tools		undergrad/grad	10	60 minutes
Statistical Software		undergrad/grad	10	60
Introduction to Python	afternoon/evening	undergrad/grad	10	60 minutes
All about R	afternoon/evening	undergrad/grad	10	60 minutes
Constructing the Thesis and Argument	Fall/spring TBD	Undergrad (COLL 150 classes)	15-20	50 min
Structuring an Essay for Clear Ideas	Fall/spring TBD	Undergrad (COLL 150 classes)	15-20	50 min
Writing Stronger Paragraphs	Fall/spring TBD	Undergrad (COLL 150 classes)	15-20	50 min
Revising Essays: Editing and Proofreading	Fall/spring TBD	Undergrad (COLL 150 classes)	15-20	50 min
Clear and Memorable Presentations	Fall/spring TBD	Undergrad (COLL 150 classes)	15-20	50 min
U.S. Academic Writing	Fall/spring TBD	Undergrad/Grad (w/Reves Center and GWRC)	25-35	90 min
Beyond the Five-Paragraph Essay	Fall TBD	Undergrad (w/Sharpe Scholars)	20-25	50 min
It's Midterms Season Already?! Strategies and Tips for Success	afternoon/evening	undergrad		30
It's Finals Season Already?! Strategies and Tips for Success	afternoon/evening	undergrad		30 minutes
Is Your Time Working for You? Time Management Strategies	lunchtime	undergrad	10	45 minutes

APPENDIX 2

Digital Research Lab: Planning for Research at William & Mary

Introduction and Summary

The process of discovery, invention, and collaboration are evolving, informing ways we conduct research and scholarship across the disciplines. In addition to the radical changes and possibilities brought by new technologies, our work is informed through intentional design which considers issues such as global impact, diversity and inclusion, sustainability, and integrity throughout the process, not as something apart from it. Time is communicated visually, closed archives reveal themselves, and the research process takes new form in the hands of students, faculty, and staff with diverse skill sets. Scholars describe their work using different labels: artificial intelligence, digital humanities, digital scholarship, open science, data mining and visualization. These are terms which propel us forward and require new, thoughtful approaches taken from multiple disciplines and supported by new tools, spaces, and people. The Digital Research Lab (DRL) will be the William & Mary hub for these activities.

University Wide Thinking (and Planning)

The Digital Research Lab is envisioned as both a service organization and a space. It is an integrated service point that builds University infrastructure and leverages strengths and expertise for the good of the whole.

People from across the institution are being invited to engage in the planning for the DRL:

Stephanie Blackmon, School of Education
Mike Blum, eLearning Specialist and Program Manager
Carrie Cooper, Dean of University Libraries (co-facilitator)
Carrie Dolan, Arts & Sciences
Laura Morales, AD for Collections & Content Services, W&M Libraries
John Drummond, Technology Space Strategist
Dawn Edmonstron, Mason School of Business
Jack Ferraj, Teaching and Learning Application Specialist
Mark Hoffer, Director of the Studio for Teaching & Learning Innovation
Arthur Knight, Williamsburg Project, Film & Media Studies, Arts & Sciences
Larry Leemis, Professor, Mathematics and William & Mary Libraries Scholar
Theresa Longo, Executive Director of the Reeves Center for International Studies
Matthias Leu, Associate Professor, Biology,
Liz Losh, Equality Lab, Digital Humanities, Arts & Sciences
Dennis Manos, Vice Provost for Research and Graduate/ Professional Studies
Anna Milholland, Mason School of Business Librarian
Mike Murphy, Information Technology
Lisa Nickel, AD for Research & Public Services, W&M Libraries (co-facilitator)
Mary Oberlies, Research & Instruction Librarian
Camille Andrews, Research & Instruction Librarian
Amy Quark, Associate Professor, Sociology (the Village Initiative)

Rob Rose, Institute for Integrative Conservation
Anthony Stefanidis, Data Science
Virginia Torczon, Dean of Graduate Studies
Kristy Walker, Teaching and Learning Application Specialist
Joseph Wilck, Mason School of Business, Big Data Analytics
Shannon White, Interim Director of Center for Geospatial Analysis

Space and Place Matters

The Earl Gregg Swem Library has identified 5,000 square feet adjacent to the Special Collections Research Center for the future home of the Digital Research Lab. In summer 2020, bookstacks were removed to uncover the potential of the space. The plan is to engage an architect and designer in 2021 who can assist us with a concept plan and cost estimate for the Digital Research lab.

The DRL will welcome curious faculty and students, to understand their unique needs for digital scholarship support, and to cater to their needs for research, digitization, interface, and data management regardless of major or department. The Lab hopes to attract individuals regardless of their experience or depth of knowledge in technology and digital tools, or size and scope of their intention.

Why the Library?

William & Mary Libraries, as most Academic Libraries, have been involved in many facilities projects in the last fifteen years to ensure that we are meeting the needs of our community.

- The 2005 Swem Library addition produced a state of the art Special Collections Research Center, and increased capacity for technology and open stacks;
- The 2014 renovation of the Reeder Media Center opened alongside a new general education curriculum that allowed us to grow our library instruction program and build community around music, film and the library as a partner in building digital literacy skills;

The 2025 vision includes additional enhancements: the Studio for Teaching, Learning & Innovation and the Digital Research Lab. The Studio will be a faculty hub- a place to spark learning and conversation across the University related to teaching, learning & innovation. The DRL is the nerve center for student and faculty research. It's the William & Mary Digital Humanities Lab, the next generation Center for Geospatial Analysis, and provides new infrastructure for the expected growth in data science. It connects and integrates knowledge across academic disciplines.

Research is often a collaborative venture, one that connects faculty, students, and staff with the greater world in tangible ways. The Libraries are often the place for these connections, with the best digital applications and tools, library professionals with expertise in the organization and design of content for the web, and a track record of building innovative and engaging spaces for presentations, workshops, group work, and integrative learning. The Libraries are often the catalyst for the creation of new knowledge: a historian may be working with our digitized collections, a graduate student may house her dissertation in our open access repository, or a faculty member may look for support to host a large data set of consumer information. Because the library is open to all campus constituents and community members, we are a natural hub for scholarly activity and the pursuit of knowledge. Librarians are experts in the organization, dissemination, and preservation of knowledge. With experience and insight into the publishing process and open platforms designed to provide seamless access to information, we are poised to support a community of knowledge creators -- not just consumers of previously authored text.

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Finally, Swem Library is known as a place to convene decision makers and reach consensus. The DRL will be the place to bring together divergent opinions and diverse points of view as part of the design and research process. New ways of conducting research require new collaborative strategies and ways of opening to new possibilities.

Staffing

The skills to complete these complex and broad projects are not usually held by one scholar in isolation. These projects take a network of individuals with diverse skills and backgrounds who can apply appropriate technologies and digital solutions and strategies from across the disciplines to these research questions. The research problems we grapple with are often too large and too complex to address without support from an environment of playfulness, access to the unique advantages that the digital world has to offer, and a community of fellow learners, authors, and researchers. The Library can foster and create that environment.

Moreover, we will work collaboratively with departments to place undergraduates and graduate students in positions as consultants. The organization includes individuals with specialized skills -- librarians, information technologists, and students skilled in new platforms -- to support work in the digital environment. Overall, the Lab shall have full time faculty and staff, led by a team of at least three professionals: a library professional (new position) with appropriate skills, the faculty GIS leader (formerly the Director of the Center for Geospatial Analysis), the faculty leader with a research agenda, and to include others identified during the planning process.

Guiding Principles

The concept for the Lab is designed around a few guiding principles:

- Our service model is designed around consultation and partnership. The space is more than a computer lab for high-end technology. It is designed to be a space that brings together people with specific questions and people with specific expertise to create new knowledge. We believe in active listening and active engagement: no one knows everything, but together, we know a lot.
- A human-centered design process informs the way we approach problems: we empathize (by observing, engaging, and listening), we help define the problem, we support the ideation and prototyping processes, and we provide mechanisms and strategies for testing and soliciting feedback about the models.
- We work in the context of a technology ecosystem that often reinforces existing inequities. Our ongoing challenge is to offer more opportunities for participatory design, to intentionally align ourselves with good practices for inclusion and adaptability and show our vulnerability and willingness to critique and improve systems, policies, and practices that are flawed. Our goal is to promote more equitable access to information and to effectively advocate for inclusive information systems design in scholarship and learning, space and design. We are especially interested in letting those who have traditionally not been in power help determine the design and ongoing best use of the space and services.
- Scholarship is about breaking the boundaries of established disciplines. If this work could be accomplished in any one department or center on campus, it would be. However, our approach brings disciplines together so that complex research problems are examined with multiple lenses and perspectives. We believe that to understand the complex problems of research today, we need expertise from traditional disciplines and the invention of new ones.

Projects and Programs

We envision these type activities happening in the Digital Research Lab:

- Production classes for GIS or programming or applications
- Flexible space for working in small groups, consulting, handling one-on-one tech work, or teaching
- Fast and slow presentations, lightning talks and lecture series on key issues in digital research in our world today
- Individuals with specialized expertise to troubleshoot projects and support ideation
- An entry point for community initiated services for help with data analysis and digital projects

A few potential projects which could be supported by the Lab:

- A humanist who has created a data set so large can find someone to help support the advanced programming and metadata structure needed to organize and interpret the findings.
- A historian can work with a group to digitize a large corpus of documents and create her own online database of images and transcriptions for open access use.
- A group of students can follow through on skills built in class and workshops to apply GIS coding and mapping to create interactive maps with layering for multiple data sets.
- A group of faculty can gather for cross-university programs and discussions on topics that spark new interest in research collaborations, in new digital applications for research, and in new lenses to view and accomplish their work.

We expect that classes and events in the Lab may include skills such as:

- Data visualization
- Data / Text mining primary sources
- Data sets at W&M for mining
- Digitization of analog materials
- Planning digital projects
- Creating metadata or naming authority files
- GIS
- Web & applications development

Space elements

We intend for the space to support and bring together the work in existing labs across campus such as the Equity Lab, the Center for Geospatial Analysis, and the Social Science Research Center. Some of the elements of the Lab space would be:

- Flexible furniture and aesthetically designed space to draw people in and help them be comfortable and well-outfitted to work in a variety of modes
- Open, visible space that allows cross-pollination to occur and curiosity to be sparked
- Deliberate areas for collaboration, from mid-sized workshops to impromptu meetings and huddles
- Intelligent, efficient, adaptable space for high-end computing, applications, devices, and media
- Drop in working space that doesn't need prior scheduling
- Lab for prototyping solutions
- Generous screens and walls for displaying and analyzing visual data
- Co-location in the Swem Library with helpful services and spaces such as

APPENDIX 2

- The Reeder Media Center with its Cox and Ford classrooms, 8 Multimedia Production Studios, a screening room, a collaboration space and lab workstations, and the Media Production Room;
- the Studio for Teaching and Learning Innovation;
- the Special Collections Research Center;
- the Information Commons and Graduate Student Commons;
- the Makerspace;
- and a range of quiet and collaborative spaces, innovative collections, and information professionals and staff to support the hours and programming of the Lab.

Team

A growing interest group of faculty and students is shaping plans with us for a multidisciplinary, digital research lab on the first floor of Swem Library with high-end equipment for computing, presentation and co-lab space for experiential learning, and access for people across schools and departments. President Rowe has called this future space a kitchen lab, where new techniques, data sets, and applications can be explored and experimented with alongside library professionals, faculty, and students with playfulness, creativity, and a welcoming, friendly style.

Individuals whom we have consulted with directly include:

Stephanie Blackmon | Lawrence Leemis | Maurits van der veen | Jamie Settle | Liz Losh | Rob Rose | Mike Murphy | Mark Hofer | Matthias Leu | Graham Henshaw | Dennis Manos | Virginia Torczon | Mike Blum | Carrie Dolan

Other Digital Research Labs around the Country

Brown University

<https://library.brown.edu/dsl/>

Rochester

<https://dslab.lib.rochester.edu/>

Michigan State University

<https://lib.msu.edu/dslab/>

McMaster University

<https://library.mcmaster.ca/spaces/sherman>

Columbia University

<https://library.columbia.edu/services/digital-scholarship.html>

Special Relationship with the Humanities & Social Sciences

Because of the unevenness of grants and funding across disciplines in the humanities and social sciences, some scholars can be disadvantaged by structural issues; often, there aren't large grants for big idea projects or start up funds for labs or preexisting technology structure that can support new needs.

We believe the libraries and the university must support the tech needs of these scholars on an ongoing basis -- not for standalone projects but at a more stable and programmatic level. Creating a space and programming for the Digital Research Lab is one part of a broader institutional strategy to build sustained funding and support for scholarship outside of areas that traditionally see more funding and digital support services.

Papers & Press

Design for Diversity | Toolkit for those who would advocate for more inclusive information systems. Supports those who work on issues such as algorithm bias, collection of materials, intellectual and cultural property, metadata and nomenclature, technical design and user experience.

<https://des4div.library.northeastern.edu/user-guide/description-of-topics/>

Joan Lippincott | For many years, Joan has studied digital scholarship centers and labs across the U.S. and Canada and does a good job of covering the scope of these spaces including their design, services, personnel, and funding models.

<https://www.cni.org/about-cni/staff/joan-k-lippincott/publications>

<https://er.educause.edu/articles/2014/6/trends-in-digital-scholarship-centers>

MIT Design Lab & Whiplash by Joi Ito and Jeff Howe | At MIT, the Design Laboratory is remarkable for its context of broad-based technological innovation and an open culture of sharing. Those in the Lab pursue research, execute practical design and art projects, and engage in scholarship and criticism. The book, written by the recent past director of the Design Lab (from 2011 - 2019), distills the lessons of our faster future into 9 organizing principles for navigating and surviving this tumultuous period of great change and upheaval.

<https://design.mit.edu/about>

Contact

Lisa Nickel | 757.221.1777 | lnickel@wm.edu

Carrie Cooper | 757.221.3050 | ccooper@wm.edu

Amber Hall | 757.221.7646 | anhall@wm.edu

Project Planning Team

Amber Hall, Facilities Project Manager

Lisa Nickel, Libraries

Virginia Torczon, Arts & Sciences

Stephanie Blackmon, Education

Ed Aractingi, CIO

Carrie Cooper, Libraries

Peggy Agouris, Provost (as needed)

Dennis Manos, Research (as needed)

APPENDIX 3

Swem Library Study LEADERSHIP TEAM POLL

Q1 What types of contemporary and/or traditional library activities and/or student experiences do we want to particularly support and encourage with the renovated spaces?

Answered: 7 Skipped: 1

#	RESPONSES	DATE
1	Collaborative spaces that allow for students to complete projects together, but also can be used for individual work, so there needs to be some way to contain noise levels. Areas where teaching can occur whether in large or small groups - this might require ability to share screens/project. Furniture needs to be mobile.	7/21/2021 4:52 PM
2	Learning about and developing different ways to visualize data (both quantitative and qualitative) for research projects; development of multimodal projects	7/21/2021 2:13 PM
3	group work, informal interaction, access to research tools and tech resources, maybe gallery space to display student work, connection with other library spaces (not closed off), some space suited for focused/individual work	7/21/2021 10:44 AM
4	Data visualization, coding, GIS, group work, sharing content on large screens, teaching, peer to peer instruction and interaction	7/20/2021 7:54 PM
5	Spaces to read and study quietly, but also spaces to collaborate and explore ideas Areas for more active engagement	7/20/2021 4:55 PM
6	Quantitative skills support, especially in statistical analyses and modeling. And some support for basic coding and programming, especially in R and Python. It would also be great to provide support for data visualization. We currently do well in supporting writing and literature-based research skills, but we are sorely lacking in these fundamental quantitative skills. These types of skills are the building blocks for the sciences, much of the social sciences, and are increasingly relevant to the digital humanities.	7/20/2021 4:40 PM
7	Interdisciplinary research space for students/faculty	7/19/2021 6:15 PM

Swem Library Study LEADERSHIP TEAM POLL

Q2 Are there types of library activities we should NOT configure the renovated spaces to encourage and support?

Answered: 3 Skipped: 5

#	RESPONSES	DATE
1	General hang-out space - this should feel more like a community, purpose-driven space	7/21/2021 2:13 PM
2	Generic Study Space	7/21/2021 10:45 AM
3	I think of this space as generative and active, so it might be wise to avoid designing spaces where students want to camp out for long periods of individual study. Those spaces are important, too, so making sure there is a balance throughout the library seems important.	7/21/2021 10:44 AM

APPENDIX 3

Swem Library Study LEADERSHIP TEAM POLL

Q3 Can you identify 2 or 3 exemplary spaces (academic or otherwise, at W&M or elsewhere) for the renovation? If you can indicate what about them is particularly successful, please do.

Answered: 8 Skipped: 1

ANSWER CHOICES	RESPONSES	
Space 1	100.00%	8
Space 2	62.50%	5
Space 3	50.00%	4

#	SPACE 1	DATE
1	Georgia State University- The CURVE- http://sites.gsu.edu/curve/interactwall/	7/26/2021 10:23 PM
2	W&M Entrepreneurship Hub on Richmond Road	7/21/2021 2:13 PM
3	UF Smathers Library Special Collection (Art and a mix of Historic and modern feel)	7/21/2021 10:45 AM
4	Reeder Media Center (Swem Library)	7/21/2021 10:44 AM
5	Georgia Tech library (renovation)	7/20/2021 7:54 PM
6	Cox Classroom (versatile space for workshops or just collaborating)	7/20/2021 4:55 PM
7	The CGA supports geospatial training well because of the support for the needed technology and having adequate work space for each student, arranged in a way that instructors can move easily among students. Something similar might work well for quantitative skills training and support.	7/20/2021 4:40 PM
8	Entrepreneurship Hub creates space for student teams	7/19/2021 6:15 PM

#	SPACE 2	DATE
1	UVA Scholars' Lab: https://scholarslab.lib.virginia.edu/	7/26/2021 10:23 PM
2	CURVE at Georgia State	7/21/2021 2:13 PM
3	Georgia Southern University Library (Modern feel with warmth of wood)	7/21/2021 10:45 AM
4	Alan B. Miller Entrepreneurship Center (W&M Business School)	7/21/2021 10:44 AM
5	Temple university Library	7/20/2021 7:54 PM

#	SPACE 3	DATE
1	Emory Center for Digital Scholarship: https://digitalscholarship.emory.edu/	7/26/2021 10:23 PM
2	NC State Library (Modern, clean lines, good use of light and colors)	7/21/2021 10:45 AM
3	Florida Tech Digital Scholarship Laboratory	7/21/2021 10:44 AM
4	NC State Hunt Library	7/20/2021 7:54 PM

Swem Library Study LEADERSHIP TEAM POLL

Q7 Are there spatial attributes of the current space that need to be maintained/preserved through the renovation process?

Answered: 5 Skipped: 3

ANSWER CHOICES	RESPONSES	
1	100.00%	5
2	80.00%	4
3	0.00%	0

#	1	DATE
1	Openness	7/21/2021 4:52 PM
2	Different kinds of work spaces	7/21/2021 2:13 PM
3	sense of openness	7/21/2021 10:44 AM
4	Nice natural light	7/20/2021 7:54 PM
5	If there are office spaces they will still need to be functional for phone or computer calls	7/20/2021 4:55 PM

#	2	DATE
1	Lots of light, openness	7/21/2021 2:13 PM
2	connections to other library spaces	7/21/2021 10:44 AM
3	Group work	7/20/2021 7:54 PM
4	Office spaces: should feel open but still have some elements of privacy	7/20/2021 4:55 PM

#	3	DATE
	There are no responses.	

APPENDIX 3

Swem Library Study LEADERSHIP TEAM POLL

Q8 In terms of spatial character, are there ON-CAMPUS study/learning spaces that resonate with students as uniquely desirable?

Answered: 4 Skipped: 5

ANSWER CHOICES	RESPONSES
Space 1	100.00% 4
Space 2	100.00% 4
Space 3	25.00% 1

#	SPACE 1	DATE
1	Reeder Media Center	7/26/2021 10:23 PM
2	I like the entry and feel of the Reeder Media Center	7/21/2021 2:13 PM
3	Swem Read & Relax (for interactive study, or for when significant background noise is preferred).	7/21/2021 10:44 AM
4	Grad commons swem 2nd floor	7/20/2021 7:54 PM

#	SPACE 2	DATE
1	Business School Entrepreneurial Hub at One Tribe Place	7/26/2021 10:23 PM
2	I like the Ukrop Design Studio as a flexible, collaborative space	7/21/2021 2:13 PM
3	Swem 2nd and 3rd floors (for ample quiet, individual study spaces)	7/21/2021 10:44 AM
4	Wellness center	7/20/2021 7:54 PM

#	SPACE 3	DATE
1	Outdoor spaces around campus, when the weather is good	7/21/2021 10:44 AM

Swem Library Study LEADERSHIP TEAM POLL

Q9 In terms of spatial character, are there study/learning spaces OFF-CAMPUS that resonate with students as uniquely desirable?

Answered: 3 Skipped: 5

ANSWER CHOICES	RESPONSES
Space 1	100.00% 3
Space 2	33.33% 1
Space 3	33.33% 1

#	SPACE 1	DATE
1	"Genius Bar" like an Apple store for tech assistance	7/21/2021 2:13 PM
2	Aroma's Coffee	7/21/2021 10:44 AM
3	Illi coffee shop	7/20/2021 7:54 PM

#	SPACE 2	DATE
1	Lake Matoaka Ampitheater	7/20/2021 7:54 PM

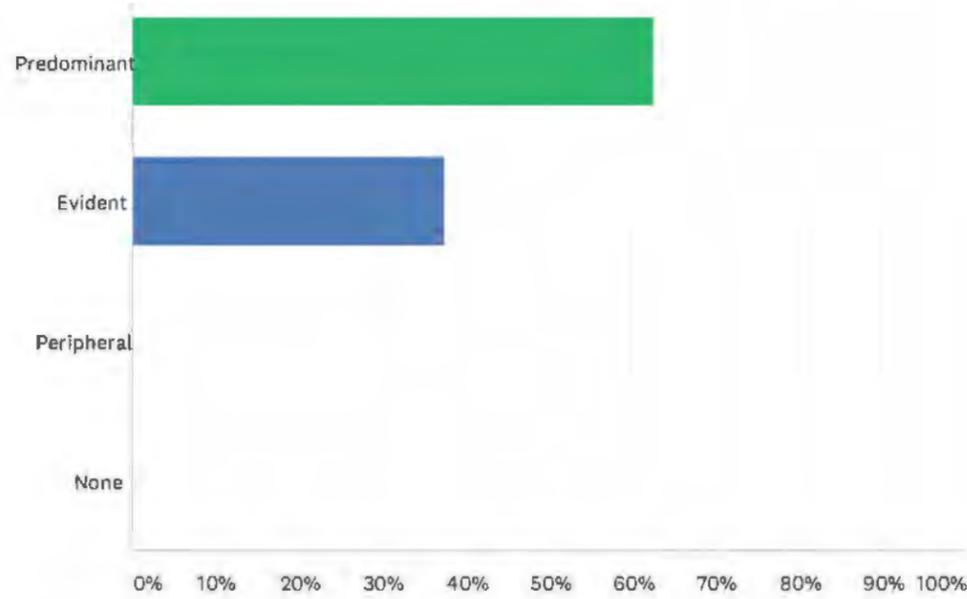
#	SPACE 3	DATE
1	DOG Street	7/20/2021 7:54 PM

APPENDIX 3

Swem Library Study LEADERSHIP TEAM POLL

Q10 Predominant To what extent will current and emerging technology for research and communication need to be an important feature/resource in the renovated space?

Answered: 8 Skipped: 0

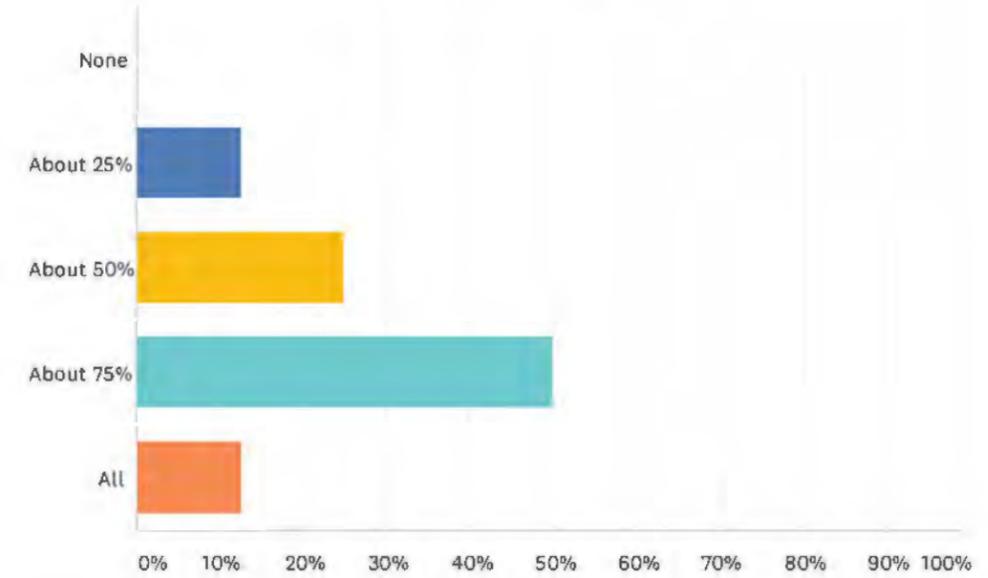


ANSWER CHOICES	RESPONSES	
Predominant	62.50%	5
Evident	37.50%	3
Peripheral	0.00%	0
None	0.00%	0
TOTAL		8

Swem Library Study LEADERSHIP TEAM POLL

Q11 How much of the renovated space should be flexible enough so that students can reposition seating, technology, and partitions to suit their immediate needs?

Answered: 8 Skipped: 0



ANSWER CHOICES	RESPONSES	
None	0.00%	0
About 25%	12.50%	1
About 50%	25.00%	2
About 75%	50.00%	4
All	12.50%	1
TOTAL		8

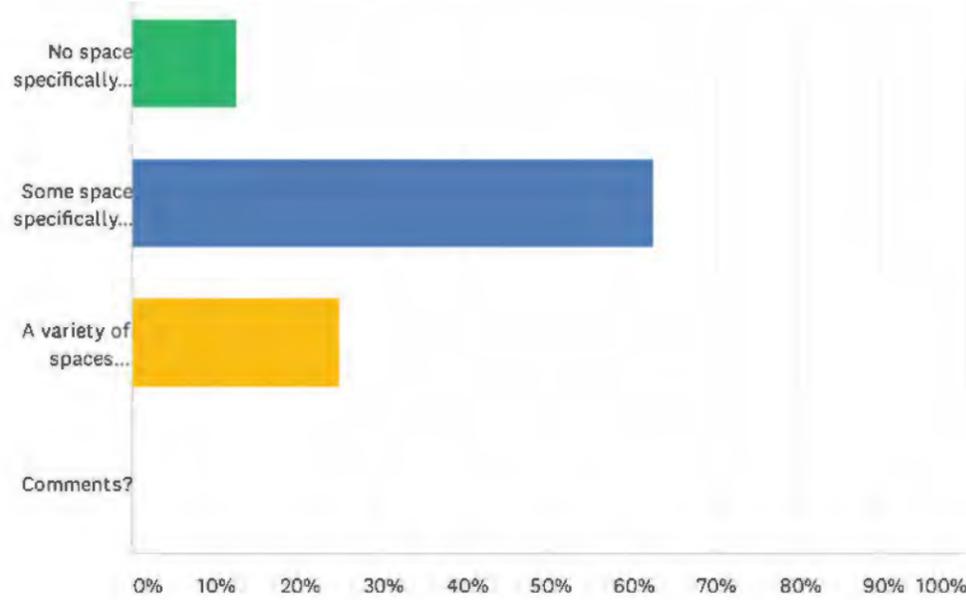
#	COMMENTS?	DATE
1	I think it is reasonable to have some aspects of the space that are not repositionable (info desk, for example), but I consider it important to make most of the space flexible.	7/21/2021 10:44 AM

APPENDIX 3

Swem Library Study LEADERSHIP TEAM POLL

Q12 To what extent will it be important to support individual study and productivity in the renovated space relative to collaborative endeavors?

Answered: 8 Skipped: 0



ANSWER CHOICES	RESPONSES
No space specifically configured to appeal to individuals	12.50% 1
Some space specifically configured to appeal to individuals	62.50% 5
A variety of spaces specifically configured to appeal to individuals	25.00% 2
Comments?	0.00% 0
TOTAL	8

#	COMMENTS?	DATE
	There are no responses.	

Swem Library Study LEADERSHIP TEAM POLL

Q13 When completed, what part of the renovated library will be the highlight of an admissions tour?

Answered: 4 Skipped: 4

#	RESPONSES	DATE
1	Examples of student projects highlighted on screens like in CURVE, students working in groups creating	7/21/2021 2:13 PM
2	Collaborative spaces that are designed for both tech and human interactions. A gallery wall/video display demonstrating the outcomes of these collaborations would highlight the generative quality of this new space.	7/21/2021 10:44 AM
3	Visible technology, examples of student work and students doing interesting high tech work	7/20/2021 7:54 PM
4	The collaborative spaces	7/20/2021 4:55 PM

Swem Library Study LEADERSHIP TEAM POLL

Q14 What phrase would you coin to describe the renovated space to a colleague at a peer institution?

Answered: 5 Skipped: 3

#	RESPONSES	DATE
1	"visible learning collaboratory"	7/21/2021 2:13 PM
2	Modern	7/21/2021 10:45 AM
3	A space for students to engage with experts, peers, and technology to discover, innovate, learn and solve problems.	7/21/2021 10:44 AM
4	High tech collaboration space	7/20/2021 7:54 PM
5	Quantitative Skills Center	7/20/2021 4:40 PM

APPENDIX 4

INTRODUCTION

The purpose of engaging with students was to learn from them their concerns that might be addressed within the context of the partial renovation of the Burger Wing of the Swem library project. The process included an on-line survey that was active concurrent with 2 one-hour focus group that were held in-person.

The survey was open from 9/15/2021 to 10/5/2021 and we received 241 responses.

The student focus groups were held in back-to-back sessions at 11:30 and 12:30 on September 22nd.

Video recordings of the Focus Group sessions are available:

- 11:30 – 12:30 meeting:
<https://us02web.zoom.us/rec/share/sCHWfzjB083dZkufL0D50DenvxVTL9b5QwyJWYhdPGQA84nwLWFEFG2kEMUHENkl.Ym2dOJ-vU50duFcn>
Passcode: zMzL5d#F
- 12:30 – 1:30 meeting:
<https://us02web.zoom.us/rec/share/YIYxGVqXEepKBp9dtFjZ-SQ2o0bl1Kdgi7Lp3ztVEs5gZnU5xRydf8IAIzfscp7.eIVASbxd4sMddtWC>
Passcode: brlm0.zF

The project was in the pre-design stage of data gathering and drafting a preliminary program of future uses at the time of the survey and focus groups.

STUDENT FOCUS GROUPS

After introducing the attending students to the scope of, goals for, and vision for the project, we identified some of the critical issues for establishing a place supporting curiosity, learning and innovation.

Showing preliminary results from the then in-progress student survey, we solicited feedback on several of the topics identified in that survey. Those responses are best summarized in the next section of this report, STUDENT SURVEY.

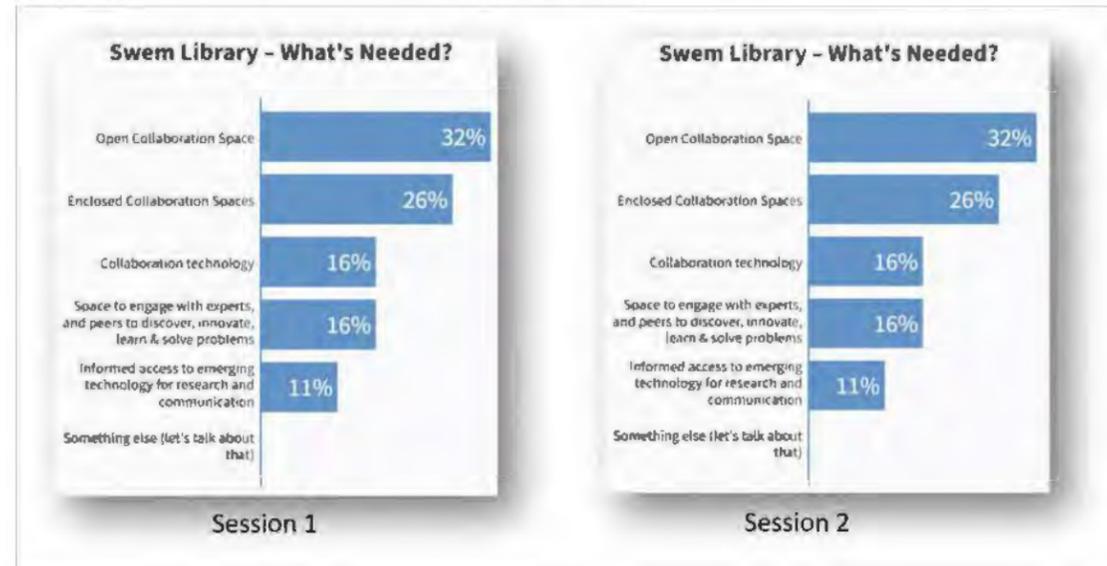
We identified the 3 major components of the renovated space as:

1. Digital Scholarship Lab & Center for Geospatial Analysis
2. Enclosed Group Study Rooms
3. Open Spaces for Student Collaboration

Poll Everywhere was used to stimulate interaction and feedback for the students.

Major take-aways from the 2 student focus group session included comments and feedback on the topics below.

SWEM LIBRARY – WHAT’S NEEDED?



Below are comments from both sessions:

- Enclosed collaboration space will make students comfortable collaborating out loud without bothering others.
- 24/7 access to guidance from staff and/or peers will be important
- Access to multiple monitors is very helpful for individuals and groups
- Smart whiteboards would be very helpful
- Power for student-owned digital devices
- Savvy and responsive IT support for hardware issues
- Access to daylight and views is desirable
- Create a style that does not feel like an office

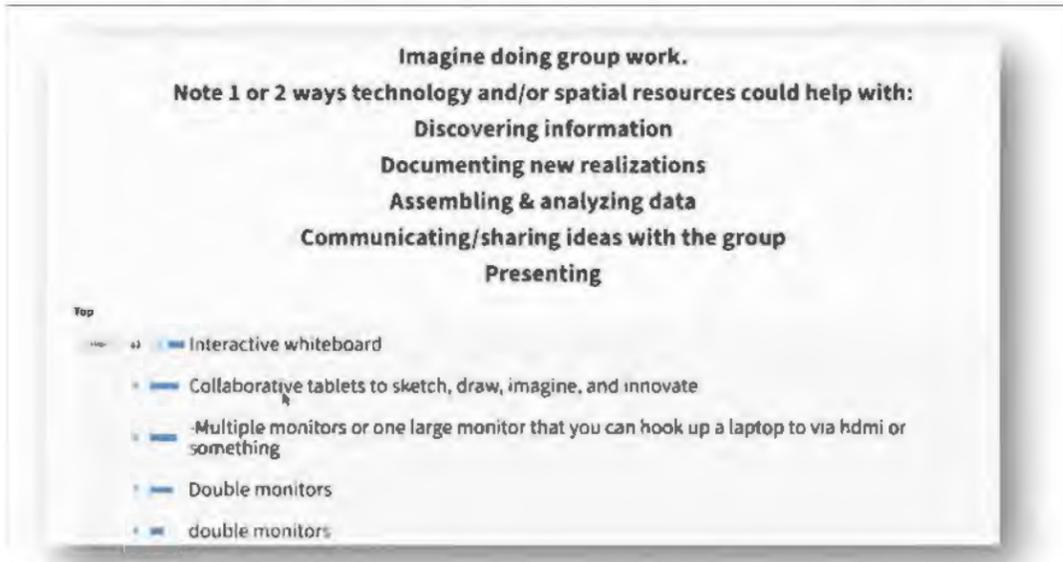
APPENDIX 4

- Non-traditional study settings will be appreciated
- Quality lighting is important, especially for long-term use
- Continue to be a place to meet other students
- Have doors that close to help maintain focus
- Have a spectrum of enclosed/open spaces
- Have visual connections even if sound is separated.
- Comfortably functional furniture
- Be able to use personal technology with large displays
- Be able to study independently in the presence of others
- “cubicles are not needed in the library “I have that capacity in my dorm room”

- together, etc. all allow for multiple people to work together
- Multiple monitors and access to printing - printing is a wall to productivity, esp. when people can't afford it.
- Resources to visualize data and ideas
- Guides to digital platforms
- A video wall with accessible communication methods, speakers, and high resolution

- A smartboard that can export the document at the end to share with participants
- power outlets and Ethernet drops throughout all spaces!
- technology would help a lot with communicating and sharing ideas with a group because it gets inconvenient to look back and forth between other peoples screens

GROUP WORK – WHAT SPACES & TECHNOLOGIES ARE USEFUL?



Below are the comments from both sessions in order most “upvotes” via PollEverywhere

- Interactive whiteboard
- Collaborative tablets to sketch, draw, imagine, and innovate
- Multiple monitors or one large monitor that you can hook up a laptop to via hdmi or something
- Double monitors
- Easier to use audio-visual connection to monitors. (Bluetooth/available hdmi chords)
- Guides for how to properly search for and sift through research literature to enhance the paper-writing process
- Information discovery involves doing long readings so I would like a comfy place to sit that keeps my head at a healthy angle while staring at a screen
- More outlets for technology
- ability to project computer images onto larger wall/screen
- Could help you map out a presentation and how to organize it appropriately (drawing and drafting)
- The most important thing for me is collaboration. Digital whiteboards, multiple tablets to write and collab

Additional comments made on this topic included:

- Physical accessibility is important
- Device agnostic collaborative hardware is needed so that all types (and recent vintages) of student owned technology can be used
- Circulating “personal technology” available at the library will be important for students with less financial resources

EXPANSIVE TECHNOLOGY – WHAT FEATURES ARE IMPORTANT?



Below are the comments in order most “upvotes” via PollEverywhere

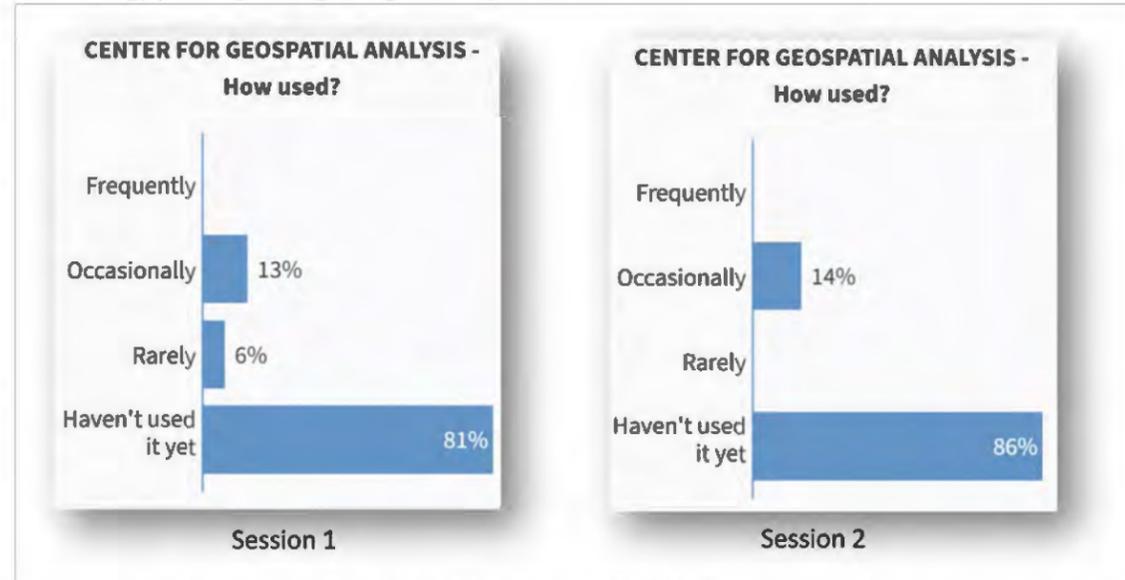
- Touch screen/writing on the screen
- it actually working on a regular basis
- Digital pens available instead of just touch via fingers
- having multiple people writing/working on the same screen
- Annotation, Collaboration, & Back and Forth Communication

APPENDIX 4

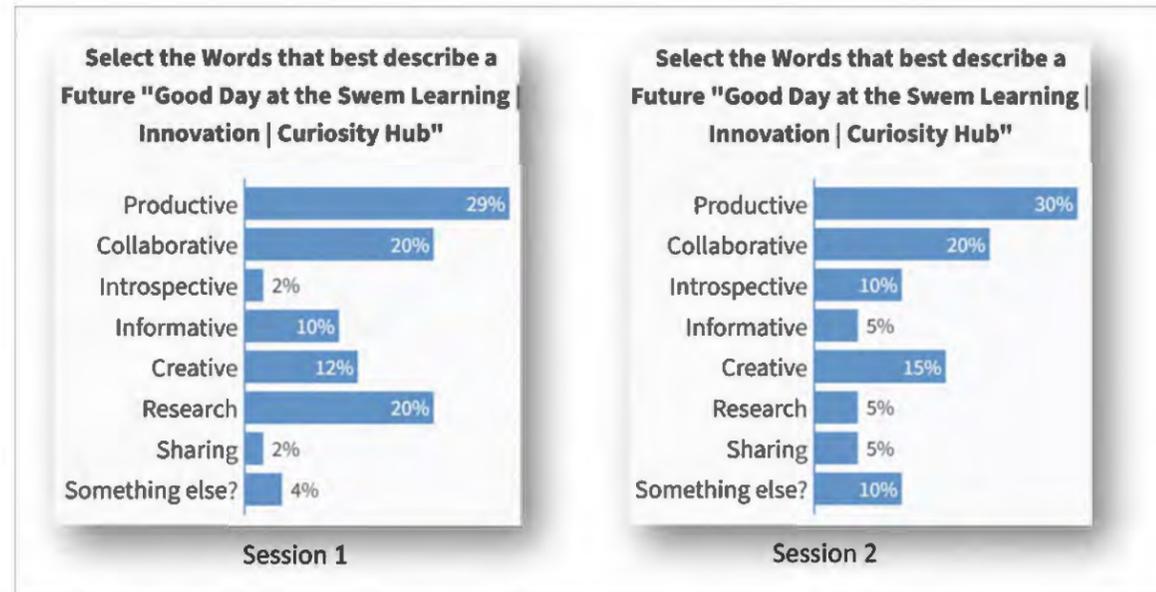
- Not familiar with the features available for such a technology, but I can imagine it would be useful for creating slideshow presentations or free-write / brainstorming on a blank surface (but that's just as good on a whiteboard)
- Can be used as a large whiteboard if that's what you need to draw diagrams or processes, but is more versatile than just a whiteboard & can be used for other things? Idk what else tho
- IT help- all this technology is great, if it is maintained
- Maximizing interactivity and being user friendly. Many times, these big digital machines, are often not worth it due to their minimal usability and the fact that they add little to one's work.
- ease of use
- Projection to bigger space
- camera and sound system
- Drawing and note-taking
- Concept/mind mapping, ability to annotate a website/document
- Noting documents, displaying presentations
- ability to share screens easily
- Instructions on how to use
- Presenting visuals (data, concepts/ideas, etc...)
- Ability to integrate images or videos
- being able to view nonpresent attendees faces
- I think technology would be key in this. Being able to get creative with the tools you can use to build content and collaborate with classmates
- Might be good for presentations or movie watching? But seems gimmick-y for a collaborative work space
- accessibility for folks w physical differences
- Easily correcting mistakes
- I am not familiar, however, perhaps putting up multiple graphs from multiple studies for visual comparison
- I've never seen a video wall, so just having the technology in general would be exciting. I don't know what additional features to even mention.
- I don't know enough about video walls to say

CENTER FOR GEOSPATIAL ANALYSIS – HOW IS IT IMPORTANT IS IT TO YOU?

Generally, the students in attendance were not users of the CGA and were not fully aware of its capacities and how they would be applicable to their academic needs. Some hesitation was expressed by students who did feel particularly “tech-savvy” regarding taking a course about using sophisticated technology possibly having a negative impact on their GPA.



A GOOD DAY AT THE SWEM LEARNING | INNOVATION | CURIOSITY HUB



“Something Else” comments included:

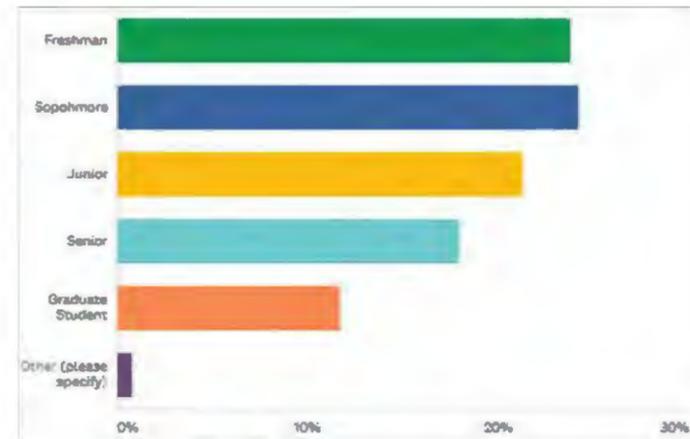
- Having spent time in an environment that does not feel corporate
- Having spent time in a calming, nature-inspired environment
- Having used furnishings configured for ergonomic productivity – including adjustable height standing workstations
- Having spent time in a place with pleasing lighting

APPENDIX 4

STUDENT SURVEY

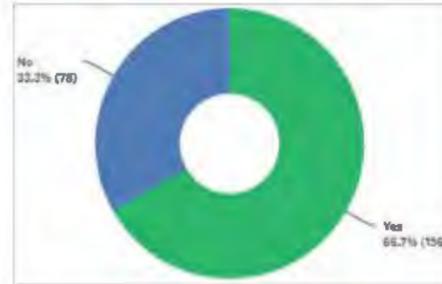
WHO PARTICIPATED

Relative to which year the respondents were in in their academic career, more than 78% were undergraduates. The breakdown by year is as follows, with a good representation of a cross-section of students:

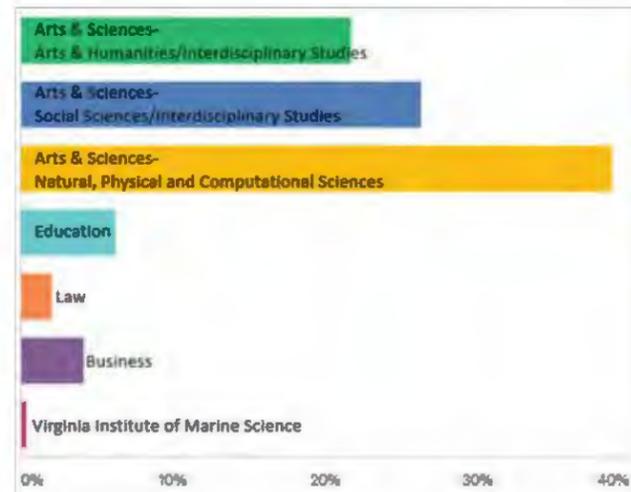


The 2 responses in the “Other” category were: 1) J.D. and 2) Faculty.

Nearly exactly two thirds of the respondents live on campus.



The vast majority of students (more than 87%) had an academic focus in the Arts & Sciences. The major areas of study broke down as indicated in the chart to the right.



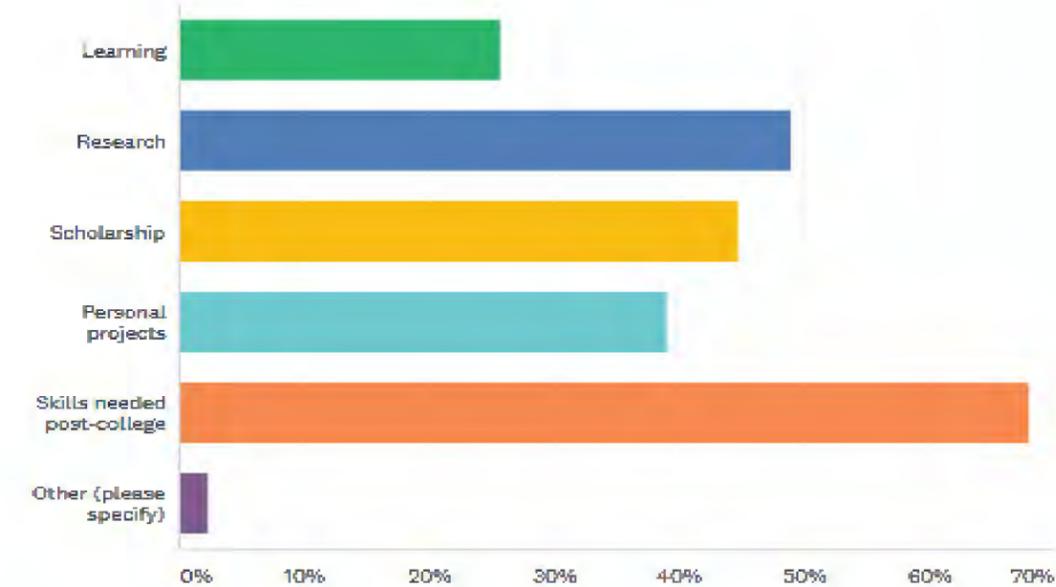
SURVEY RESPONSES

Below are summaries of the various questions that reveal student preferences, attitudes and concerns relative to the forthcoming renovation opportunities for the library.

AVAILABLE RESOURCES

“What things would you like help with for which the resources are not currently available?”

This question was design to solicit opinion about the overall academic experience, not just those directly related to the library and its partial renovation. Below is a graph of the responses we received to the multiple choice question:



Respondents were able to select all options that apply to their needs.

With more than 68% of the responses being “Skills needed post-college” it is clear that students are focused on the relevance of their education to the future work lives, and would seek out resources to help with that if more were available. In terms of scarcity and desirability, resources for “Research” and “Scholarship” were ranked next and relatively close to one another. Resources for “Personal projects” followed behind that and resources for “Learning” were not seen as generally deficient relative to student needs and desires.

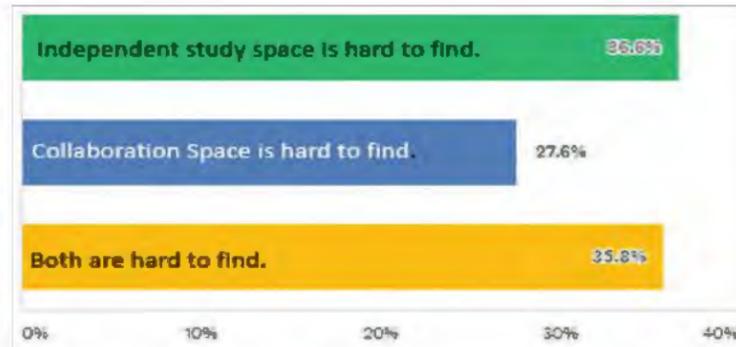
APPENDIX 4

SPACES

The survey posed several questions about types and size and character of space in order to inform the design team regarding crafting space that would appeal to students for a variety of purposes in concordance with the goals of the renovation project.

Independent vs. Group Study spaces

The first was relative to availability of space for working in groups and space for studying independently: “When seeking study space, do you find it more difficult to find space for collaborating or independent study space?”

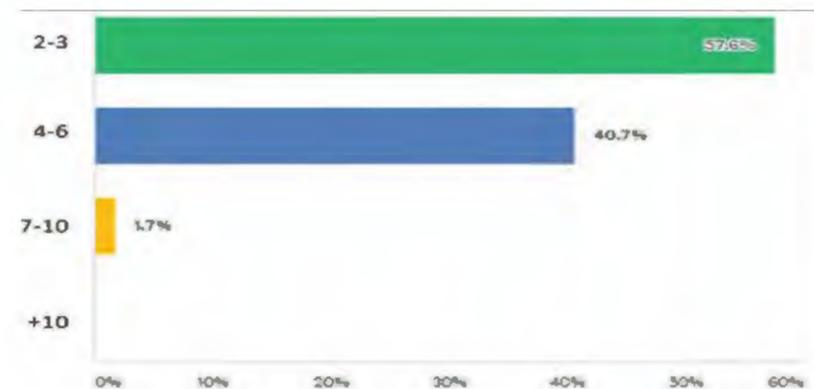


What we see in the responses is that students perceive both types of study space are hard find but independent study space is more difficult. Relative to the renovation project goal of providing additional high performance collaboration space, more than 63% of the students would likely find such spaces advantageous to their study routines.

Study Group Size

Relative to collaboration spaces, an indication of typical group size will be helpful in sizing the rooms and spaces in the renovated area to align with student needs. Below is a graph representing the responses to this question:

“When seeking space for collaborating with others, what is the typical size of your group (select all that apply to your needs)”

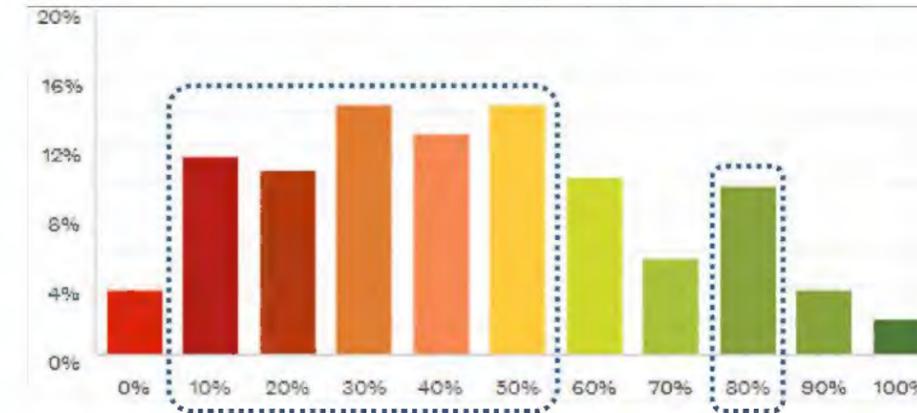


The most pressing need will be for rooms for 2-3 and for 4-6. During design, consideration should be given to crafting some rooms and alcoves that can be accommodating to groups of 6 and sub-dividable for groups of 3 or less.

Study Space Character

This question is first in a series exploring student spatial preferences relative to existing W&M general and typical library study environments.

“Of the time you spend studying outside your personal space, what percentage of time would you choose to spend in a W&M Library space like the 4 below?”



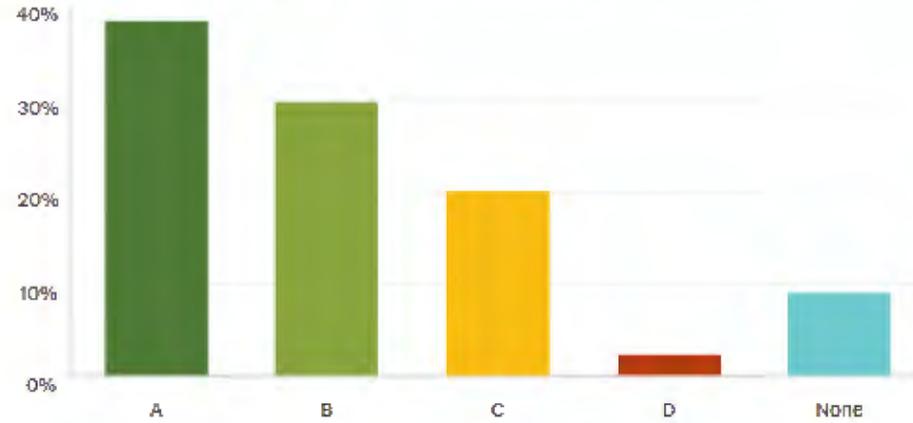
The responses show that most students (nearly 75%) would spend between 20% and 60% of their study time in the environments shown, with nearly 10% interested in spending up to 80% of their time.

APPENDIX 4

Existing W&M Spaces

The next question strove to distill preferences from within the sample images presented:

“Which of the above W&M Library Spaces above resonates most with you?”



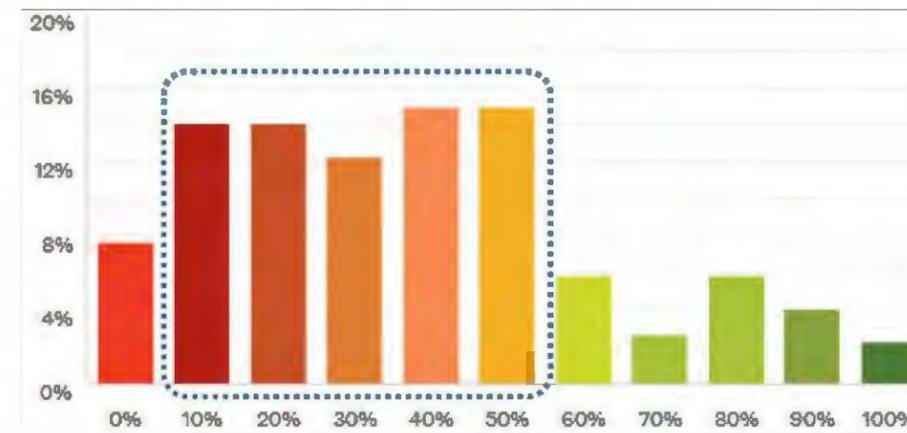
The question had a comments field to capture the perspective of the over 9% of students who responded that “None” of the W&M library spaces resonated with them. Below are those responses, unsorted. (Note that some comments actually express enthusiasm for W&M spaces.)

- | | | |
|---|--|--|
| <i>I do not like to sit in couches when I study</i> | <i>I like the study rooms</i> | <i>I like working at a table on second or third floor</i> |
| <i>I prefer working at tables and chairs rather than on couches</i> | <i>I wish there was something more private and closed off.</i> | <i>None of the pictured spaces have private tables/desks, they seem more focused on socializing than quiet study</i> |
| <i>I like to sit at tables in swem</i> | <i>I like having my own study room so I can listen without headphones and have fewer distractions</i> | <i>I use the learning center allot, along with the reservation rooms, and the computer desk near the front</i> |
| <i>More semi private desks-look at CNU tribble library</i> | <i>I like to have a table when I do work but I like to have the space more to myself than Space B.</i> | <i>I'm a 37-y.o. PhD student with my own home, so I do not need a place to hang out. I need specific resources (see above), or space to use as an office and/or for specific meetings.</i> |
| <i>Where is the lounge??</i> | <i>Not none-The business school and swem second floor are my ideal study spaces, and I would enjoy larger tables like in the B school in swem.</i> | <i>As a graduate student, I work best in low-traffic areas with electrical outlets and table space</i> |
| <i>I like to have a formal table while studying but I don't like going to the B school</i> | <i>Open areas make me uncomfortable</i> | <i>My personal favorite is music library (sorry)</i> |
| <i>Not high enough table in pictures the rest work. A mixture of d and A Would be nice</i> | <i>I study at the computer desks</i> | <i>I don't study in Swem nor hang out there</i> |
| <i>As someone with mental disability, I NEED quiet and private spaces to study. Even the "individual study rooms" in SWEM lack any sound blockage, and I have struggled to find places to do my work as a result.</i> | <i>Too busy and loud</i> | |
| <i>Prefer a table with more independent study space</i> | <i>I prefer to work at a table and my favorite is the tables on the first floor with multiple chairs</i> | |
| | <i>Mostly chairs and desks for me. Not so much laid back in chairs</i> | |

Collaboration Spaces

In the next question we explored student perspective about collaboration space examples from W&M and other colleges and universities.

“What percentage would you choose to spend in a Collaboration Space like these below?”



Similar to the general study spaces at the Swem library, more than 70% of the respondents indicated that they would chose to spend between 10% and 50% of their time in the representative spaces configured for collaboration.

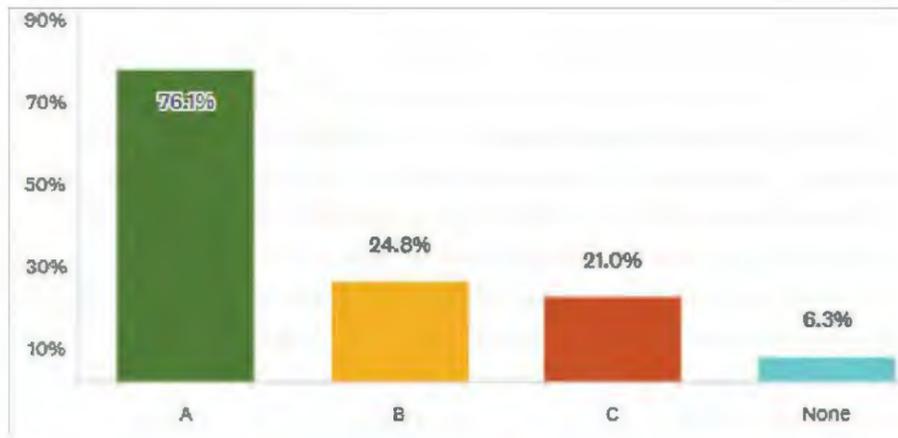
This question also had a comments field to capture the perspective of few students (less than 1%) who responded that “None” of the collaboration spaces resonated with them. Below are those responses, unsorted. (Note that some comments actually express enthusiasm for W&M spaces.)

- I rarely collaborate, so I wouldn't know*
- These would be more useful spaces for me, especially the top one. It would be nice to have more access to computer lab spaces with more programs than the regular Swem computers have (like option C on the following Q - there's no space to comment there).*

APPENDIX 4

The following question asked:

“Of the Collaborative spaces above (from W&M and peer institutions), which would attract you to spend time? (click all that apply)”



Space A was preferred by more than 76% (with a more than 51% margin over the 2nd preferred space) Below is an enlarged view.



There were 11 comments associated with the “None” response. Note that many express a preference for individual study space, and others express a desire for enclosure and/or separation (at least acoustically).

I don't really have people to collaborate with

I need a more casual space to study, I don't want to feel like i'm taking the space from someone else

Again, you need more quiet, noise cancelling areas for your students with learning disabilities, not MORE loud spaces

I have not been to these places

When doing group projects or studying we like to have a space to

ourselves and like an enclosed space to limit distractions

We don't need more collaborative spaces in our library, we literally fight over space during finals for individual studying. If you take up another section of our library with a "collaborative" space you're taking up more of the individual study space we actually need.

I prefer to sit in a chair with a built in desk or alone

I don't spend time in collaboration spaces

See above

I would want enclosed rooms

Group collaboration for my program would be best served by private spaces (with a door) containing tables, plenty of electrical outlets. The current grad lounge in Swem is a great study space, yet it is not ideal for collaboration in that you too easily disturb others.

APPENDIX 4

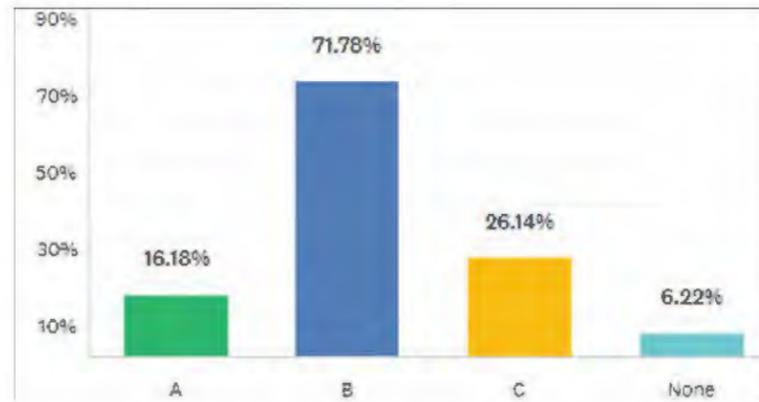
TECHNOLOGY

Technology Rife Spaces

This question gauges student enthusiasm for spaces that are rich with technology – not to select technology (which will change over time) but to garner insight about the character of space and interface with technology that students might find conducive to their endeavors when employing technology.



“Which of the above Technology-Rich Spaces seem most engaging and useful to you?”



Space B was preferred by more than 76% (with a more than 45% margin over the 2nd preferred space) Below is an enlarged view.



Hesburgh Library, Notre Dame

Associated with the “None” response (6.2%) were these comments:

What would be better than either B or C is an independent study space with extra monitors to connect laptops to. Most students prefer to use their personal computer but often could use an extra screen.

All of these environments look corporate and sterile - the harsh lights and basic furniture make me feel like I'm in an office, not a library. Make the library cozy and old-fashioned!

I usually do not have a need for this much extra technology that I have to figure out how to connect to and use

W&M already has plenty of public computers and tvs for students to use

Please make multi-purpose computers available to groups, in an environment like A

We all have our own technology already

Too much emphasis of technology, too little on books and spaces with a sense of history.

Your technology-rich spaces need private areas, need quiet areas. Open floor plans like the ones above can be harmful to your students with noise sensitivity. I would love to have access to technology, but the spaces above are not accessible.

I really only use my personal device

Already available in the basement and nobody uses them. If A, then we're just going to have classes in SWEM which will decrease the available space even more.

You didn't really explain what any of these spaces are for, so I'm not sure how to answer this?

The spaces all just look really crowded and there isn't enough work space

I am not a STEM oriented student, and don't have much use for

technology in a study space that isn't my laptop.

Not sure how I would use this for studying?

I don't generally need technology other than my own laptop to study.

Both B & C are engaging, but none appear to have charging stations. It's hard to find a place to charge your phone/iPad unless you get lucky with a space near a plug.

I have a computer, that's not what libraries are for

I usually prefer to just use my individual laptop and I am rarely in a position where I am presenting to other people. It is also sometimes difficult to transfer files between personal and school computers and/or have the correct cards to connect my own devices

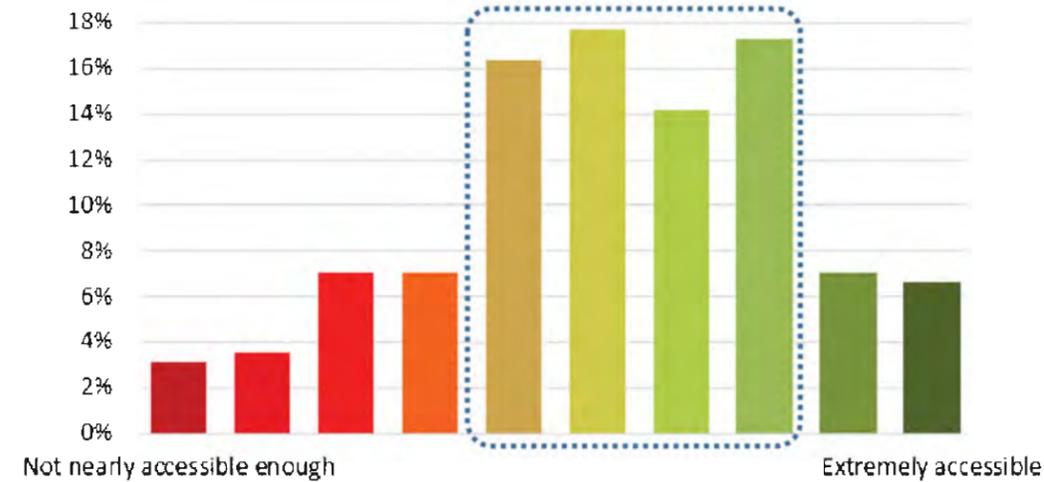
I think large rooms with big presentation spaces (for teaching) with smaller individual workstations with computers and other resources would be most useful to me.

APPENDIX 4

Technology Accessibility & Availability

Following up on the question about spaces rife with technology, the survey asked this question to get a sense of how students felt the ease locating and of using appropriate technological resources:

“How accessible do you feel learning and collaboration technology is at W&M?”



On a rating scale from “Not Nearly Accessible Enough” to “Extremely Accessible” the bulk of students (more than 65%) rank technology access and availability as better than average. (Media response was 55% to the right of center and the mean was at 55.19% to the right of center.) Meeting one one of the stated goals for the renovation project, “Support future growth in academic programs that rely on technology support and infrastructure for new modes of research and scholarship” should result in shifting student sentiment about technology access from “above average” toward “extremely accessible.”

Technical Skills

Related to technology accessibility was this question intended to identify areas where students feel they need additional digital technology literacy:

“What technical skills do you need to strengthen your ability to do digital research?”

A word cloud of the comments shows these highlighted words:



The 91 technical skills comments in their entirety are below. They have been arranged in clusters of similar thought.

GENERAL

Technology skills

I'm not sure.

I'm not sure.

Im not sure

I do not know

Not sure! I am a law student

not sure how to answer

At the point where I have so little understanding that I don't know what questions to have. Workshops and info sessions would be helpful for this.

file management and conversion -- these are critical skills that are rarely taught

I think access is more the problem

Learning how to circumvent paywalls.

Ability to find texts without paying for them.

just more resources

locating the right kind of materials

Navigating various systems and programs.

Be able to navigate swem's website better

Explanations on how to use a combination of printed books and online databases for a research project; explanations of how to use specific databases' search functions to their full power; it would be nice

to have even more opportunities to chat one on one with a research librarian, to the point where it becomes more common and less intimidating

Research

I'd like to have more knowledge of the physical stacks actually, I feel like I'm just wandering around trying to find a book I found in the online catalogue.

HARDWARE/OS

We need more double screen spaces, that revolutionizes writing papers and doing research.

troubleshooting computer issues, clearing up search terms so they get more accurate results

Learning Linux/Unix commands

Learning Linux for cluster operations

Collaboration of technology

SOFTWARE

computer skills

Tutorials in maximizing research database tools like Zotero

Excel skills

Excel use

Using excel and similar programs.

"Working knowledge of Excel website creation and maintenance"

Better data management (Excel, Google Sheets, etc)

stats, excel, etc

Understanding of how to use Excel/Spreadsheet tech, how to create data sets

Learning SPSS better, if that applies

Shortcuts for computers, and learning about different apps to help with research

Understanding the different programs and how to connect my laptop documents to it.

Tricks on how to use excel/use those types of applications more efficiently working with gis

Knowing how to work online platforms and Microsoft office resources, knowing how to efficiently use a search engine with key words or specific searches

DATABASES

Information about data bases the school has access to and how to access them.

I need to learn more about the library databases and also learn how to use the technology that's located in the basement

The ability to navigate data bases and access materials would be nice. Additionally, having more awareness of what all there is to access would be helpful.

Maybe how to properly use the research database and knowing all of the resources I have available.

a better foundation in database browsing

The ability to more easily cite data as well as more options for data

Instruction on navigating the school's resources, such as databases.

Familiarity with available databases and the strengths of each.

knowledge of databases without a paywall other than pubmed to find sources for research

Search entry refinement

"Using online databases"

Sometimes it's a matter of finding just the right search term in order to located relevant materials.

APPENDIX 4

Keyword searching for primary sources and improving my use of finding aids in special collections and other archives

Key terms, learning different platforms

keyword search, knowledge about efficient database search

Database skills; citation skills and when to use what style; how to summarize sources after I find them

Access to bibliographical software

DIGITAL SCHOLARSHIP

The ability to narrow down on the information you want

Citing sources, finding scholarly articles

how to annotate, make captions for content"

"citation management! please promote zotero, etc.

Filtering databases and quickly pulling relevant information out of articles

Finding articles that more closely match my research question.

Organization of sources

Information management

Being able to be organized and efficient when managing a bunch of sources

Assessing the quality of information, citation of online resources, understanding and using GIS, managing audio, video, and graphic content

LEARNING SKILLS

Skimming, speed reading

Usage of scanning and online ILL systems

I need to be able to type better and be able to use excel and other programs that would be helpful in my classes.

None (I'm a data science major)

Finding things

I think I need to strengthen my ability to narrow down my research topic

Adapting and incorporating productivity and collaboration software

Digital photography/storytelling and VR

Narrowing skills as well as tools that give more general information. I get a lot of specific studies that have very little to do with my topic.

Ability to sift through unimportant information

Training on macs and citations.

CODING

coding

Coding

Coding, GIS, the fancy way to refine google searches

GIS

I know that the CGA is a resource for GIS at W&M, but as a PhD student needing training in both the fieldwork side of surveying (including with digital tech.) and also in ArcGIS and other applications specific to archaeology, I have not been under the impression that there are many relevant resources, trainings, etc. available. Perhaps this is incorrect.

coding, data analysis

ANALYSIS

More accessible quantitative practice (for me, for SPSS and other statistical platforms)

NONE

None that come to mind

N/A

N/A

n/a

none

none

None extra

Not too much more, I just need sophistication.

na

Technology Comfort Zone

Lastly, to elicit opinions about how less experienced technology users can feel welcomed in high tech environments and perspectives on how barriers to individual enhancement of technology proficiency might be removed, this question was posed:

"Given that many students will not be experts in the use of the resources anticipated for the renovated space, what do you feel will make them feel welcomed, comfortable and productive in it?"

The word cloud that was generated emphasized words as follows:



The 111 technical skills comments in their entirety are below. They have been arranged in clusters of similar thought:

GENERAL

Tours in the beginning, then clear written instructions + labels always. The library shouldn't make someone feel like they're walking into a gym for the first time, they should be comfortable using the equipment without fear of looking like a fool.

I personally haven't used a bunch of the spaces already available because they feel like they're exclusive to certain groups - ex: makerspace seems fun to use, but it's really intimidating and I don't feel welcome there.

send out a newsletter, offer food, bring therapy dogs

Help or tutorials available through multiple formats to suit each person's comfort levels (ie, digital - videos and lists, in person - a help desk or Zoom channel)

Readily available walkthroughs and tutorials, both in person and in a virtual/video format, as well as extensive examples of what sort of work the space is tailored to support.

Classes/mentors/staff people to help them learn the new resources. Maybe offering a quick "crash course" on the resources in the renovated space.

SELF-HELP RESOURCES

Welcome videos to help understand it!

pamphlets

send out videos that will help students learn how to use such spaces via email.

Signs with tutorials

readily available instructions provided (whether that be a manual or a short infosheet), and clearly labelled buttons (power buttons, zoom, volume, how to project)

How-to signs

Signs that explain how to use the resources, since students often don't want to bother anyone to ask and are frequently too busy to attend an orientation session.

FAQs on how to access and utilize the resource available in the space.

Maybe a welcome video online explaining the layout as well as a diagram

Instruction videos for certain equipment that can be found online

Honestly, I feel like a lot of the technology itself can be overly confusing, and it would almost be better if you focused as much on

APPENDIX 4

comfort and where people would study as much as adding all this technology. However, with the technology you do end up adding, definitely include signage and basic how tos next to the technology and maybe list a few examples of how it could be used.

Videos on the library's website, explaining how to use them

Digital tour

Lots of signs explaining certain things and staff that know how to help

Youtube "how to" videos

A easily accessible posted guide to resources

easily accessible instructions, or optional downloadable walk-throughs

An online video presentation that introduces all of its features. It could be sent by email.

an easy guide book or poster explaining how it works

Make it more known that those resources are available and where specifically to go to get help/if appointments are needed/who to talk to, etc

Little guides on how to use the tech online guidance/tips maybe

Videos online detailing how to use and take advantage of resources

Laminated guides with instructions

Access to relevant training and tutorials in various forms; not just a general class that happens once or twice per year and doesn't apply to our needs. Perhaps work with specific departments (including the graduate students) to determine interest and needs. Also, access to

equipment and suitable spaces to work with particular applications independently. (That is, we need to be able to access the right equipment and apps outside of a class on our own time, too, once we've learned the basics.) There are other kinds of technology that are important to archaeologists (e.g., digital survey equipment, photogrammetry) that we currently don't have any real way to learn through coursework at the undergrad or grad level. I'm sure there are examples from other fields as well, and ways that departments and undergrad/grad programs could work together and work with the library to develop resources to fill this need.

SPACES

Welcoming atmosphere

These spaces should be adaptive, both literally and figuratively. Adapters should be available for students to plug screens into their laptops for quickly presenting/collaboration. Technology should be easy to dabble in, with both high-performance and basic programs available.

More spaces to do work in - not nearly enough seating for the number of students who want to study here. Making more individualized spaces would be more welcoming too.

lounge areas, whiteboards, empty spaces for collaboration

More large standing tables, more group and personal study spaces, outlets EVERYWHERE! Fun chairs

Warm lighting, comfy seats, more wood along the walls/floor... maybe even a fireplace! Make it romantic!

Spaces allow for drinking coffee and have methods to enhance studying (like a white board). Privacy is also a bonus.

The already warm and friendly space of the library! A quick/easy-to-follow tutorial/poster on the side of the new tech would be great!

plenty of soft chairs

I think the ability to reserve collaborative space for designated times and the ability to have a designated independent workspace is most important to graduate students. A casual coffee bar with free black coffee and/or a way for students to store and make their own coffee brought from home would improve use as well. The campus prohibition on alcohol also prevents many grad students from working on campus; the ability to write with a glass of wine or a beer would also increase grad student use.

snacks and water bottle filling stations. Also, all-gender bathrooms.

comfy seating, free snacks, clean, quiet music, WHITEBOARDS

soothing colors with rad decor to make for a fun but soothing space

A colorful space (Not too colorful because ADHD), comfortable modern chairs, and more cleaning supplies

a place that has different types of moods and wide

A free, open to all space that is easy to use

A first floor quiet space

warm lighting, youtube videos explaining things with qr coded linked to them

"Some privacy- not directly seated next to others, some space between students to collaborate with others but also remain semi-private

Comfortable furniture, informational posters about the area and new technologies/resources in multiple places, space for private conversation and studying

Open use, first come first serve. Nice calm colors and lighting

Bright colors and furniture like the ones in the Media Center. Also, quiet independent study spaces that r nice, spacious, and fresh looking

Lots of natural light and spaces to sit by the windows

PEOPLE

People available to assist them

a welcoming staff person to direct to info on resources and give basic guidance

A help desk that's always staffed, and plenty of signs.

A help desk with an IT professional (or student employee) available

A help desk with some one who can assist with more complex resources.

Perhaps a help desk or several signs with clear instructions for various resources.

Help desk and brochures

A person at a clear location who can help them find what they need/ suggest resources based on their specific inquiry.

Additional help from more experience members

Student staff to help troubleshoot in real time

Having other students employed in the area who are there to help in a non-threatening way would be nice. While having adults can be helpful, just making student employees knowledgable would then allow for them to encourage their friends to come and visit and let the space be engaged with organically.

Employ other students because it makes asking for help easier/less intimidating

Having people on hand to solve problems and suggest techniques

People who are present who can help them with tutorials

Hiring knowledgeable student workers who are trained in the area to be present (almost like an information desk) to help navigate the space.

Having more staff to help them guide.

One or two people who are trained in said tech resources. Somebody who can teach me about tech resources as a tutor/guide would help make it feel more accessible

Clear lists of instructions, someone on staff designated for assistance

Dedicated persons to welcome and give a brief tour to those who might be unsure of how to use the space. Someone just sitting behind a desk that you can go to in order to ask for help can be very intimidating. Perhaps even a video screen with a tour of the facility and it's capabilities. A touch screen tour would be even better... start with what the student/group/visitor is looking to do and being able to interact with the "tour" in order to discover the resources available to them in the space.

Engaging people to teach it who make the people feel comfortable.

Maybe some guides too so you don't have to ask someone for every small question

Maybe a staff member on call to help. Or, sessions that you can attend. Also, maybe videos like FAQs.

laminated step-by-step pages outlining how to use particular tech, a librarian-type guide for us to ask questions, or a chat line we can ask. Lots of signage!

I think it would be helpful to offer courses or to have people who are experts around that area to assist as needed.

people to help guide students using new equipment

maybe a poster at each new place explaining how to use it and having staff available to answer questions

Student assistants, clear signage, and useful online manuals on the swem website

Tours, maybe videos, staff willing to help (honestly, I think a lot of students would just wander in and figure stuff out by trial and error)

someone available to patiently walk them thorough it and/or visual information with step-by-step instructions or FAQs

People who are trained and able to answer questions and give tutorials if needed. Also having pre-recorded tutorials so people aren't too embarrassed to come ask questions.

Provide free workshops or have an attendant there to help any students that many need it.

Have people that have time to help them be available.

APPENDIX 4

INSTRUCTION

Crash courses mandatory

Free classes to demonstrate how to use the resources. Coll 100 class sessions using the resources to ensure all freshmen are taught how to use them.

Training sessions offered weekly/biweekly

Workshops.

Providing free training sessions for those resources

Offering tours and workshops going over the new resources.

Maybe have little instruction guides or monthly workshops

Instructional sheets on the tables/frequently asked questions

Both in person and virtual tours

resources that would allow students to develop technical skills, probably accommodating for different styles for learning, such as workshops or text-based tutorials for coding

Giving introduction classes/tours would be helpful

I'm taking a data science workshop with Professor Rob Hicks, and I think little crash course series like that are exactly what people need to dip their toes into technical skills that can be very intimidating. Having a regular meeting space for it and getting to know those people in person would help people feel more like that is their space too and they're welcome there. After this workshop I think I'm way more comfortable/likely to take an actual programming class. Also snacks if that's allowed.

Detailed introductions on how to use devices

An opportunity to take a tour that will not only show you the new equipment, but also show how to utilize it well through demonstrations and allowing the student to try.

Integrating opportunities to become familiar with new tech in other spaces (i.e., kiosk in dining hall to show how tech works)

having swem events on weekends such as trivia and other more engaging events that can show swem is more than just a place to be quiet, it promotes creative thought

A week prior to fully opening where it could just be a welcoming event and have small sessions on how to make best use of the spaces

workshops about the new tools happening regularly

Training seminars

A tour of the space during orientation, and tours offered throughout the school year. I found this helpful when I was introduced to the law library, and felt comfortable approaching the librarians for assistance.

workshops or training sessions that people can sign up for?

Learning sessions offered in a class. The personal time of W&M students is valuable and expecting students to find time to familiarize themselves with available technology outside of class would be a challenge. Perhaps one day in one class could be devoted to meeting at Swem and reviewing these resources. Perhaps

this time could be coordinated amongst the faculty.

Having presentations, within classes where the resources will be useful, on exactly how to use the specific resources available.

Prerequisite guided orientation session before utilizing the renovated space, chatbots

Open houses / info sessions / attempts to make the space inviting and not intimidating

TECHNOLOGY

If there will be more TV's or monitors, explaining the different chords (ie hdmi etc) would be useful. Likewise, any sort of login or bluetooth access instructions like used for the printers should be more widely available in these cases

more whiteboards, because it helps if we are able to draw our diagrams and notes if we are working with other people

Have good user interfaces!

MISCELLANEOUS

maybe a lot of marketing for its resources?

Provide plenty of resources that educate them on how to use the new additions

outreach to various degree programs; invite graduate students for tours- they are students as well as educators that can bridge the divide between faculty and undergrads