



Facilitating Creativity for Student Success by Library Space Design

Presented by

Adrian Del Monte, PhD., Valrie Minson, Margaret Portillo, PhD. & Laura I. Spears, PhD.

Today's Agenda

- Introductions
- Study Background
- Supporting Creativity
- Methodology
 - Spatial Analysis
 - Survey
 - Focus Groups
 - Interactive
- Overall Findings
- Continuing the Conversation

ARL Research Library Framework Initiative



2019 ARL call for research proposals



UF awarded *"How do library spaces facilitate innovative research, creative thinking, and problem-solving?"*



Space awardees also included UC-Davis, Iowa State, Syracuse, Johns Hopkins, Temple University



Marston Science Library Research Project Team

Valrie Minson, Chair & Assistant Dean of Assessment

Laura Spears, PhD., Assessment & User Experience

Sara Gonzalez, PhD., Assoc. Chair & Physical Science

Jean Bossart, Engineering & 3D Services

College of Design, Construction & Planning

Margaret Portillo, PhD., Professor & Assoc. Dean of Research

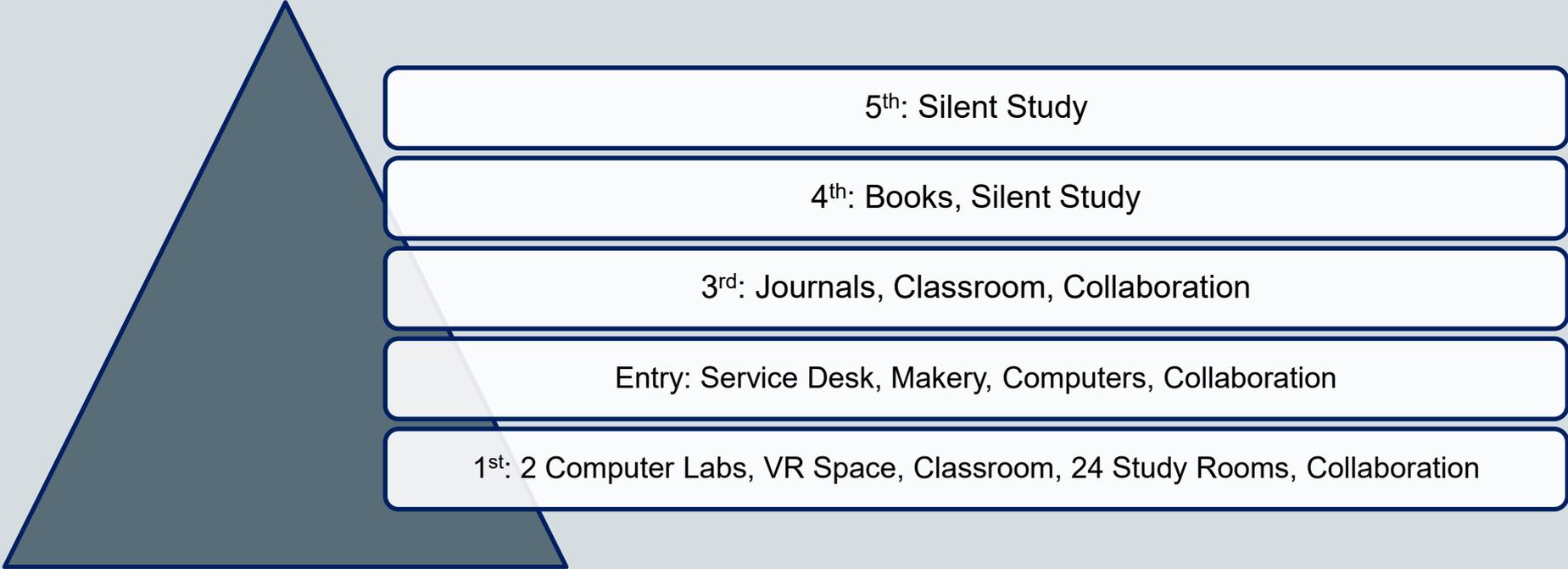
Jason Meneely, Associate Professor, Dept. of Interior Design

Sheila Bosch, PhD., Asst. Professor, Dept. of Interior Design

Adrian Del Monte, PhD. – Faculty, University of San Carlos

About Marston Science Library

- The 100k sq foot building has 5 floors, ~2 mil patrons/year
- Opened in 1987, 1st floor renovated in 2014 and 3rd floor in 2018.



5th: Silent Study

4th: Books, Silent Study

3rd: Journals, Classroom, Collaboration

Entry: Service Desk, Makery, Computers, Collaboration

1st: 2 Computer Labs, VR Space, Classroom, 24 Study Rooms, Collaboration





Our research question...

How do library spaces facilitate creative thinking, innovative research, and problem-solving?

From research into action



Spatial Analysis

Identify space uses
Develop profile of user types



Online Survey

Collect impressions of current/desired space
Articulate impressions



Focus Groups

Understand perceptions of survey responses
Confirm tangible results



Design

Synthesize results
Develop new innovative evidence-based designs

Limitations & changes

Please confirm [Location Hours](#) before visiting

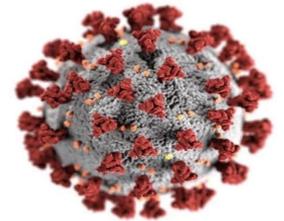
Marston Science Library

Occupancy: 231 of 2105



Updated: Mon Apr 11 2022, 9:24

- Library space reduced to just 34% capacity
- Installation of barriers at the Service Desk
- Mask and social distancing requirements
- Data gathering for the student survey moved from Spring 2020 to Fall 2020
- Survey mode changed from “Intercept” style to online
- Focus group format shifted from in-person to virtual



Alachua County ranks 5th in state for new COVID cases per capita

Data released by the Florida Department of Health shows Alachua County had the fifth most infections per capita across the Sunshine State.

Creative Ecology: Shaping Human Experience

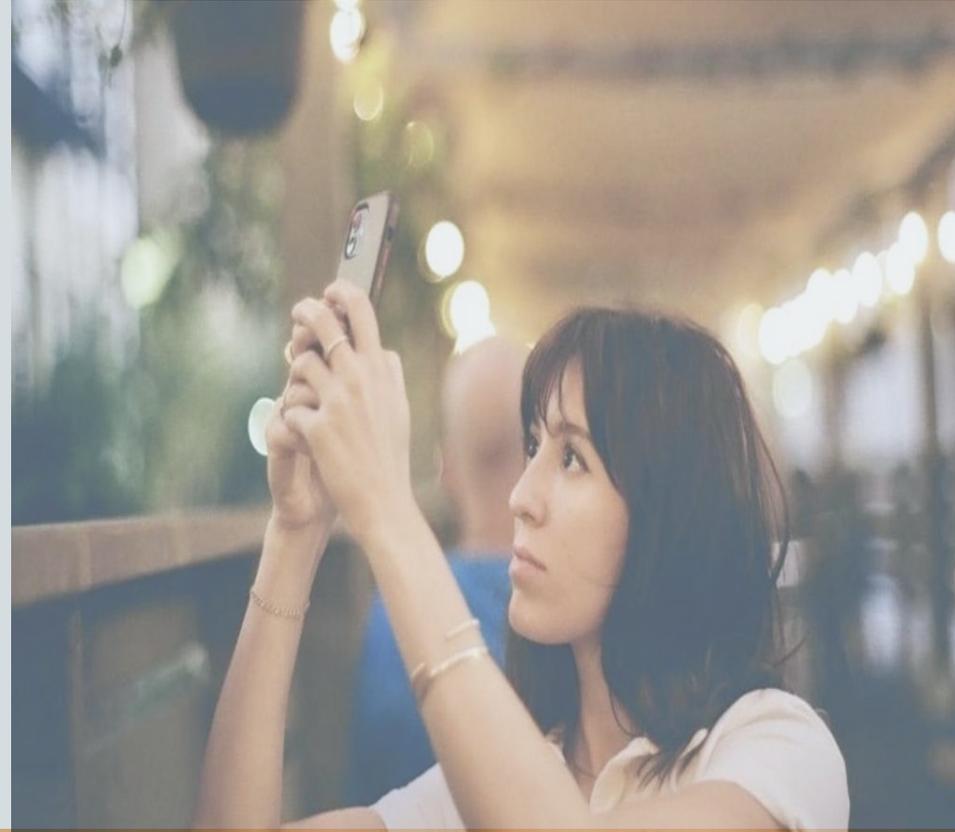
*“In a creative ecology, **tension** – a healthy antagonism – creates a culture in which to innovate. The creative ecology thrives on diversity across individuals, teams, and physical spaces within an organization.”*

-Margaret Portillo & Jason Meneely

The Handbook of Interior Design - Wiley Blackwell

Creative Ecology: Placemaking

- Why study creativity in the re-envisioned library?
- How should we consider creativity when imagining new campus spaces?
- And what does choice and control have to do with creativity and the future-poised library?





Spatial Analysis

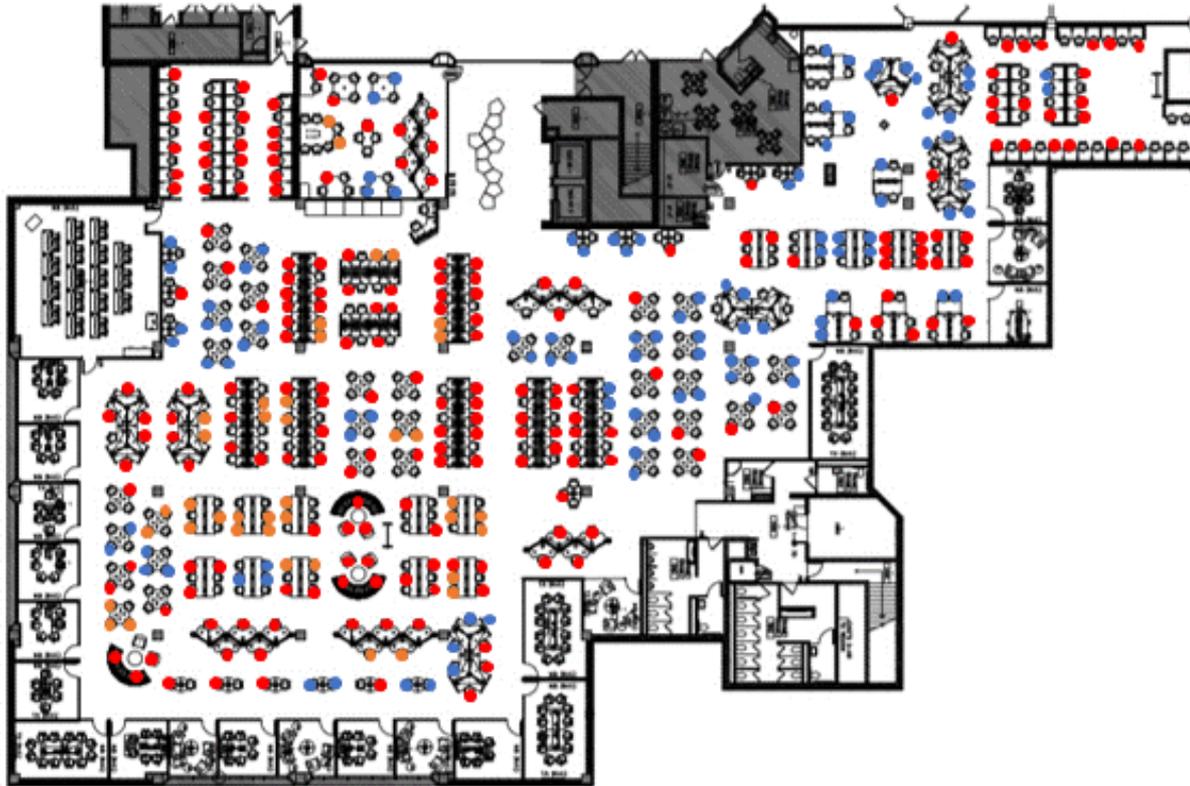
Method

- 16 observations per floor (20 min approx.), Jan - Feb 2020
- Public/communal spaces
- Private/enclosed spaces
- Individual, group, in a group but working individually
- Examine patterns in library resources/ service use
- Identify occupancy/capacity utilization
- Note spaces being used



WEDNESDAY, JANUARY 29, 2020
1:00 – 1:15 PM

FIRST FLOOR



The spatial analysis revealed patterns in how Marston Library is designed, including but not limited to its occupancy counts, number of students studying, and what spaces they are using.

- Individual
- Group
- In a group but working individually

~~Intercept~~ Survey

Preparation

Private, Individual,
Individual/Public

Access to resources,
authoritative sources, I/P
space & facilitated group
input

Incubation

Private/Individual, Public/Group,
Private/Group, Public/Individual

Access to dedicated and
in-between spaces,
biofilia, motivation,
playful, social areas

Intimation

Private/Individual
Private/Group

Access to group study,
private study, quiet areas
with comfort features,
creative technologies

Illumination

Individual/Private,
Group/Private

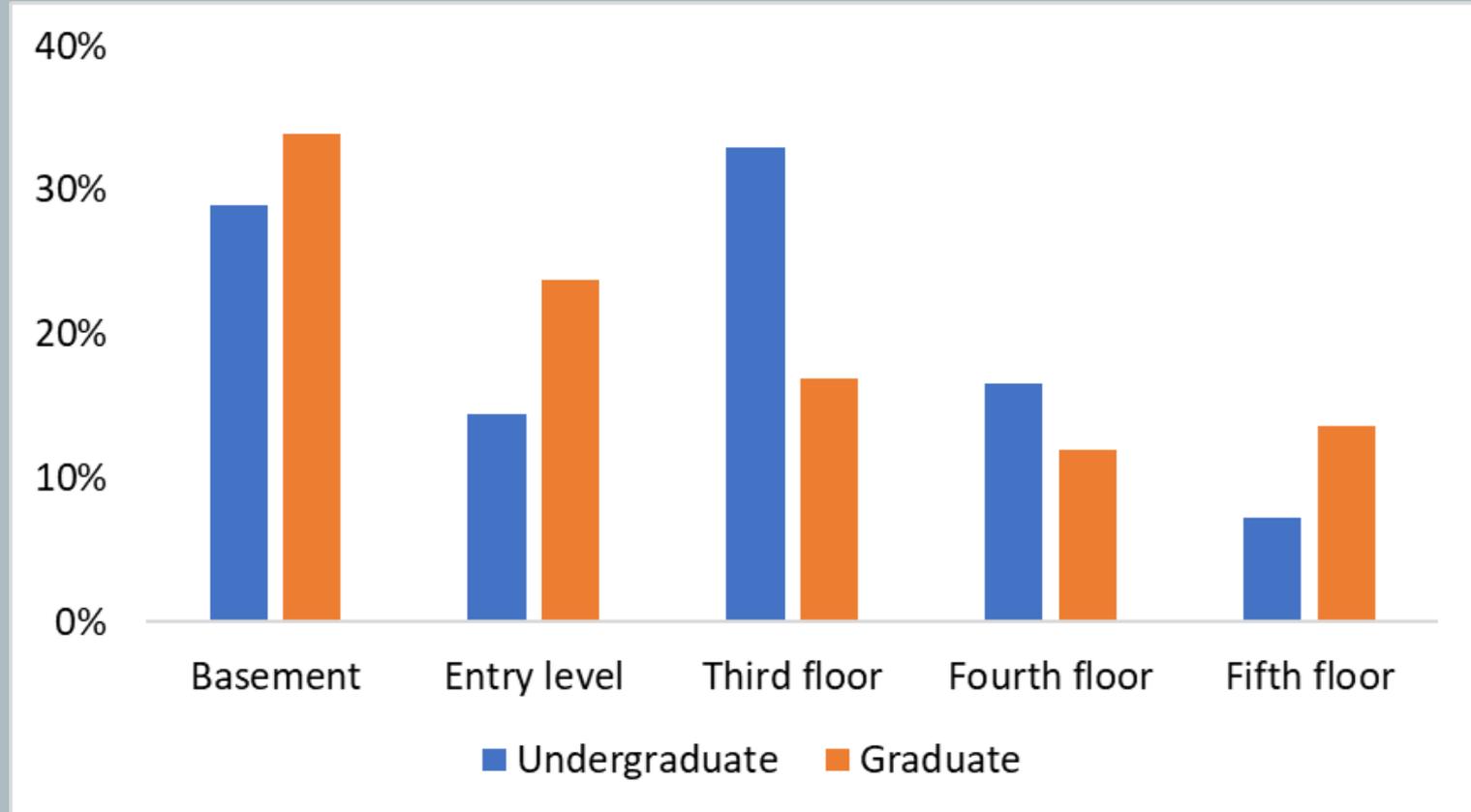
Access to creative
technologies, private,
quiet areas, group and
individual study, private
study areas

Verification

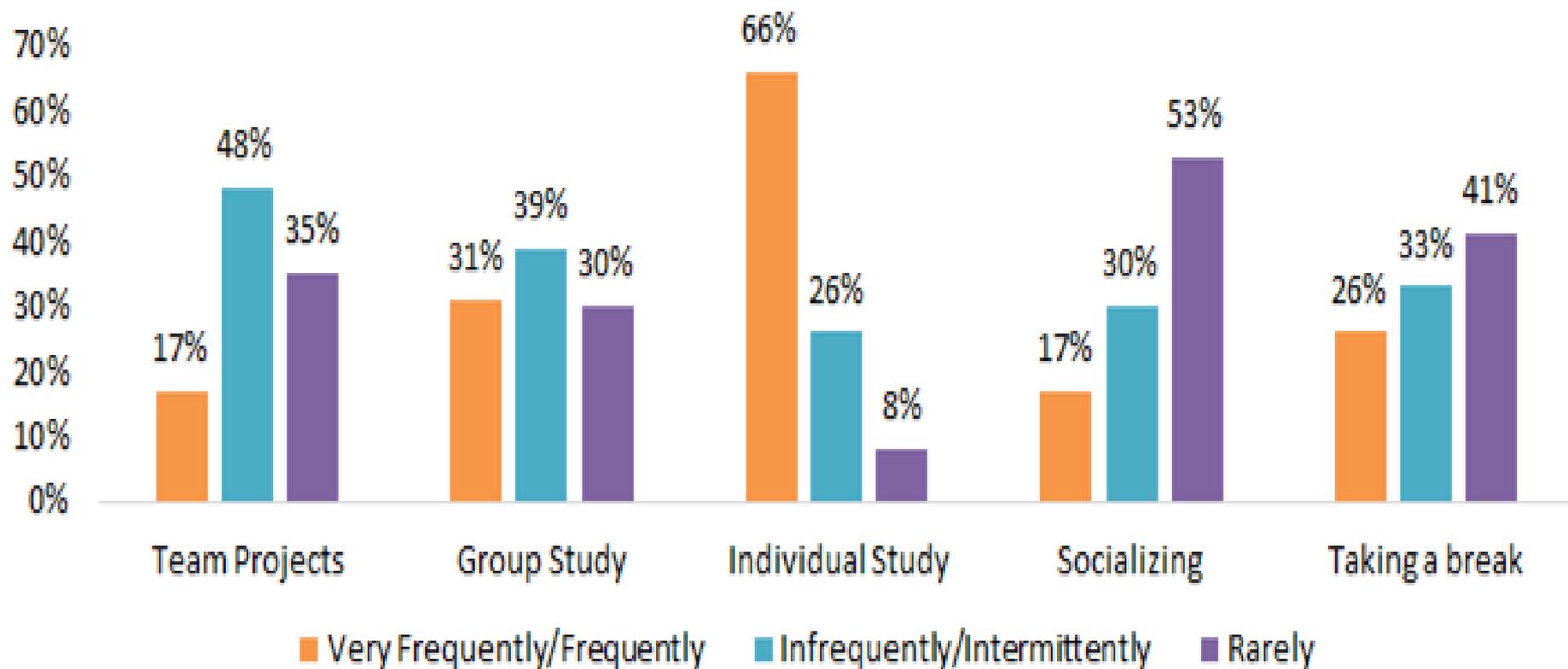
Group/Public

Access to creative
technologies, group
spaces, scholarship
resources, feedback

Survey Results (608 total responses; 337 sampled)



Frequency of Library Use by Task: All Students





Statistical Analysis

Descriptive Statistics

Means Comparisons

Related Samples Sign Test



Qualitative Coding

Space Typology,

Space Use Concepts, &

System Wide Diversity
(Traditional/Modern)



Focus Groups

Current/Ideal ACL Results

FINDINGS BY FLOOR

Basement:

An Ideal space is more relaxing, arousing, and exciting but less noisy and crowded.

Entry Floor:

This space had fewer deviations than any other between current and ideal perceptions. An Ideal space, however, would again be more arousing, relaxing, quiet and uncrowded.

Third Floor:

This space had the largest difference between Current and Ideal on the crowded/uncrowded dimension; it also reflected a stronger difference on the friendly/unfriendly dimension and also showed a need for more arousing and exciting features.



FINDINGS BY FLOOR

Fourth Floor:

This floor has the strongest difference values of any on this index. The responses indicate that this floor is desired to be more arousing, exciting, social, collaborative, friendly and uncrowded. As a note, the adjective dimensions social/unsocial and collaborative/self-reliant were statistically correlated, meaning that as the score for Collaborative increased, so did the score for Social.

Fifth Floor:

This floor was desired to be more arousing and exciting and uncrowded as the others; also responses indicate an Ideal space would have more playful and collaborative features.



Focus Groups

Focus Groups



- 45 minutes, online
- 5 Total Focus Groups
 - 4 student focus groups: 2 graduate & 2 undergraduate
 - 1 library employee group
- 2 moderators + 1 assistant from Libraries & Interior Design dept.
- Used **Zoom** and **Poll Everywhere**
- Transcripts coded using **NVIVO**
- Discussion centered on:
 - current space
 - ideal space

Prompts:

1. When you're working independently, what should the space look like?
2. When you're working in groups, what should the space look like?
3. When would you want a playful space versus a serious space and what would it look like in terms of furniture, lighting, and privacy?
4. How would you define social space and unsocial space and when do you want to use these kind of spaces? What does it look like (i.e., furnishings)?
5. What can we do with the physical space of our building to better support your success, creativity, innovation, and problem solving?
6. What small changes could we make to the library?
7. What big changes could we make to the library?

Focus Group Results

What was important to each focus group?

- Undergraduates focused predominantly on the importance of group study and furnishings.
- Graduates discussed the importance of group and individual study.

“I want ergonomic chairs, maybe an adjustable desks. I'm encouraged to not just sit down but to set up, open space, nothing too clustered or clumped or busy looking...”

	Undergrad	Grad
Group	50%	42%
Individual	32%	33%
Private	22%	15%
Public	4%	10%
Aesthetics	4%	4%
Ambiance	9%	5%
Amenities	17%	15%
Architectural	3%	1%
Building features	3%	3%
Color	1%	3%
Comfort	11%	14%
Noise, ambient noise	10%	7%
Component	0%	1%
Fenestration	4%	5%
Functionality	7%	16%
Furnishings	41%	13%
In-between spaces	0%	2%
Lighting	8%	6%
Materials	2%	2%
Wayfinding	2%	3%

4th Floor



5th Floor



RE-ENVISIONING MARSTON SCIENCE LIBRARY



“Add **another room with a big table** that would be to suit large groups. There aren't too many big study rooms around campus, so one more would definitely be an improvement.”

UNDERGRADUATES

“A bit of a **background noise** and **natural lights**. Some couches or **alternative chairs** like bungee chairs. We just sink into them, and those are **fun** if you're doing some light work or brainstorming with a group”.

“More efficient use of space and more **moveable seats** (like chairs). More **modern furniture** and **more noise-absorbing materials** (sound dividers) would be great at making the space a bit more bearable to concentrate in.”



GRADUATES

“I like going idea of having **few distractions**, something that's **clean and clear**. I like to sit on little lounging chairs and think. So, one main reasons I go to Marston is to kind of **get away** from my lab space which is kind of busy.”



MSL EMPLOYEES

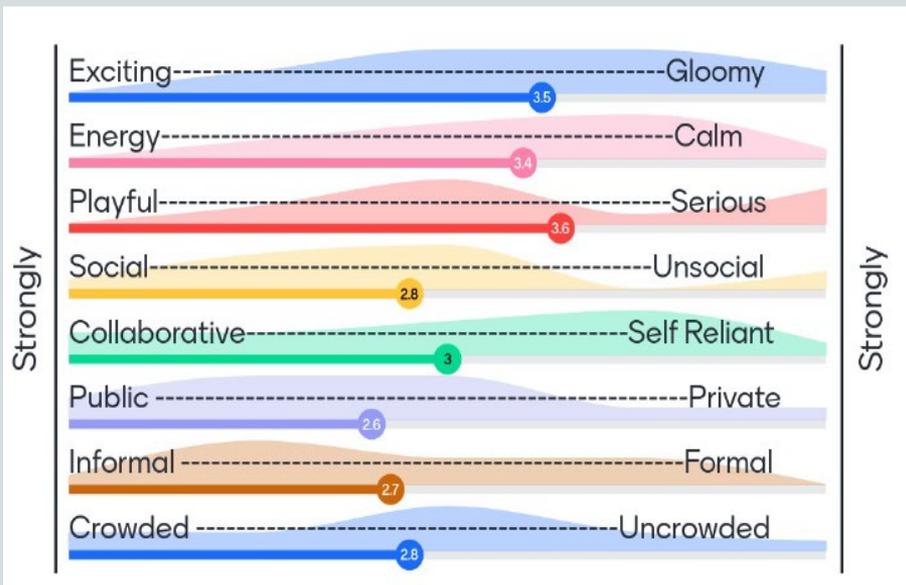
“I feel like Marston at this point **plants** are kind of one of our **signatures** and that we should continue with that. Plants grow really well in our building, with the lighting.”

“I think Marston has a **unique charm** compared to other buildings on campus. We could totally renovate it based on how our current users want to interact with the building. Make it more of what a **21st century UF** student would want to **experience**.”

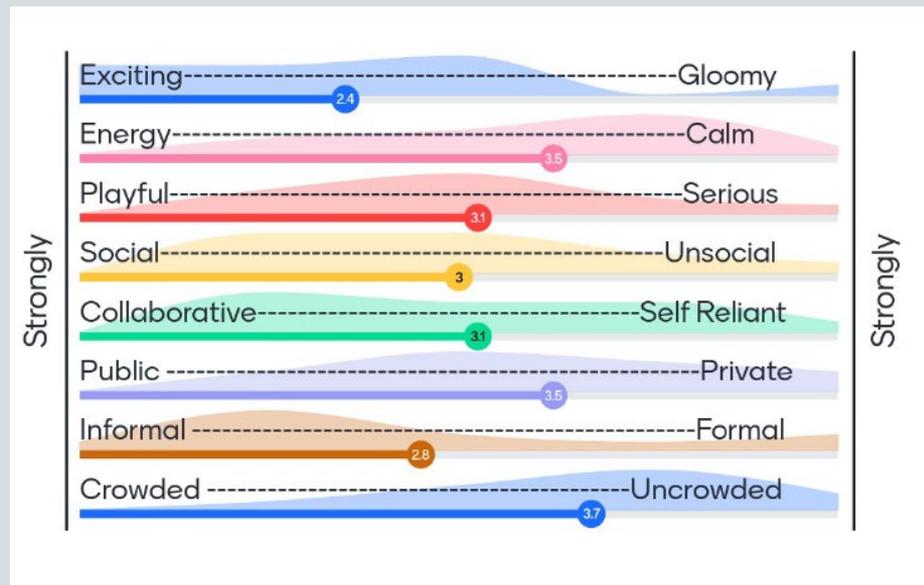
Interactive Activity

For each of the adjective pairs, please move the slider to the side that represents how the CURRENT/IDEAL library space feels/would feel.

Current



Ideal



CURRENT SPACE

81%
Undergrad

84%
In-person
Users

55%
2-5 hrs/week
frequency of use

337
respondents

Collection Period:
November 9 – 21, 2020

	strongly	slight	neutral	slight	strongly	
Pleasant	45.70%	37.39%	10.98%	4.75%	1.19%	Unpleasant
Relaxing	26.71%	36.80%	24.93%	10.68%	0.89%	Distressing
Sleepy	3.86%	30.27%	39.17%	21.96%	4.75%	Arousing
Exciting	8.90%	25.82%	37.98%	22.85%	4.45%	Gloomy
Energetic	12.17%	24.04%	24.33%	21.36%	18.10%	Calm
Quiet	35.31%	19.58%	16.02%	20.18%	8.90%	Noisy
Playful	5.04%	20.40%	25.82%	27.89%	20.77%	Serious
Social	18.69%	28.19%	14.84%	18.10%	20.18%	Unsocial
Collaborative	24.93%	22.55%	13.65%	15.43%	23.44%	Self-reliant
Public	35.61%	28.78%	14.54%	10.39%	10.68%	Private
Informal	22.55%	30.86%	29.67%	11.28%	5.64%	Formal
Authentic	22.85%	32.34%	37.98%	5.93%	0.89%	Superficial
Friendly	21.07%	39.17%	27.00%	10.39%	2.37%	Unfriendly
Crowded	17.80%	28.49%	25.82%	17.21%	10.68%	Uncrowded

IDEAL SPACE

“High and low tables with many outlets, comfortable chairs, booths with the same features typically seem to make the students very happy. Different lighting features might be nice for a more comfortable and less clinical feeling.”

“More efficient and aesthetically pleasing study spaces. There are a lot of tables for groups of 4, but not a lot for smaller or bigger groups.”

	strongly	slight	neutral	slight	strongly	
Pleasant	78.64%	15.13%	5.64%	0.59%	0.00%	Unpleasant
Relaxing	51.93%	29.38%	16.91%	1.19%	0.59%	Distressing
Sleepy	2.37%	2.97%	31.45%	40.95%	22.26%	Arousing
Exciting	22.85%	43.92%	27.00%	5.34%	0.89%	Gloomy
Energetic	17.51%	26.71%	21.96%	15.13%	18.69%	Calm
Quiet	38.28%	30.56%	18.10%	12.46%	0.59%	Noisy
Playful	8.90%	20.18%	32.64%	25.82%	12.46%	Serious
Social	14.54%	40.06%	27.60%	11.57%	6.23%	Unsocial
Collaborative	29.67%	29.08%	23.44%	9.20%	8.61%	Self-reliant
Public	25.82%	24.33%	23.44%	16.91%	9.50%	Private
Informal	20.47%	30.27%	31.45%	12.76%	5.04%	Formal
Authentic	45.40%	31.16%	21.96%	0.89%	0.59%	Superficial
Friendly	48.66%	35.61%	14.84%	0.59%	0.30%	Unfriendly
Crowded	2.37%	6.53%	25.82%	39.17%	26.11%	Uncrowded

Overall Findings

GENERAL RECOMMENDATIONS



Create a Sense of Place



Solve for the Group, by addressing the Individual



Palette of Posture



Biophilia for PUBLIC and PRIVATE space



Choice and Control for I and WE spaces

SPECIFIC SUGGESTIONS



Tables that allow spreading out study materials

Replace damaged furniture

Offer a variety of seating; standing desks, exercise seats, sleep pods

Increase white boards and offer erasers/ markers on each floor

Increase dinner table/banquet seating



Allow for individual choice and control with seating, lighting, privacy, etc.,

Provide stimulating, but not overly arousing space

Offer a central/easily accessible social space

Increase sight lines to restrooms on each floor



Increase connection with nature including plants and natural lighting



Instructional Experience
Feature **MADE@UF**
Instructional furnishings and screens



Meeting Spaces
Increase evening meeting spaces for student clubs/groups

Open up instructional space in the evening



Study Rooms
Increase study room offerings for groups and individuals

Improve the branding and visibility of the makery

Locate underutilized space for increased individual study rooms

Let's keep the conversation going...

ARL Workshop 2

Tuesday, April 19, 10:30-12

Inside the Design Studio: Reimagining Library Spaces in Partnership with Interior Design & Engage Design Lab

ARL Workshop 3

Wednesday, May 4, 10:30-12

Inside the Research Process: Survey Analysis, Creativity Index, & Overall Findings



Thank you!

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