



California State Polytechnic University, Pomona

Space Analytics Update

Preliminary Utilization Review – President Session



25 June 2018

AGENDA

- **Space Assessment Process**
- **Existing Space Distribution**
- **Instructional Spaces**
 - Scheduled Use*
 - Preliminary Utilization*
 - Utilization + Capacity Summary*
 - Capacity Outcomes*
 - Pedagogy + Planning*
- **Next Steps**

Space Assessment Process

- **Data collection + field verification**
Facilities, enrollment, course schedule
- **Existing space distribution**
By space use type
- **Classroom + class laboratory utilization**
Space use, stations, scheduling
- **Summary of Space Distribution and Utilization Assessment**

Next:

- **Stakeholder sessions**
President, VPs, Deans, Directors
- **Classroom demand**
Translate contact hours to model room count
- **Space assessment + needs prioritization**
Baseline year + future scenarios
- **Findings + outcomes**
Presentation of prioritization and critical needs



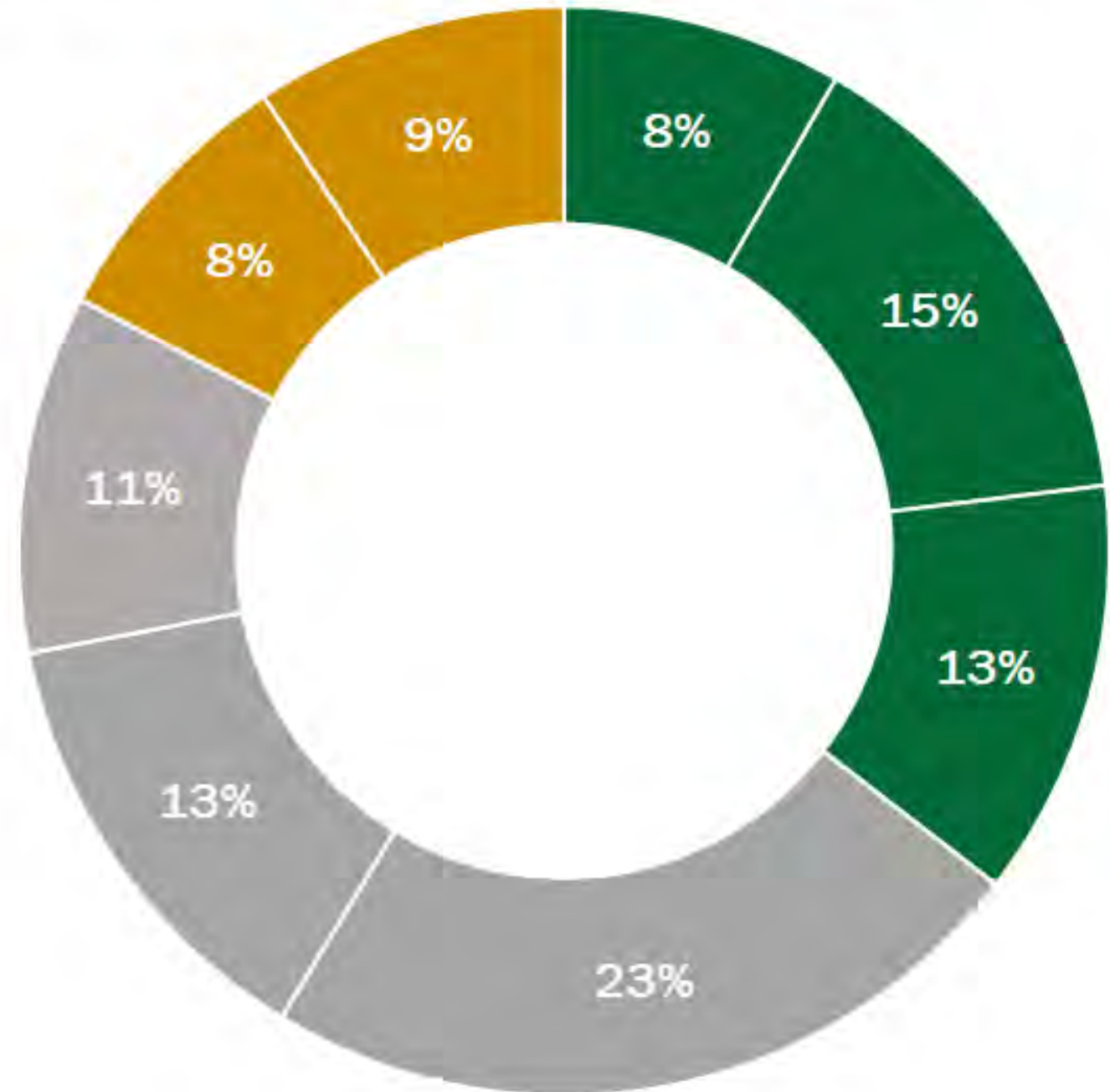
Existing Space Distribution

Lecture	134,599
Laboratory	239,257
Other Instructional Space	200,886
Offices	375,582
Library	215,984
Other Non-Office	172,537
Special Instruct Support Space	130,723
Miscellaneous Space	150,466

TOTAL NASF **1,620,034**
21,872 Student FTE

Space per Student FTE = 74 NASF

Non-Residential Net Assignable Square Feet



INSTRUCTIONAL SPACES

Lecture Rooms

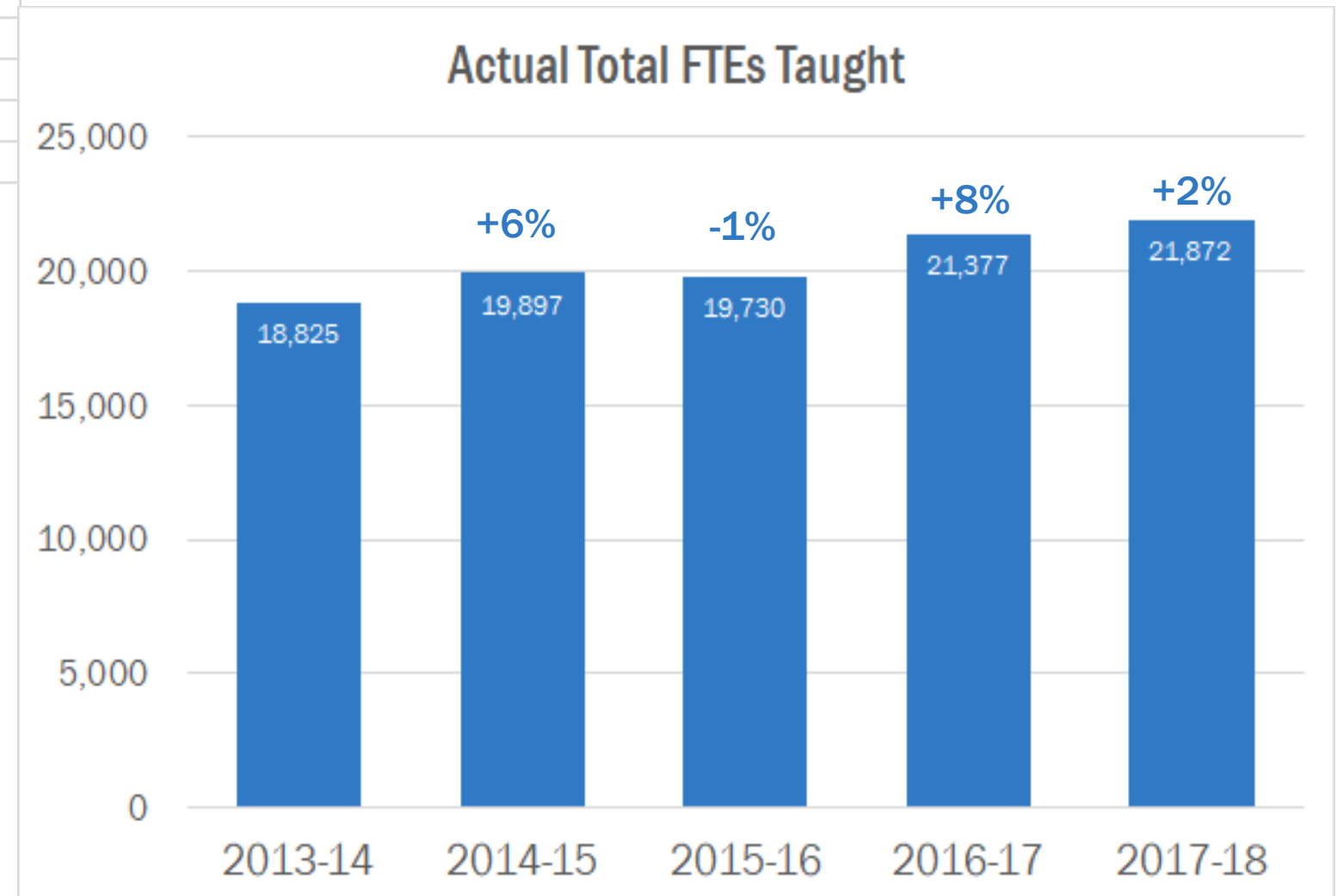
Teaching Laboratories

FTE Capacity v. Actual Total FTEs Taught

College Year Annualized Full-Time Equivalent Students (FTES)				6/20/2018	
California State Polytechnic University, Pomona					
	2013-14	2014-15	2015-16	2016-17	2017-18
1) CSU FTES Capacity for Campus	*	*	17,993.00	18,292.00	18,292.00
2) CSU Resident FTES Target	17,356.00	17,756.00	18,294.00	18,586.00	18,714.00
3) Campus total FTES Goal	18,244.00	18,769.00	19,794.00	20,870.00	21,443.30
4) Actual total FTES Taught	18,825.00	19,897.00	19,730.00	21,376.90	21,872.20
Percent of Capacity			110%	117%	120%

- 1) CSU FTES Capacity for Campus is a calculation used in the analysis of new space needs
- * If necessary, older figures could be researched.
- 2) CSU Resident FTES Target is budget teaching expectation for California resident students
- 3) Campus total FTES Goal is planned teaching expectation for all students, resident plus non-resident
- 4) Actual total FTES Taught is final college-year outcome

Prepared by Academic Research and Resources



Overall a 16% Increase over 5 years

Scheduled Use Lecture Rooms by Day + Time Fall 2017

SCHEDULED LECTURE ROOMS ONLY

(Darker colors indicate a large percentage of rooms are scheduled.)

DRAFT

8:00 AM	53% 83 Rooms	61% 96 Rooms	51% 81 Rooms	59% 94 Rooms	42% 67 Rooms	38% 60 Rooms
9:15 AM	73% 115 Rooms	66% 105 Rooms	72% 113 Rooms	66% 104 Rooms	59% 94 Rooms	48% 76 Rooms
10:00 AM	73% 115 Rooms	92% 145 Rooms	72% 113 Rooms	91% 144 Rooms	59% 93 Rooms	55% 87 Rooms
10:30 AM	79% 125 Rooms	92% 146 Rooms	77% 121 Rooms	92% 145 Rooms	63% 99 Rooms	58% 91 Rooms
11:45 AM	78% 124 Rooms	91% 143 Rooms	77% 122 Rooms	91% 143 Rooms	61% 96 Rooms	57% 90 Rooms
1:00 PM	48% 76 Rooms	98% 155 Rooms	53% 83 Rooms	96% 152 Rooms	28% 45 Rooms	46% 73 Rooms
2:00 PM	92% 146 Rooms	97% 154 Rooms	91% 143 Rooms	95% 150 Rooms	25% 40 Rooms	58% 91 Rooms
3:00 PM	85% 134 Rooms	84% 133 Rooms	82% 130 Rooms	84% 132 Rooms	23% 37 Rooms	51% 81 Rooms
4:00 PM	83% 131 Rooms	85% 134 Rooms	82% 130 Rooms	82% 130 Rooms	8% 12 Rooms	49% 77 Rooms
5:00 PM	78% 124 Rooms	57% 90 Rooms	79% 125 Rooms	55% 87 Rooms	4% 6 Rooms	39% 62 Rooms
6:00 PM	70% 110 Rooms	77% 121 Rooms	73% 115 Rooms	75% 119 Rooms	1% 2 Rooms	42% 67 Rooms
7:00 PM	69% 109 Rooms	56% 88 Rooms	73% 116 Rooms	56% 88 Rooms	1% 2 Rooms	37% 58 Rooms
8:00 PM	26% 41 Rooms	42% 66 Rooms	27% 42 Rooms	42% 67 Rooms	1% 2 Rooms	20% 31 Rooms

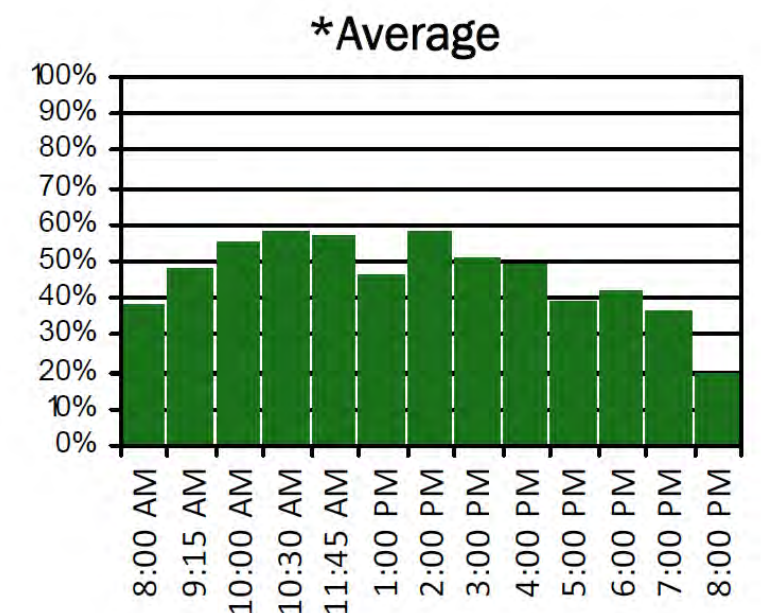
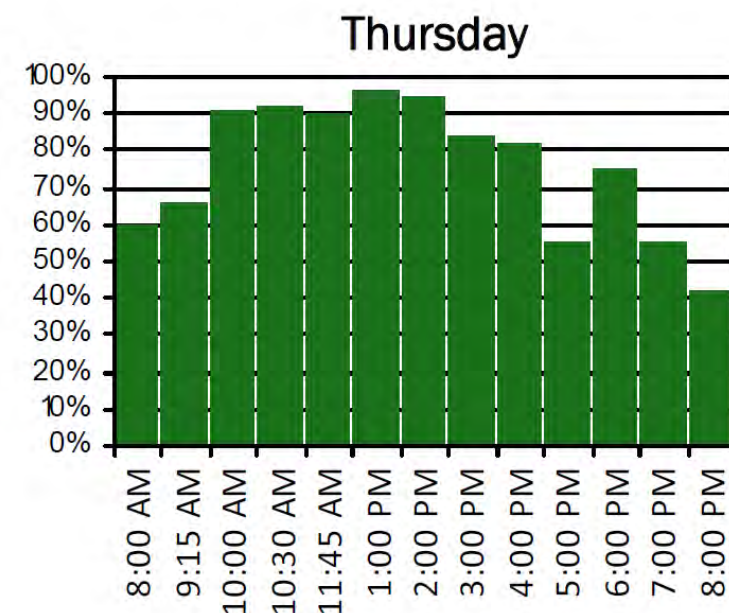
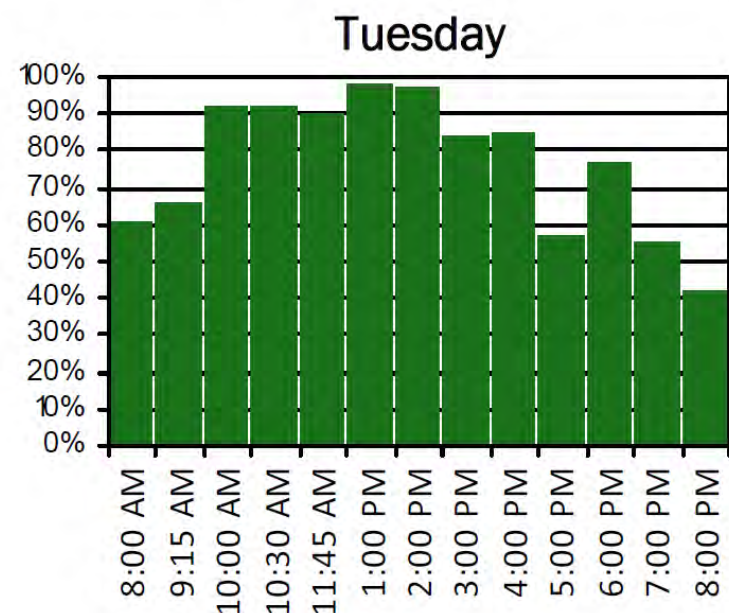
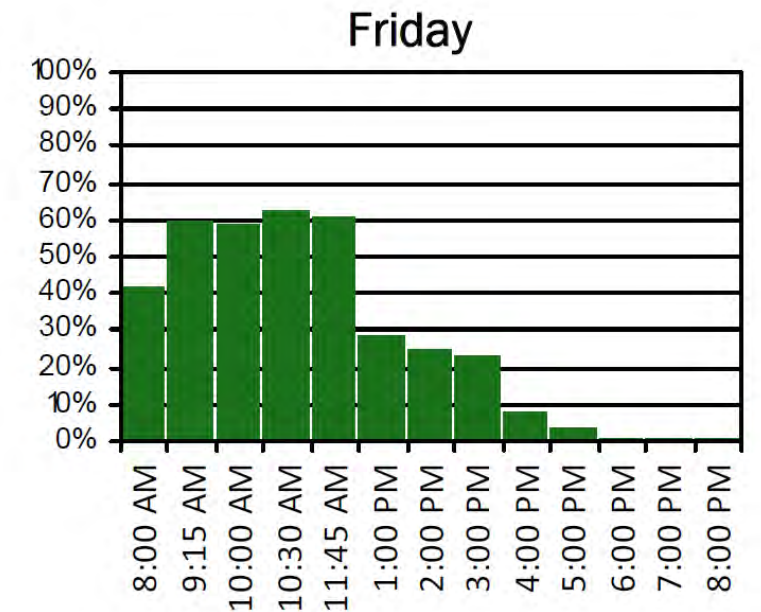
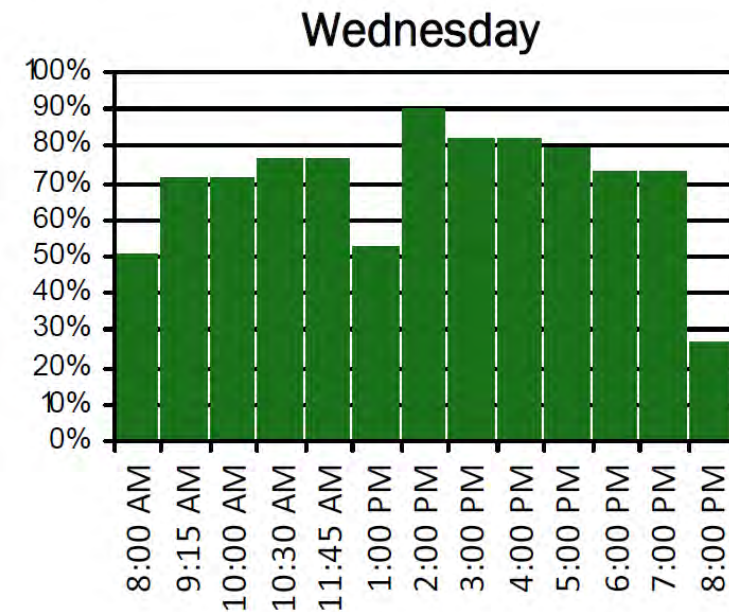
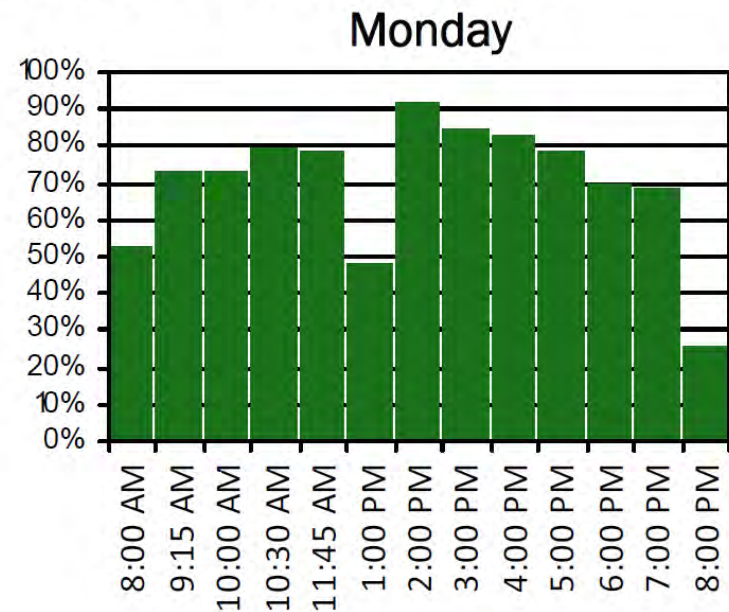
Total classrooms = 158

	Monday	Tuesday	Wednesday	Thursday	Friday	*Average
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Scheduled Use Lecture Rooms by Day + Time Fall 2017

SCHEDULED
LECTURE
ROOMS
ONLY

Percent of Classrooms In Use



Preliminary Utilization Lecture Rooms by Building Fall 2017

SCHEDULED ONLY

- CPP Fall 2017 data has no scheduled courses in 7 lecture rooms included in Facilities data
- We show 12 more rooms than APD791 PO-Utilization Report counts (800 seats)
- Utilization is close to internal APD791 PO-Utilization Report calculations
- 87% of Utilization Targets

Building Name and Id		Room Characteristics				Average Utilization			
		TOTAL		AVERAGE		Course Enrollment	Weekly Room Hours	Percent of Seats Filled	Weekly Seat Hours
		No. of Rooms	No. of Seats	NASF per Room	NASF per Seat				
Administration	001	7	316	791	19	36	47	82%	38.1
Agriculture Classrooms	002	5	249	760	15	35	31	71%	22.1
Art/Engineering Annex	013	1	65	1,639	25	51	28	78%	21.8
Bronco Bookstore	066	4	269	1,035	16	46	36	70%	27.5
Business Administration	006	9	428	778	17	35	46	73%	32.8
Class, Lab, Administration Building	098	7	327	761	16	37	34	79%	26.3
College of Business Administration B	162	2	320	2,763	17	110	43	73%	30.6
College of Business Administration C	163	12	733	1,177	20	38	40	64%	24.8
Collins College of Hospitality + Management	079	3	171	1,186	20	47	30	84%	27.1
Drama/Theater	025	1	30	425	14	28	25	93%	23.3
Engineering	009	39	1,627	651	16	32	40	79%	31.8
Engineering Labs	017	4	168	814	19	36	34	86%	30.5
Environmental Design	007	3	150	773	15	29	30	59%	18.0
Kellogg Gym	043	1	58	842	15	27	31	46%	14.4
Letters, Arts and Social Science	005	20	838	653	16	32	41	78%	32.6
Library	015	7	460	1,137	17	56	38	85%	34.6
Marriott Learning Center	080	2	96	1,235	26	34	24	68%	15.8
Music Department	024	11	600	880	17	36	38	69%	25.5
Science	008	13	494	573	15	32	46	85%	38.6
Science Laboratory	003	7	434	950	16	48	46	76%	38.8
Totals / Averages:		158	7,833	824	17	37	40	77%	30.5

CSU Utilization Targets: Lecture

53	66%	34.98
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Preliminary Utilization by Teaching Lab Type

Fall 2017

SCHEDULED TEACHING LABS ONLY

Space Type	Room Characteristics				Average Utilization			
	TOTAL		AVERAGE		Course Enrollment	Weekly Room Hours	Percent of Seats Filled	Weekly Seat Hours
	No. of Rooms	No. of Seats	NASF per Room	NASF per Seat				
Teaching Laboratory	1	18	995	55	8	12	44%	5.3
Teaching Lab-Lower Div	50	1,059	1,092	56	22	26	113%	28.6
Teaching Lab-Upper Div	97	1,928	1,137	64	21	21	122%	24.4
Teaching Lab-Grad	5	104	845	39	15	18	75%	15.2
Totals / Averages:	153	3,109	1,112	61	21	23	117%	25.4

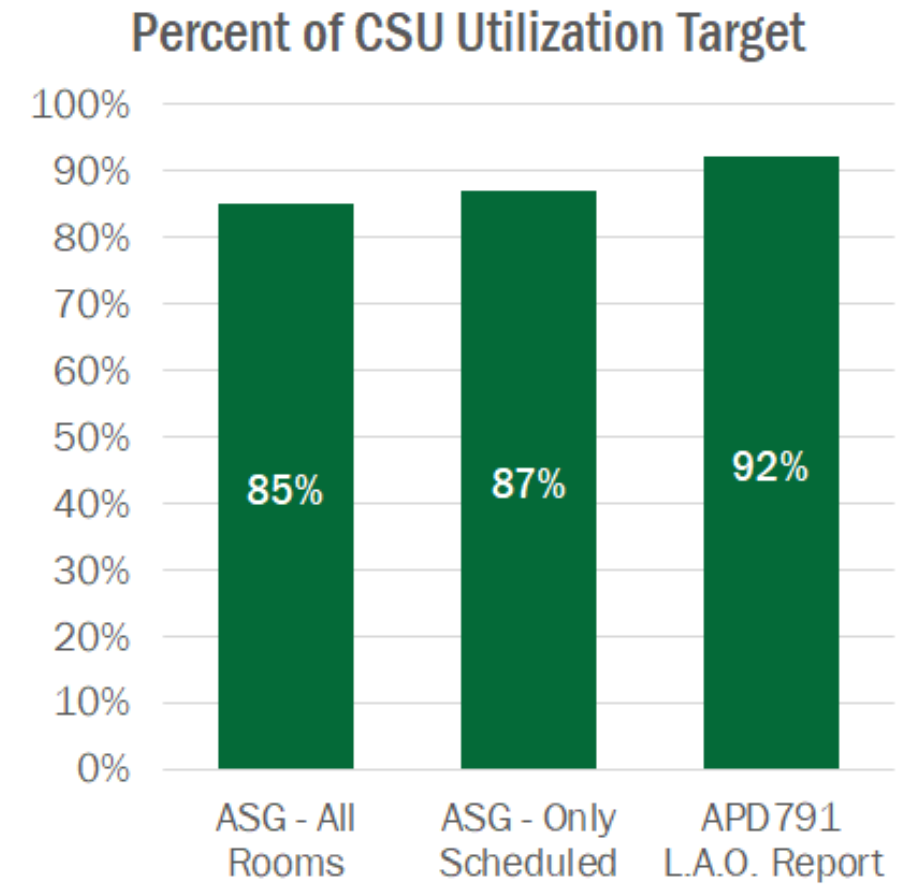
CSU Utilization Targets:			
Lower Division Lab	27.5	85%	23.37
Upper Division Lab	22.0	80%	17.60

- We show 3 fewer Labs than APD791 PO-Utilization Report (1 seat less)
- Utilization is close to internal APD791 PO-Utilization Report calculations
- 122% of LD Utilization Targets
- 135% of UD Utilization Targets

Lecture Utilization + Capacity Summary

The major difference between ASG's calculations and CSU's is the Weekly Room/Contact Hours. ASG's Weekly Room Hours are based on real time in the space and CSU's Weekly Contact Hours are based on an entered hour.

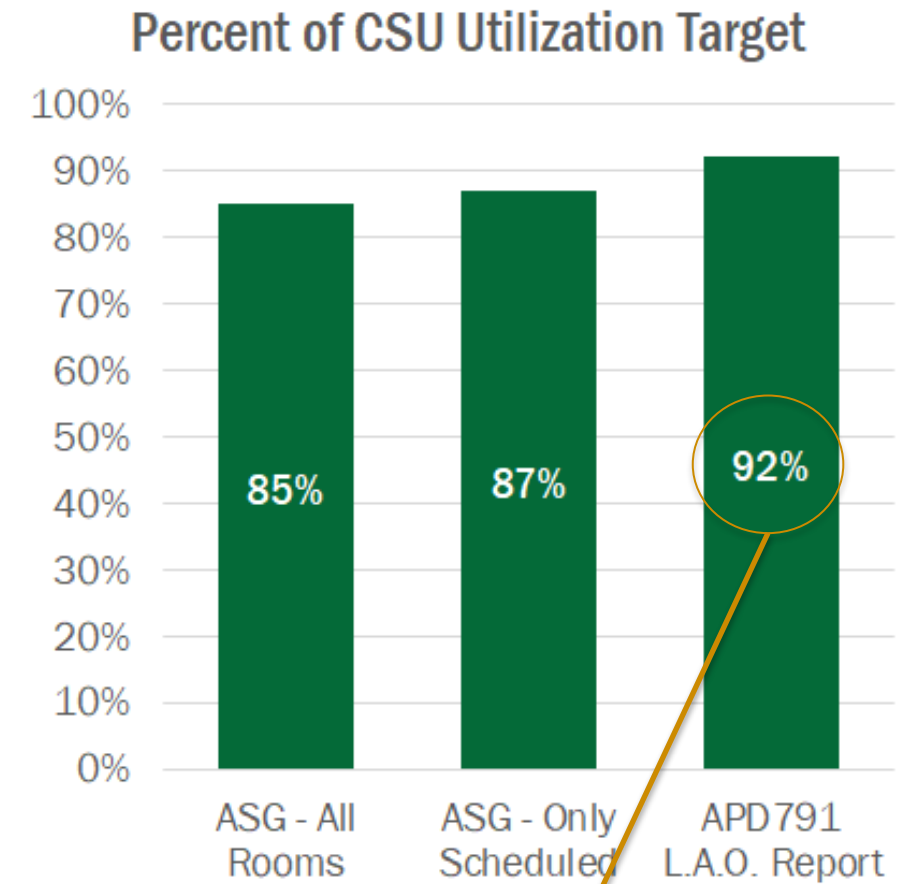
Fall Term 2017 Lecture	Room Count	Total Stations	NASF per Station	Weekly Room Hours	% Station Occupancy	Weekly Station Hours
ASG Lecture - All Rooms	165	8,006	17	38.0	73.0%	29.8
ASG Lecture - Only Scheduled	158	7,833	17	40.0	77.0%	30.5
CSU Utilization Targets	n/a	n/a		53.0	66.0%	35.0
APD791 L.A.O. Report	153	7,206	n/a	42.5	76.0%	32.3



Lecture Utilization + Capacity Summary

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APD791 L.A.O. Report	153	7,206	n/a	42.5	76.0%	32.3



Fall Term 2017 Lecture FTE Capacity	Total Stations	FTE Capacity	FTE Conversion Factor
FP_CAP_FAC_PT Permanent	7,206	16,790	2.33
FP_CAP_FAC_PT Temporary	766	1,785	2.33
CPP FTE Capacity	7,972	18,575	
ASG from Facilities File	8,006	18,654	2.33
Difference	34	79	

FTE Capacity = 18,575

Lecture FTEs* = 20,742 or 112% of Capacity

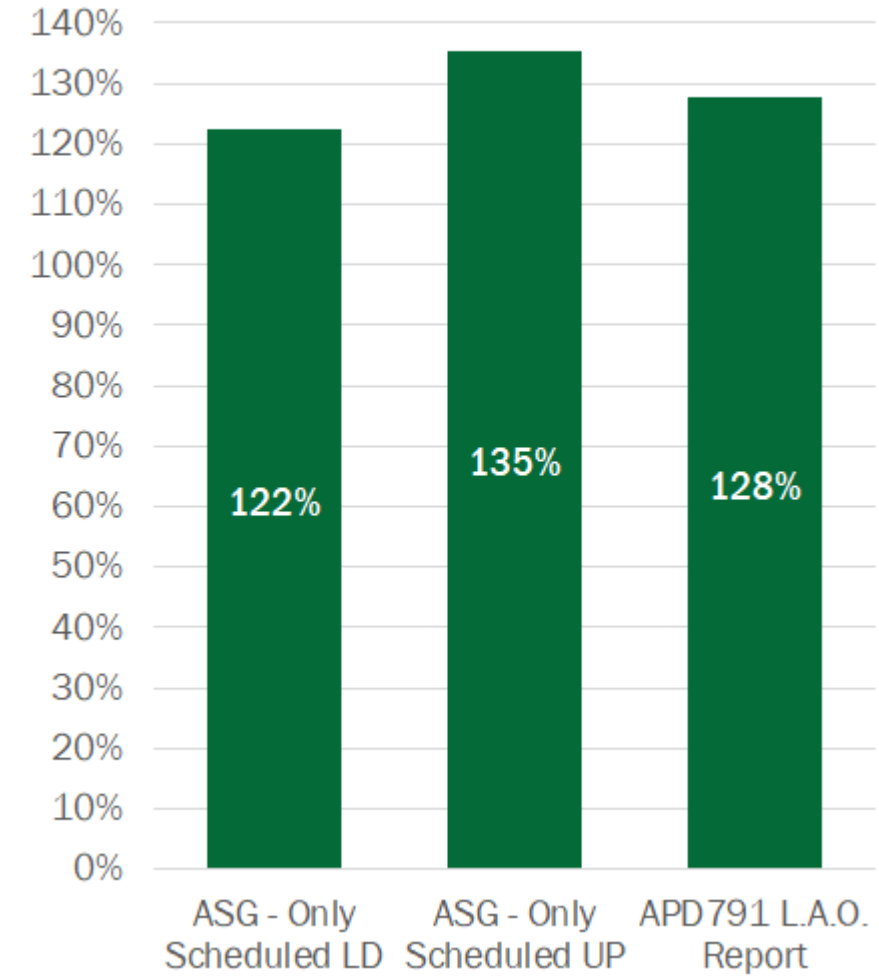
**from APD53 PGM APD76 Course Section Report for Fall 2017*

Disconnect

Laboratory Utilization + Capacity Summary

Fall Term 2017 Laboratory	Room Count	Total Stations	NASF per Station	Weekly Room Hours	% Station Occupancy	Weekly Station Hours
ASG Laboratory - All Rooms	178	3,496	62	19.0	101.0%	22.6
ASG Laboratory - Only Scheduled	153	3,109	61	23.0	117.0%	25.4
ASG Laboratory - Only Scheduled Lower Division	50	1,059	56	26.0	113.0%	28.6
ASG Laboratory - Only Scheduled Upper Division	103	2,050	63	21.0	119.0%	23.8
CSU Lower Division Utilization Targets	n/a	n/a		27.5	85.0%	23.4
CSU Upper Division Utilization Targets	n/a	n/a		22.0	80.0%	17.6
APD791 L.A.O. Report	181	3,497	n/a	23.5	108.5%	25.5

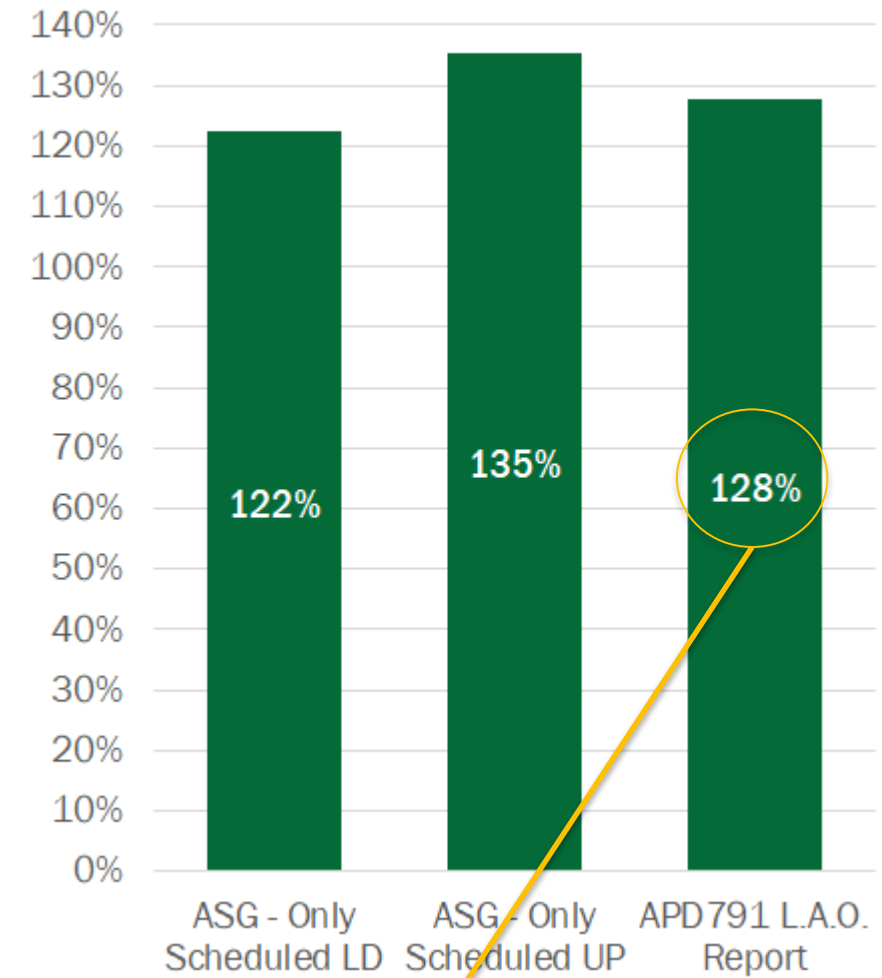
Percent of CSU Utilization Target



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ASG Laboratory - Only Scheduled Upper Division	103	2,050	63	21.0	119.0%	23.8
CSU Lower Division Utilization Targets	n/a	n/a		27.5	85.0%	23.4
CSU Upper Division Utilization Targets	n/a	n/a		22.0	80.0%	17.6
APD791 L.A.O. Report	181	3,497	n/a	23.5	108.5%	25.5

Percent of CSU Utilization Target



Fall Term 2017 Laboratory FTE Capacity	Total Stations	FTE Capacity	FTE Conversion Factor
FP_CAP_FAC_PT Lower Division	1,132	589	0.52
FP_CAP_FAC_PT Upper Division	2,365	922	0.39
CPP FTE Capacity	3,497	1,511	
ASG from Facilities File Lower Division	1,132	589	0.52
ASG from Facilities File Upper Division	2,364	922	0.39
ASG CPP FTE Capacity	3,496	1,511	
Difference	(1)	(0)	

FTE Capacity = 1,511
Lab FTEs* = 1,253 or 83% of Capacity

*from APD53 PGM APD76 Course Section Report for Fall 2017

Disconnect

Why the disconnect between percent of capacity and the percent of utilization targets?

- Only 77% of the Lecture/Seminar FTEs are being taught in Lecture facilities
- Nine percent of the Lecture/Seminar FTEs are being taught in Lab facilities
- The nine percent represents 145% of the existing FTEs being taught in Lab facilities

Analysis of Courses Held in Lecture Facilities

	No. of Sections	Weekly Room Hours	Weekly Contact Hours	Student FTEs
Lecture/Seminar Courses scheduled in Lecture Facilities	1,700	6,110	6,191.00	15,988.37
Laboratory Courses scheduled in Lecture Facilities	28	85	92.00	52.92
Activity Courses scheduled in Lecture Facilities	28	58	57.00	43.33
Independent Study courses scheduled in Lecture Facilities	13	36	39.00	63.26
TOTAL	1,769	6,289	6,379.00	16,147.88

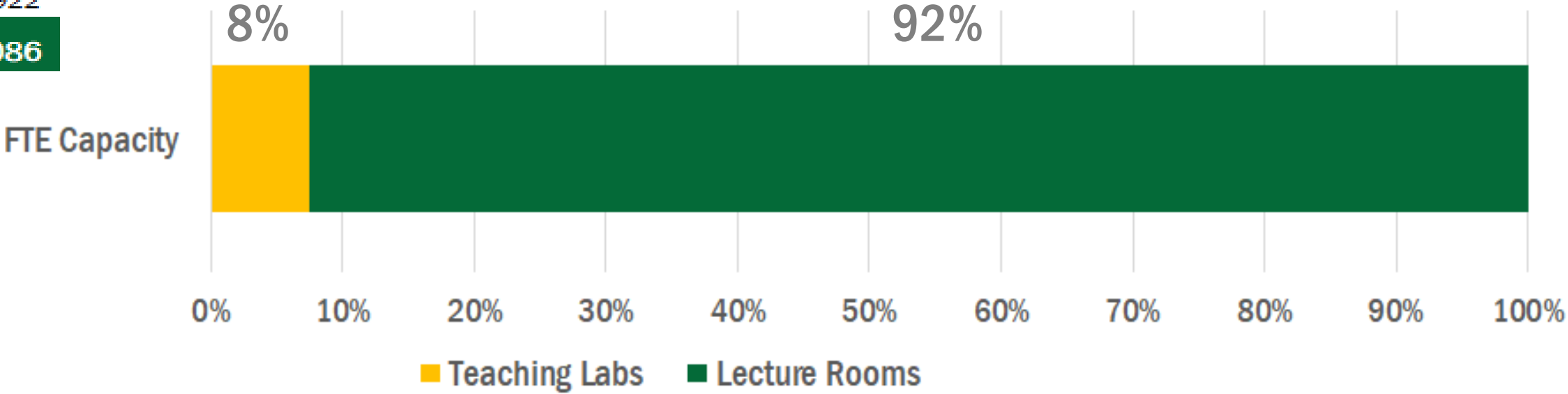
Analysis of Courses held in Laboratory Facilities

	No. of Sections	Weekly Room Hours	Weekly Contact Hours	Student FTEs
Lecture/Seminar Courses scheduled in Lab Facilities	310	908	919.50	1,816.73
Laboratory Courses scheduled in Teaching Lab Facilities	590	2,184	2,186.00	1,021.94
Activity Courses scheduled in Teaching Lab Facilities	99	408	408.00	284.32
Independent Study courses scheduled in Teaching Lab Facilities	1	1	2.00	0.40
TOTAL	1,000	3,501	3,515.50	3,123.39

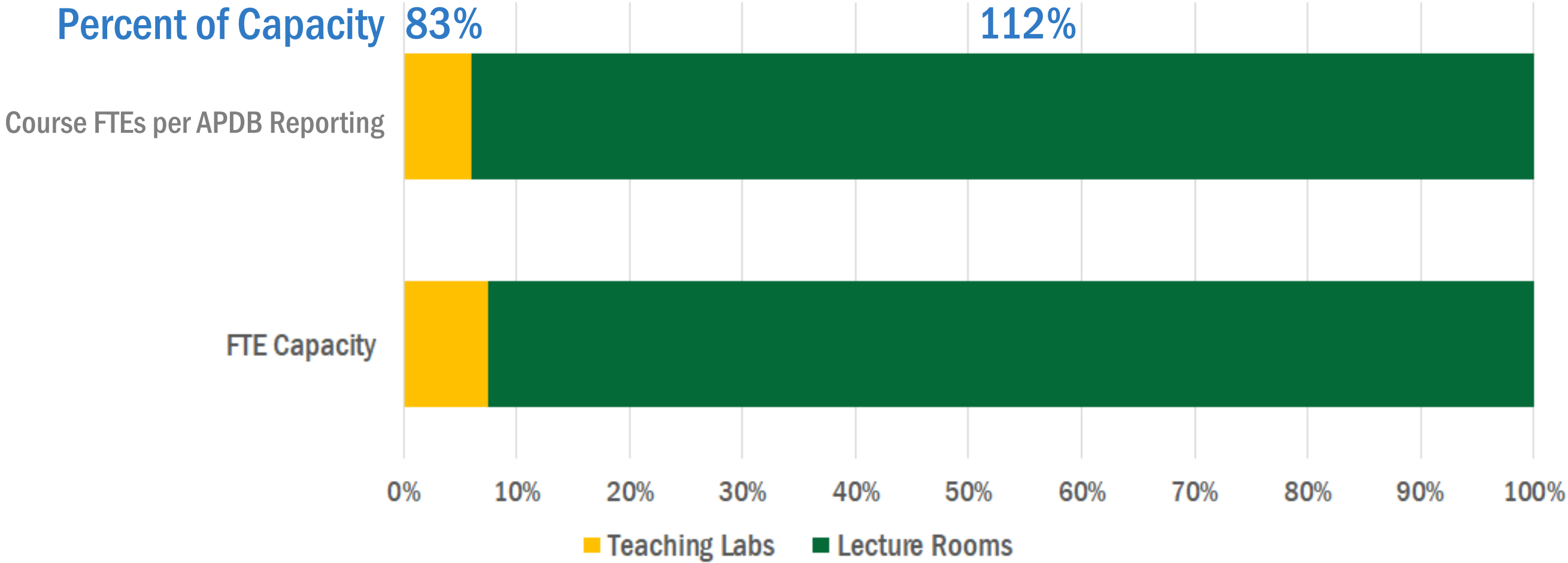
Instructional Capacity Outcome

Capacities are from the FP_CAP_FAC_PT

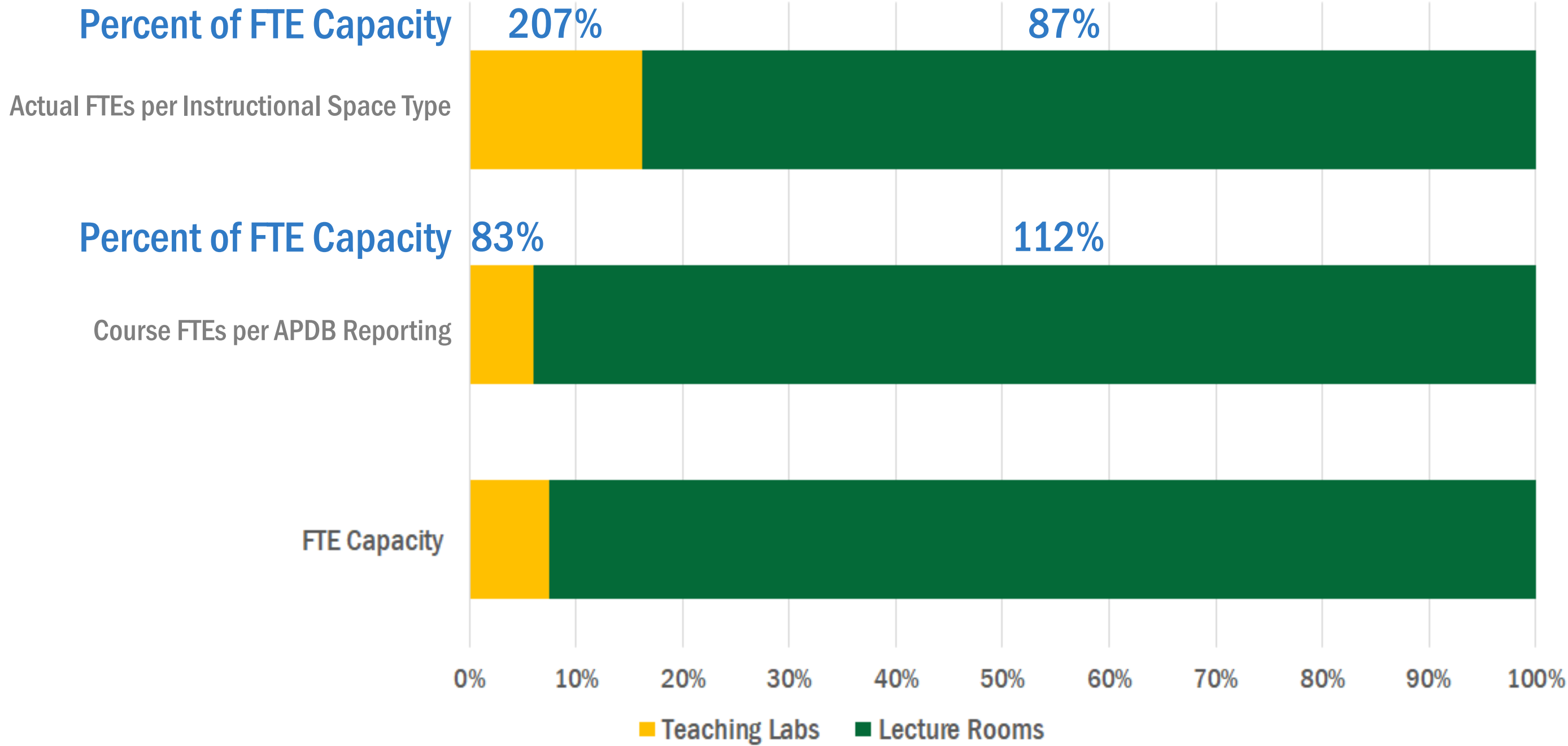
	Total Seats	FTE Capacity
Lecture Rooms	7,972	18,575
Teaching Labs	3,497	1,511
<i>Lower Division</i>	1,132	589
<i>Upper Division</i>	2,365	922
TOTAL	11,469	20,086



Instructional Capacity Outcome

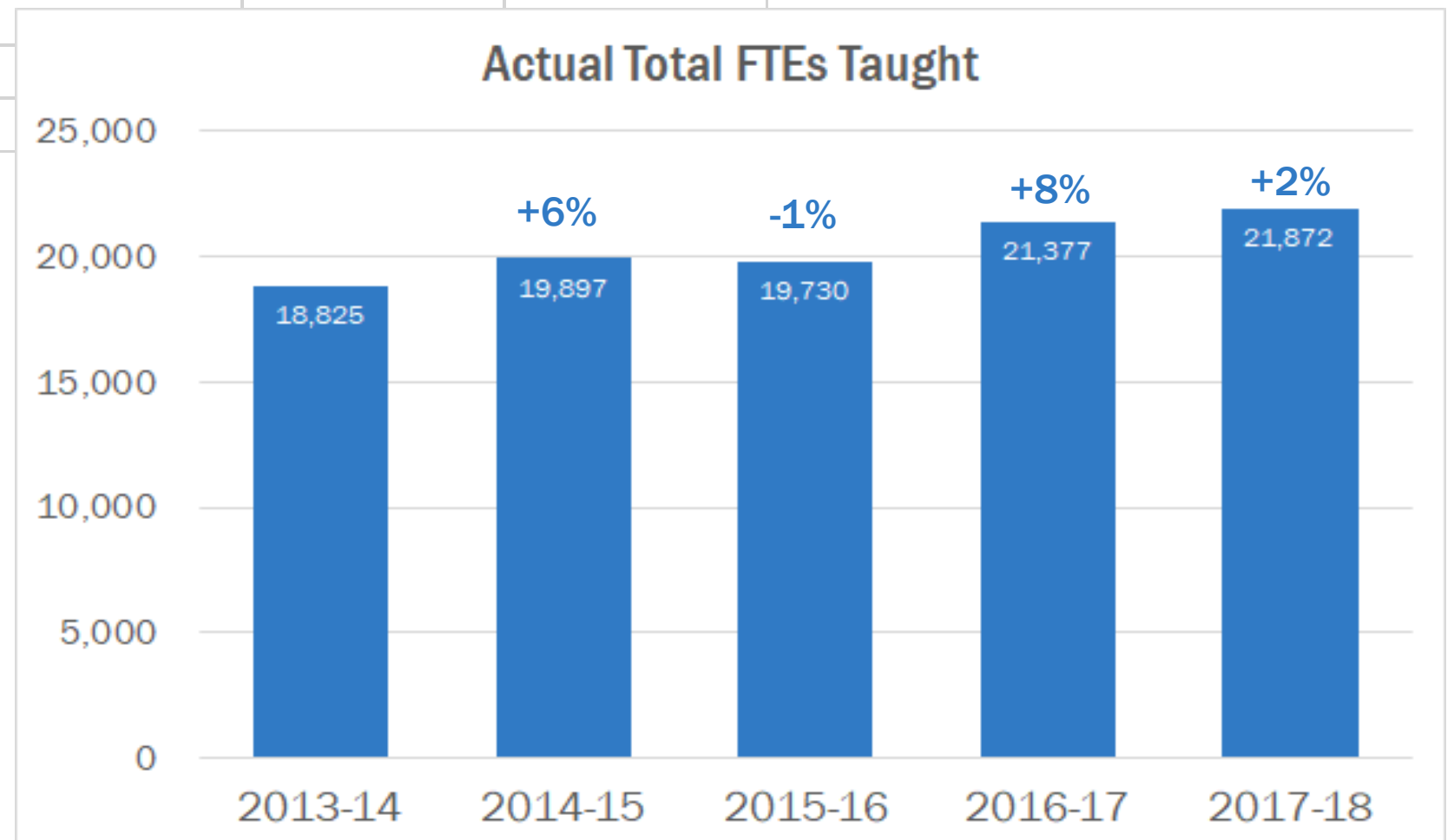


Instructional Capacity Outcome



FTE Capacity v. Actual Total FTEs Taught

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Prepared by Academic Research and Resources					



Summary of Data Themes

- FTE generation is against contact hours that don't always equal to actual scheduled time or weekly room hours
- FTEs generated by Course Component do not match the physical facility in which the course is taught
- There are spaces classified as instructional that have no scheduled use where the seat counts are contributing to capacity and reducing reported utilization
- Some physical spaces are not classified per current use because it's an arduous process to get acceptance from the system

Welcome to SAMi, California State Polytechnic University Pomona

Planning Team

Let us help you see and understand the space usage at your campus.

SAMi is an interactive data visualization tool that displays the outcomes of your institution's space needs assessment in an interactive manner. There are several reports contained within SAMi. Most of these reports have been presented to your institution in one form or another. This is your chance to view, absorb, or print the outcomes at your leisure. You may also see some details that a 60 minute timeframe doesn't allow in a presentation or workshop format.

Use your mouse to scroll over the various squares, bubbles and bars to see the details of what is being displayed. This is not a scenario planning tool but a strategy to get you involved in reviewing the outcomes of the needs assessment. There are information buttons along the way that will explain what and how to interpret the results and graphics.



Existing Space Distribution



Existing Space Distributed by Space Category

Treemap of space categories. Drill down to view what each space category encompasses.



Existing Space Distributed by Primary Unit

Select a primary unit to view its treemap and all the buildings within.



Existing Space Distributed by Building and Floor

Select a building to view its treemap. Compare building levels by space category and secondary unit.

CLASSROOM SIZE + LEARNING MODALITIES

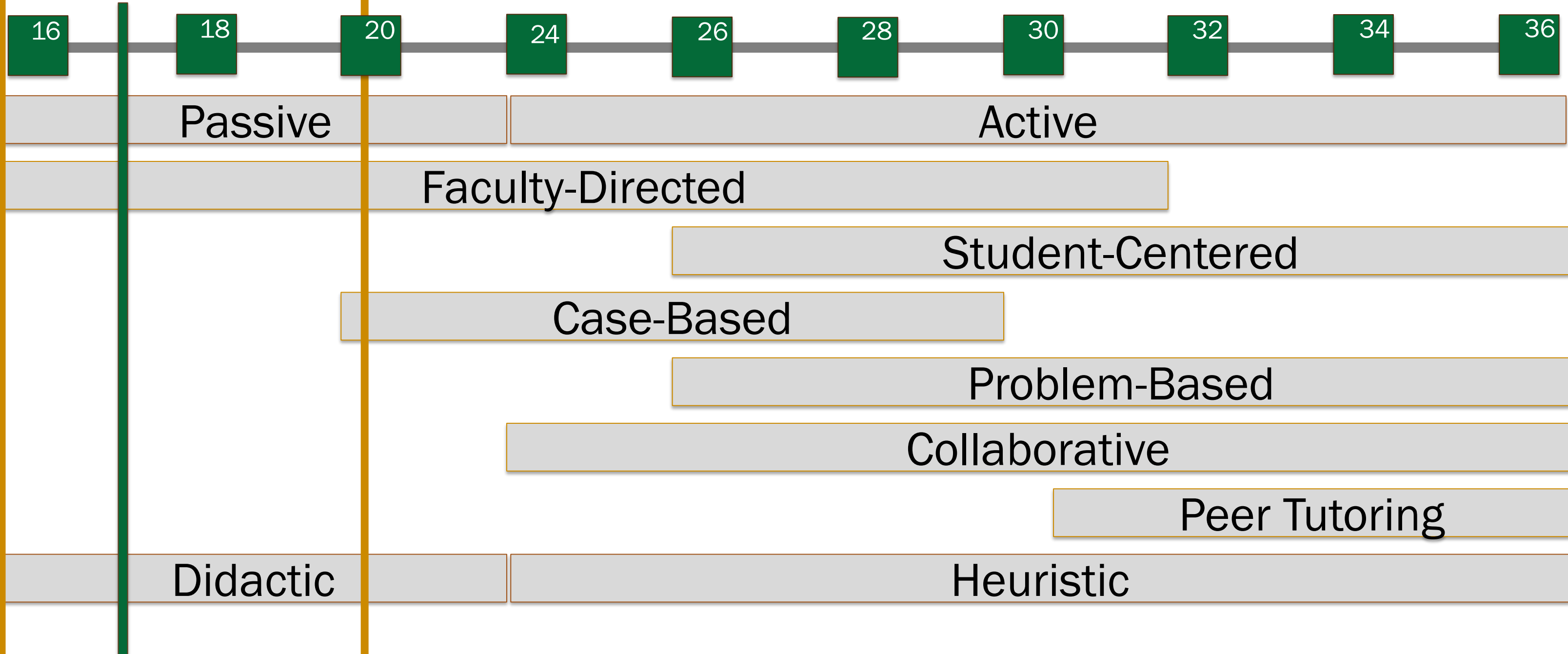
Improving Instructional Space

ASF/Student Station for Classroom Learning Modalities

15 = CSU Standard for Lecture w/tablet-arm chairs

20 = CSU Standard for Lecture w/tables + chairs

17 = CPP Average
ASF/Station





**FORWARD FACING
TABLET ARM CHAIRS = 15 SF/SEAT**





**FORWARD FACING
CHAIRS + TABLES IN ROWS = 20 SF/SEAT**



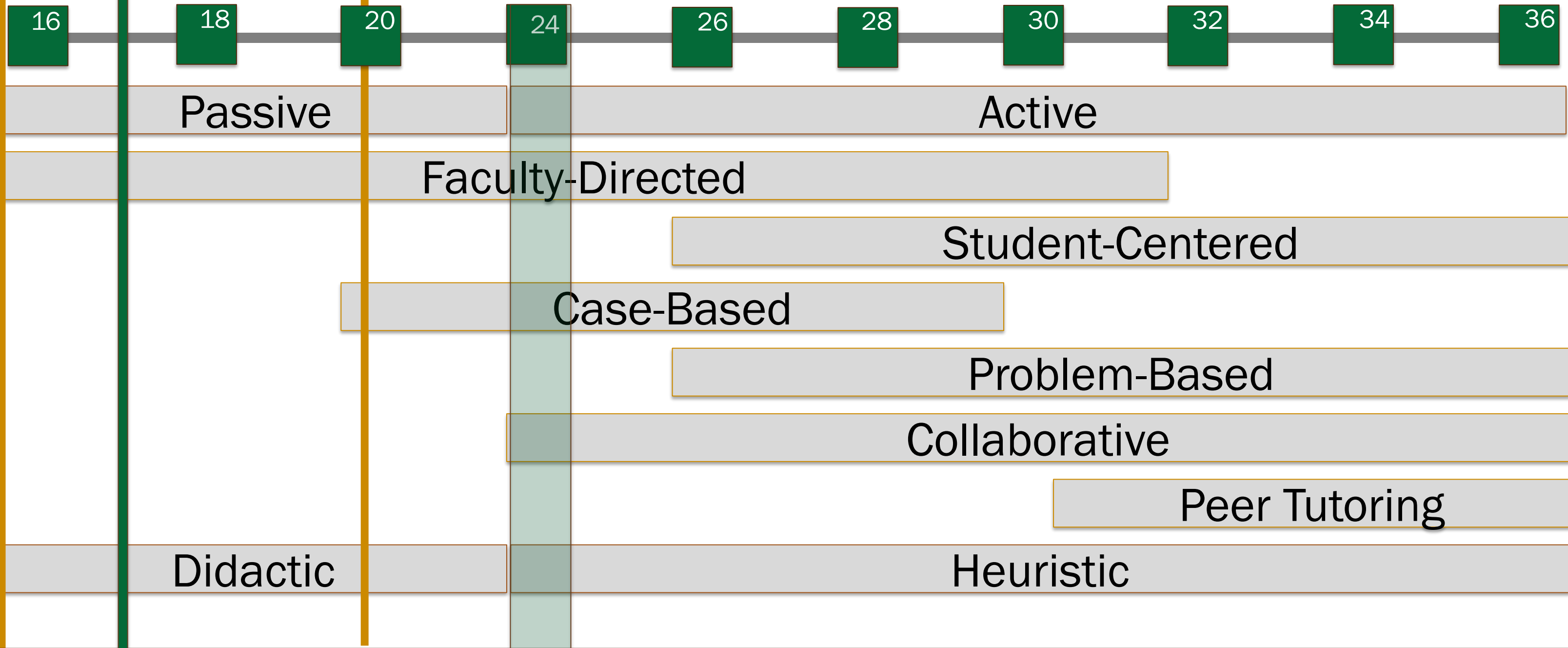
ASF/Student Station for Classroom Learning Modalities

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ASF/Station

CPP Goal?



CHALLENGES TO LEARNING ENVIRONMENTS

CHALLENGES:



EDUCATIONAL PARADIGM SHIFT

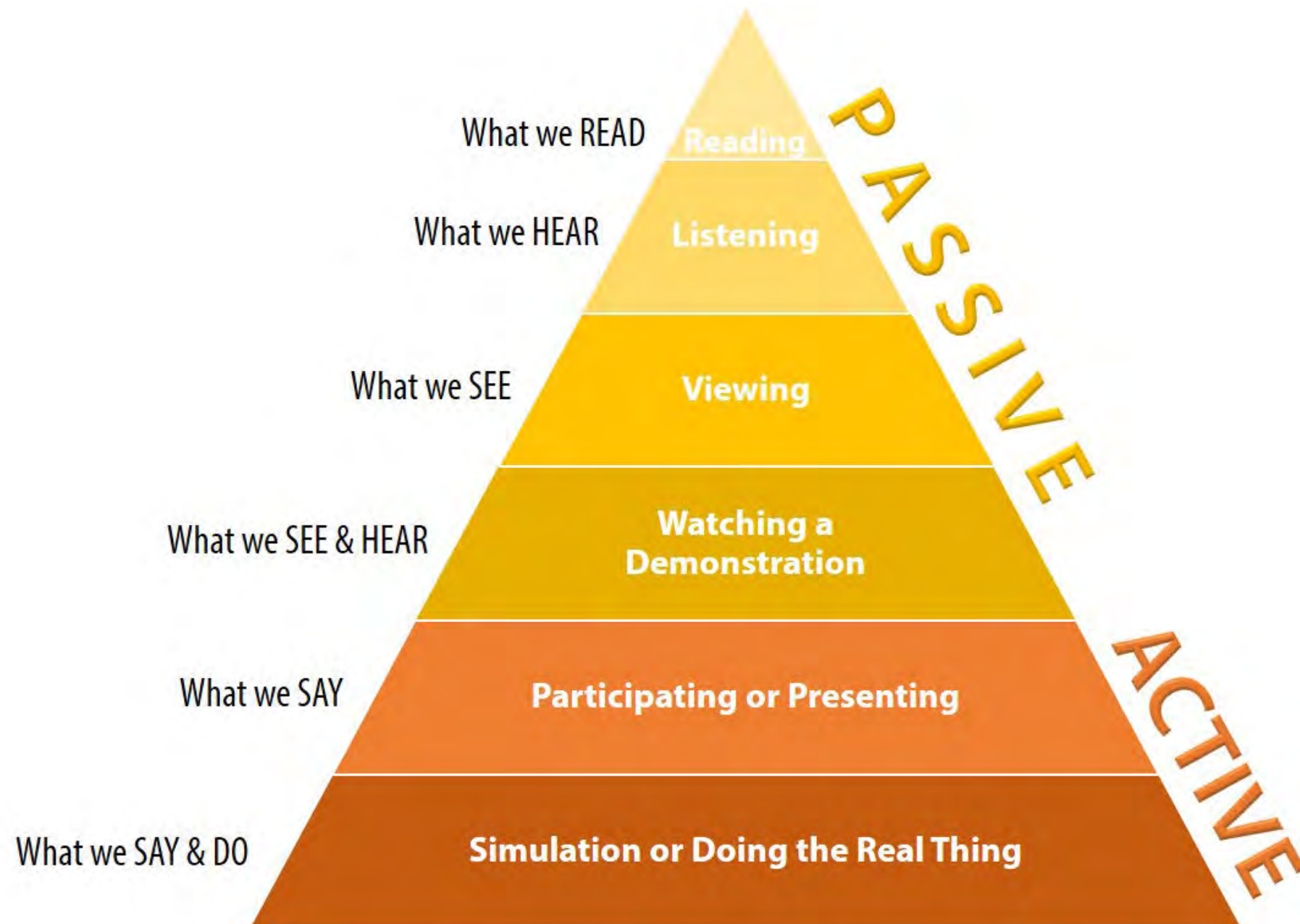
CHALLENGES:



EMERGING TECHNOLOGY

PRINCIPLES OF LEARNING ENVIRONMENTS

PEDAGOGICAL APPROACHES



The Learning Pyramid, National Training Laboratories

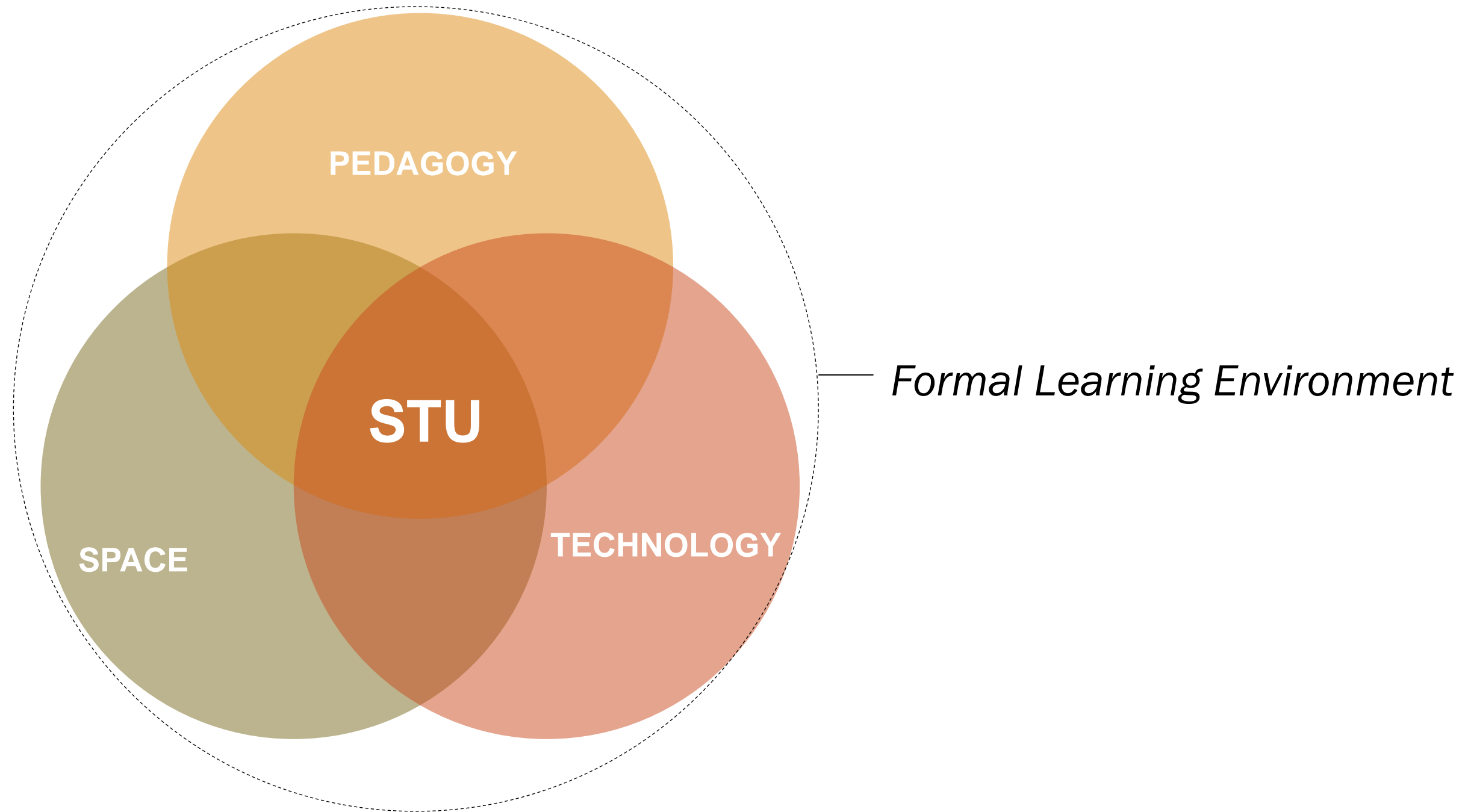
Collaborative activities foster communication, critical thinking and problem solving skills.

“Neuroscientists confirm students today are *digital natives* so we must reframe/reinvent the educational system to teach students new skills which will give them the *capacity to innovate*.

To do this, our learning environments must facilitate skills such as critical thinking, problem solving, teamwork and imagination so that our students can excel in the 21st century.”

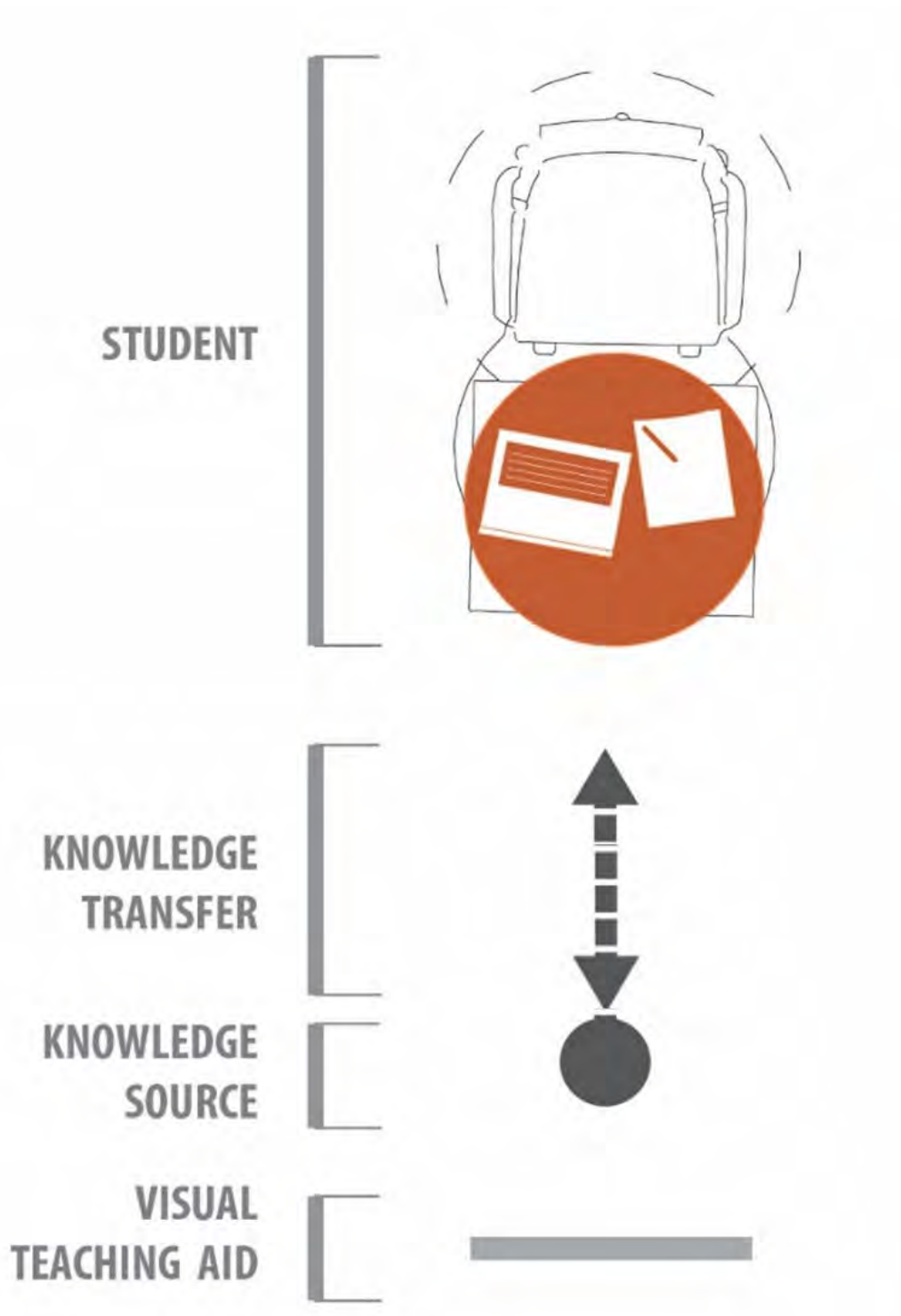
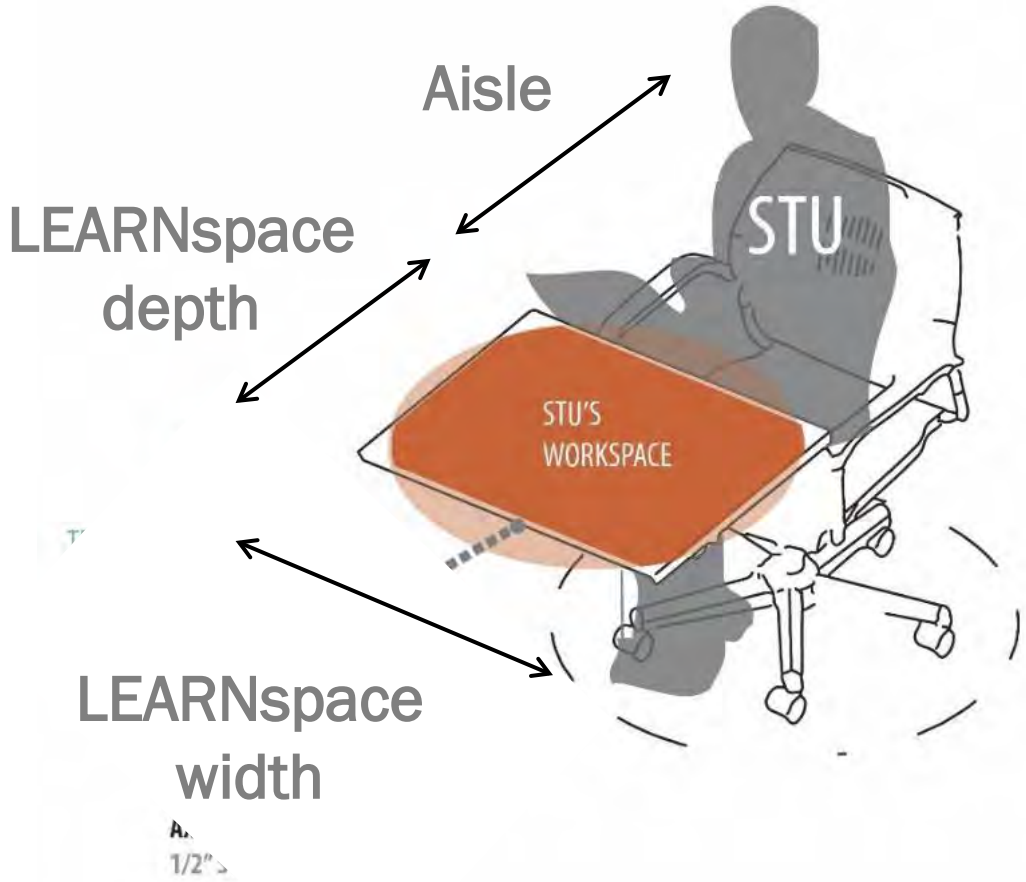
Dr. Nancy Grasmick

FACTORS THAT INFLUENCE THE LEARNING ENVIRONMENT



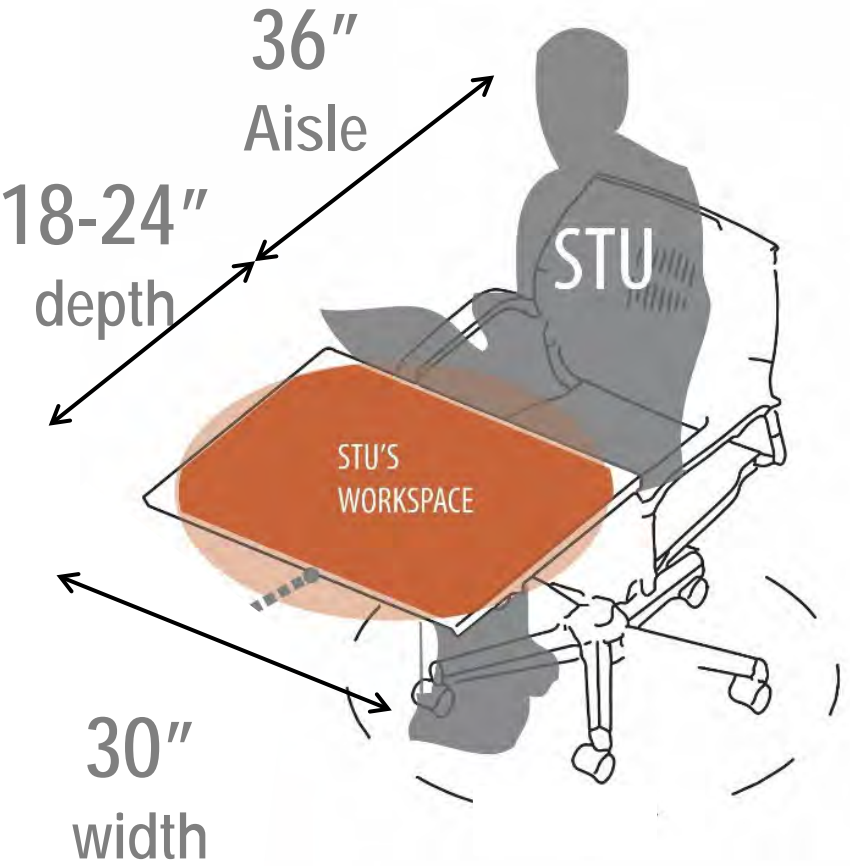
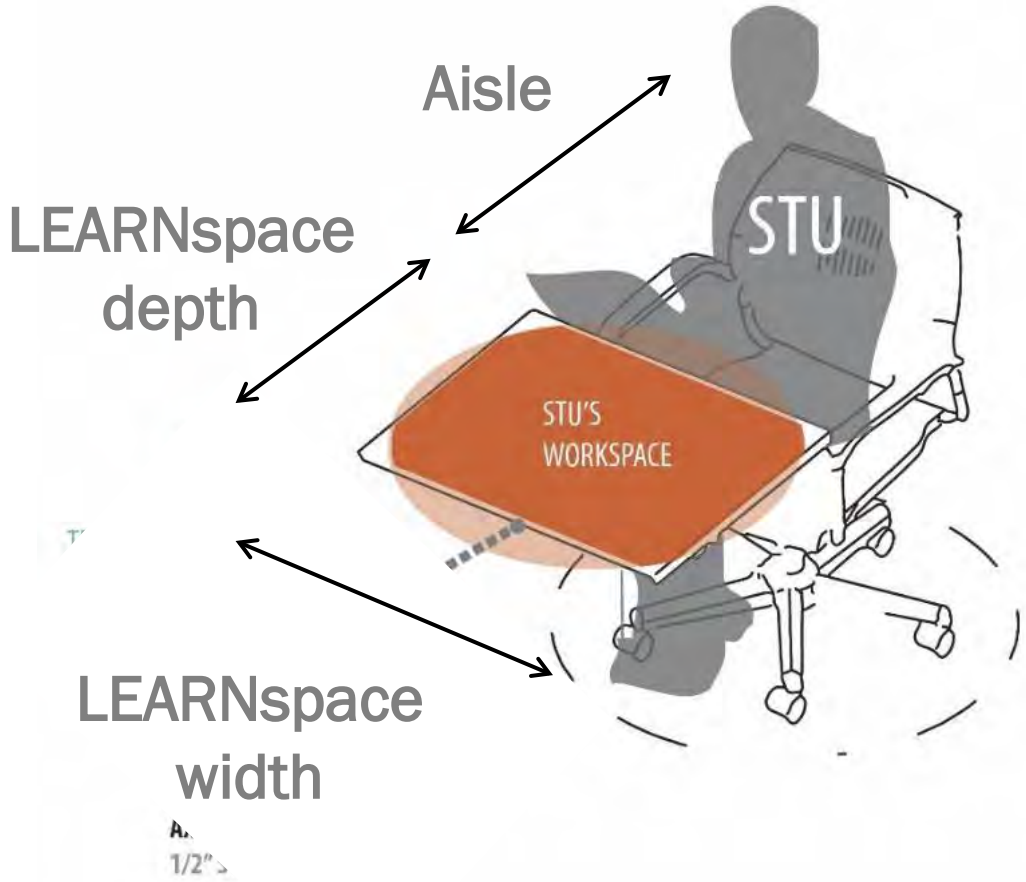
LEARNING ENVIRONMENTS FOR STUDENT SUCCESS

STU

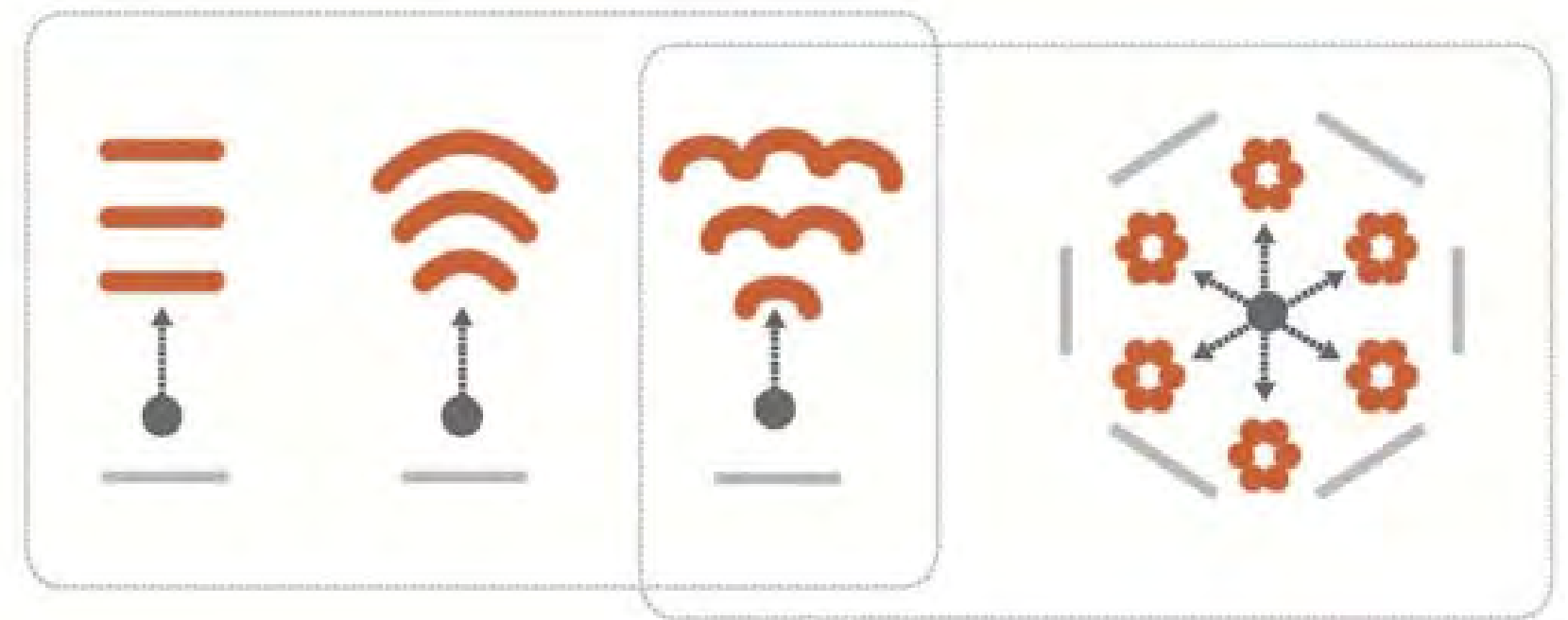
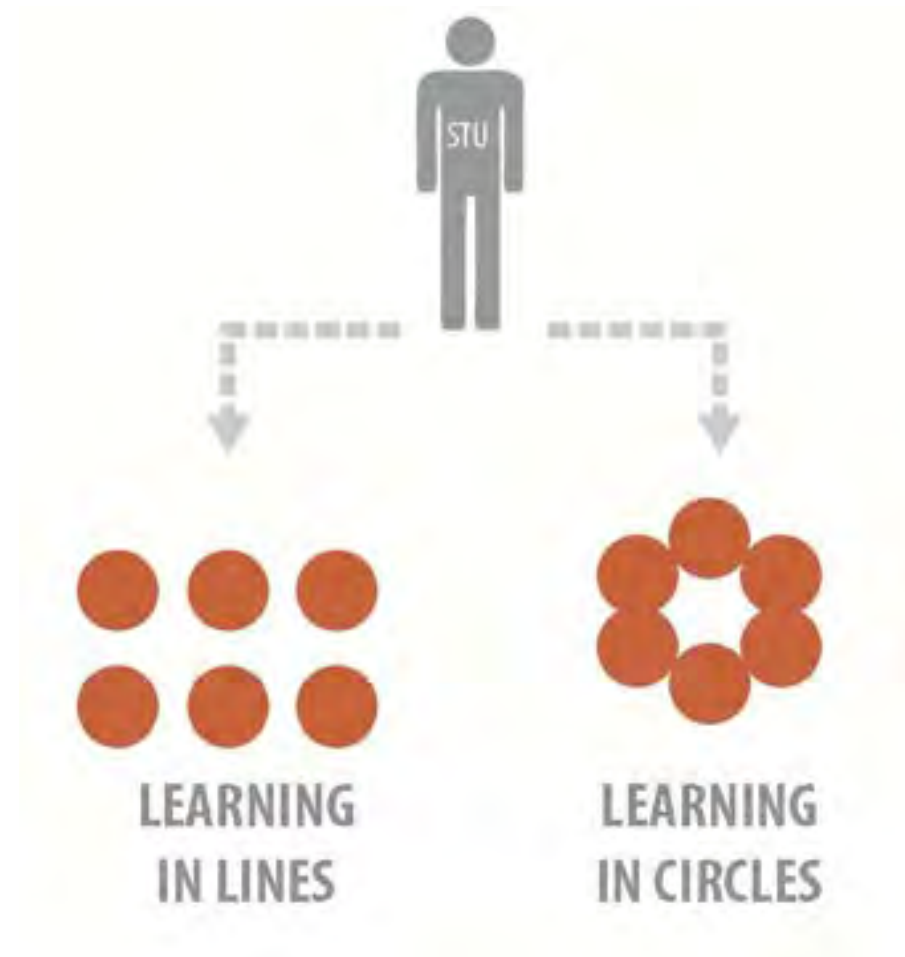


LEARNING ENVIRONMENTS FOR STUDENT SUCCESS

STU



LEARNING ENVIRONMENTS FOR STUDENT SUCCESS





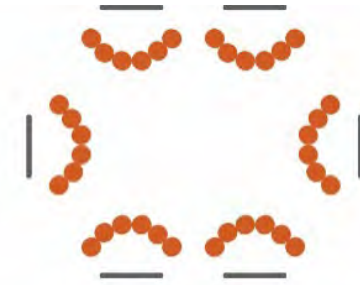
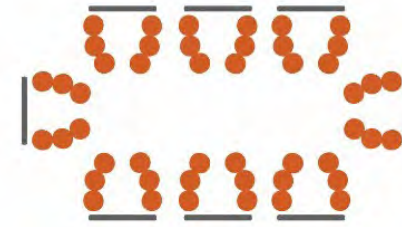
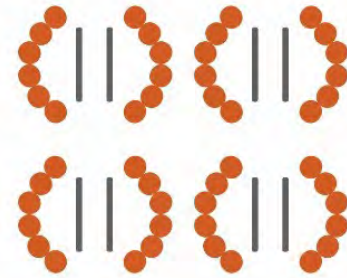
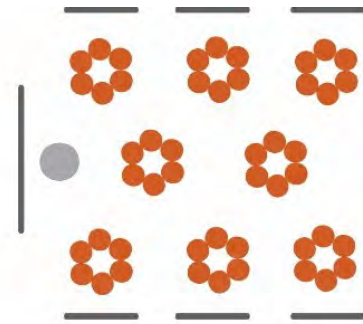
COLLABORATIVE LEARNING

- **Active Learning**
- **Team/Collaborative Learning**
- **PBL** (*Problem Based Learning*)
- **SCALE UP**
(*Student Centered Active Learning Environments with Upside Down Pedagogies*)

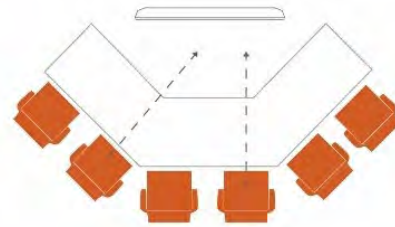
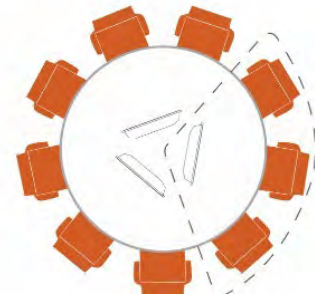


COLLABORATIVE PEDAGOGICAL MODULES

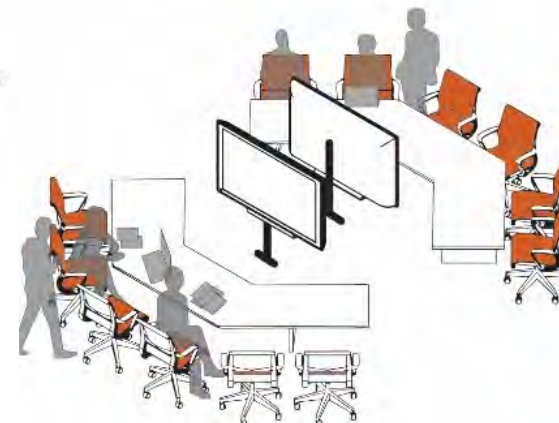
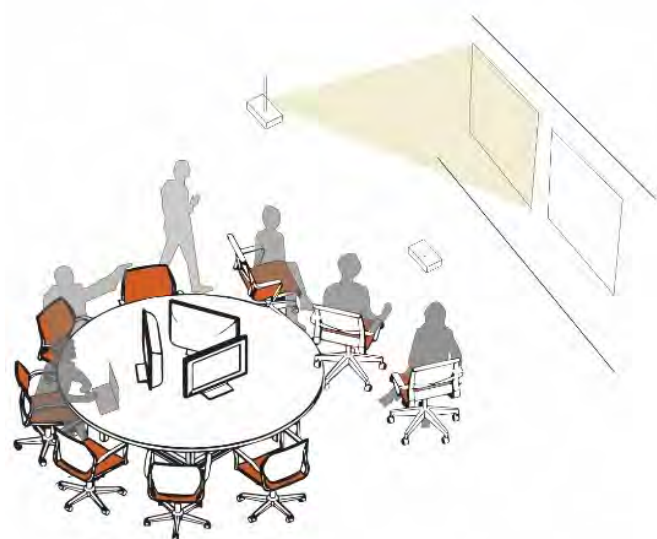
Plan



Abstract
Pedagogical
Modules

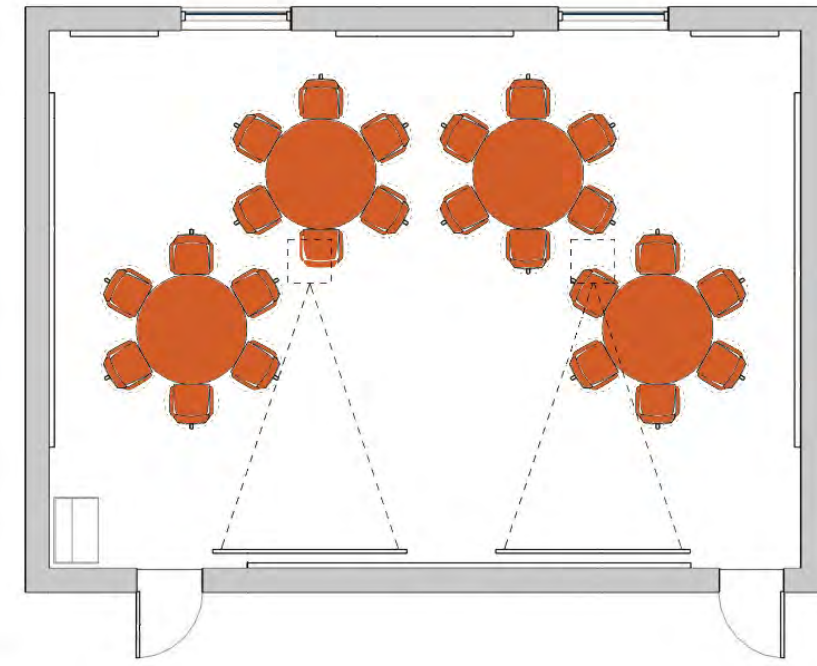
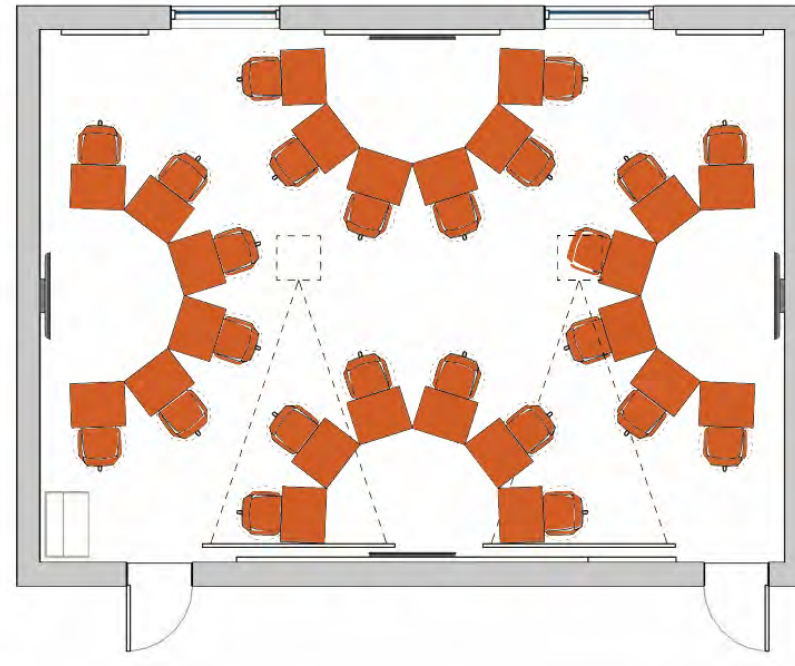
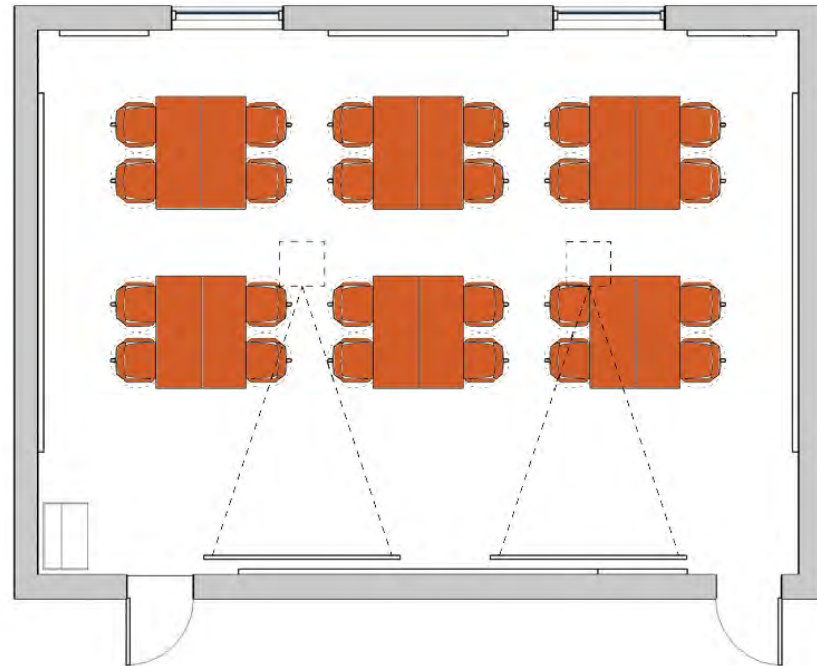
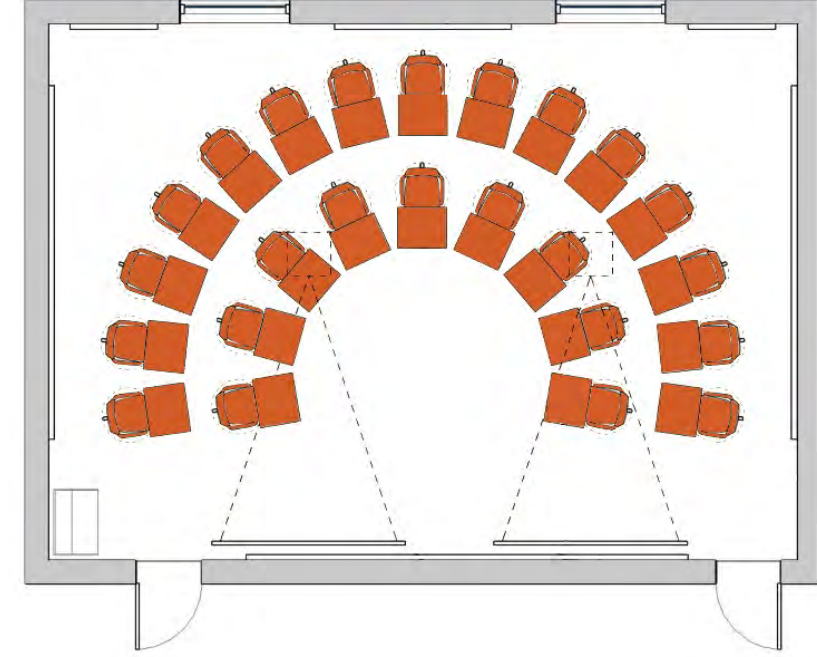
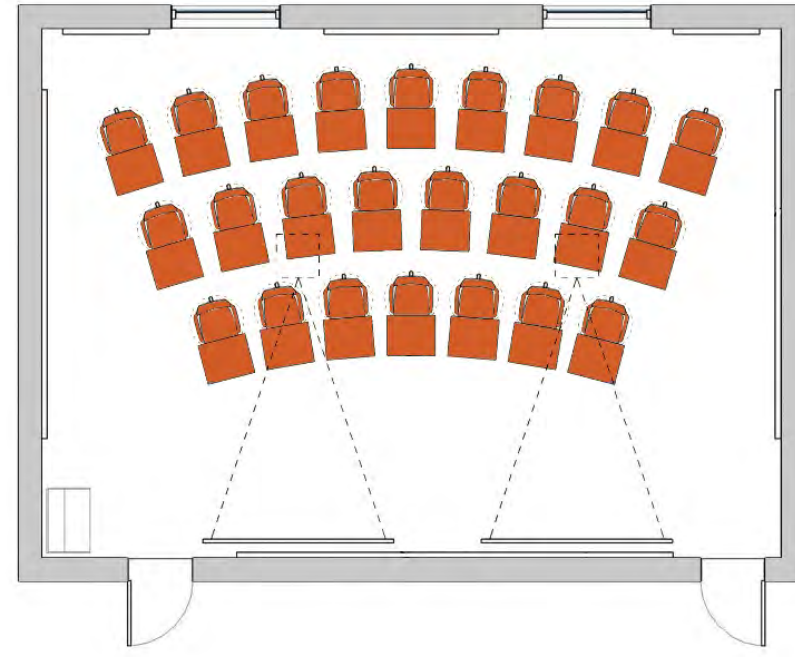
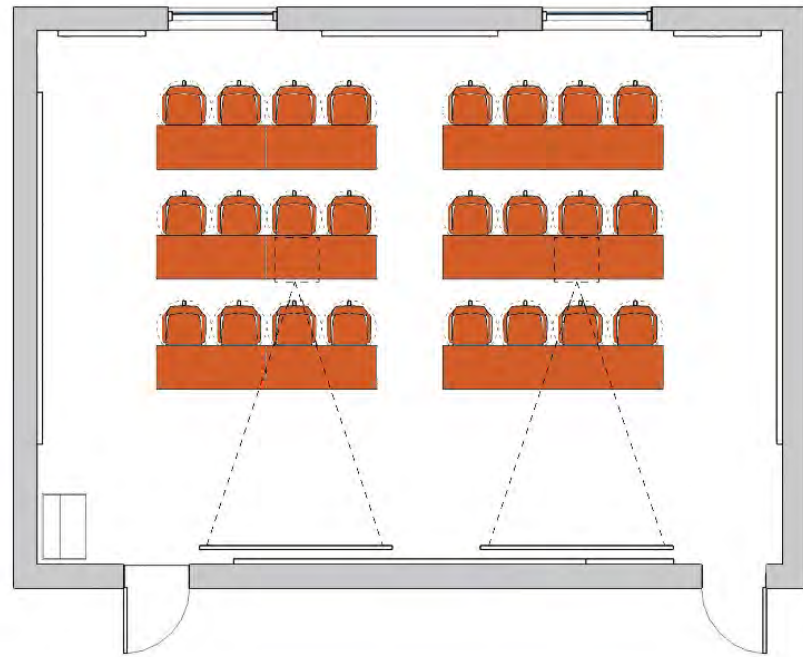


Collaborative
Groups



ONE SPACE ACCOMMODATES VARYING APPROACHES

850 NASF / 24 STU = 35 SF/STU



**LEARNING ENVIRONMENTS
FORMAT DRIVES ASF/STU**

Learning Environment Space Attributes

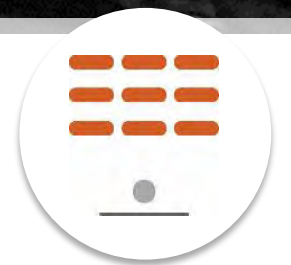
Quantitative / Measurable

- Universal or Inclusive Design
- Accessibility
- Flexible / Mobile Furniture
- Proportion & Scale
- Sight Lines
- Acoustics
- Lighting
- Thermal Comfort
- Materials & Finishes
- Durability & Maintainability
- Technology Implementation





TRADITIONAL LECTURE HALL
FIXED SEAT, TABLET ARM = 10-14 SF/SEAT

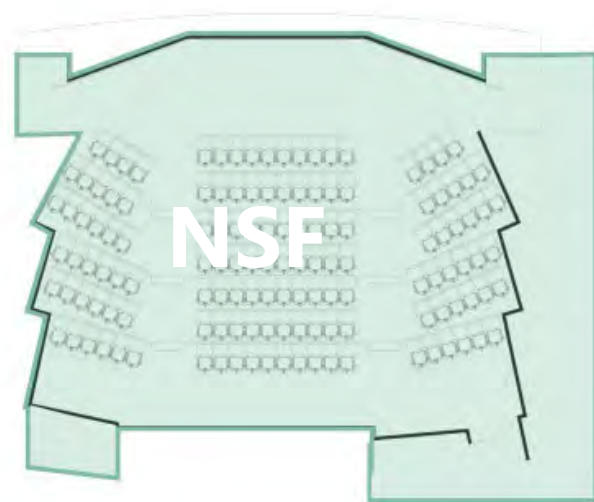




**LECTURE HALL, FORWARD FACING
TABLES IN ROWS + MOVABLE CHAIRS = 24 SF/SEAT**

Rice Hall, Olsson Auditorium
School of Engineering and Applied Science

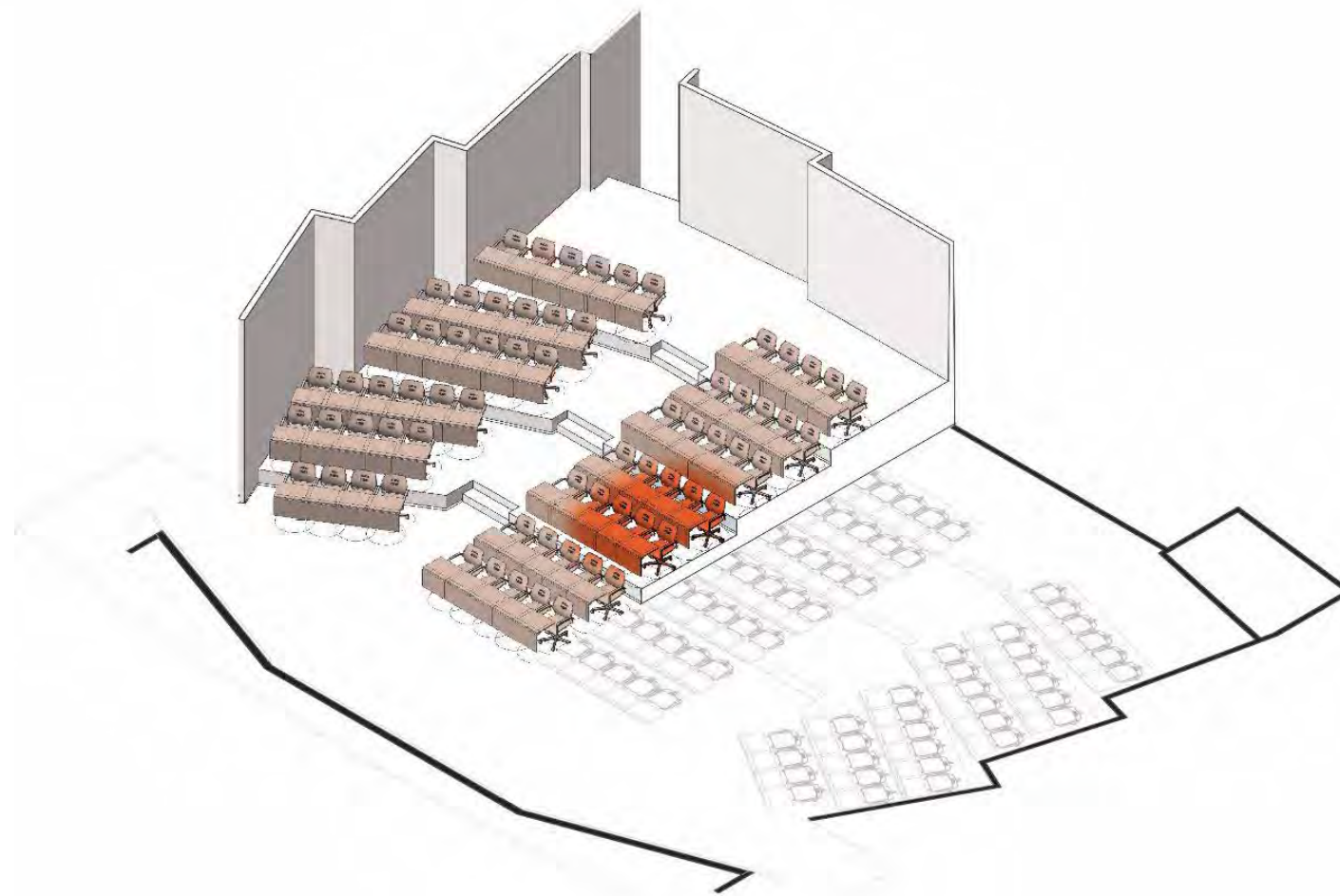
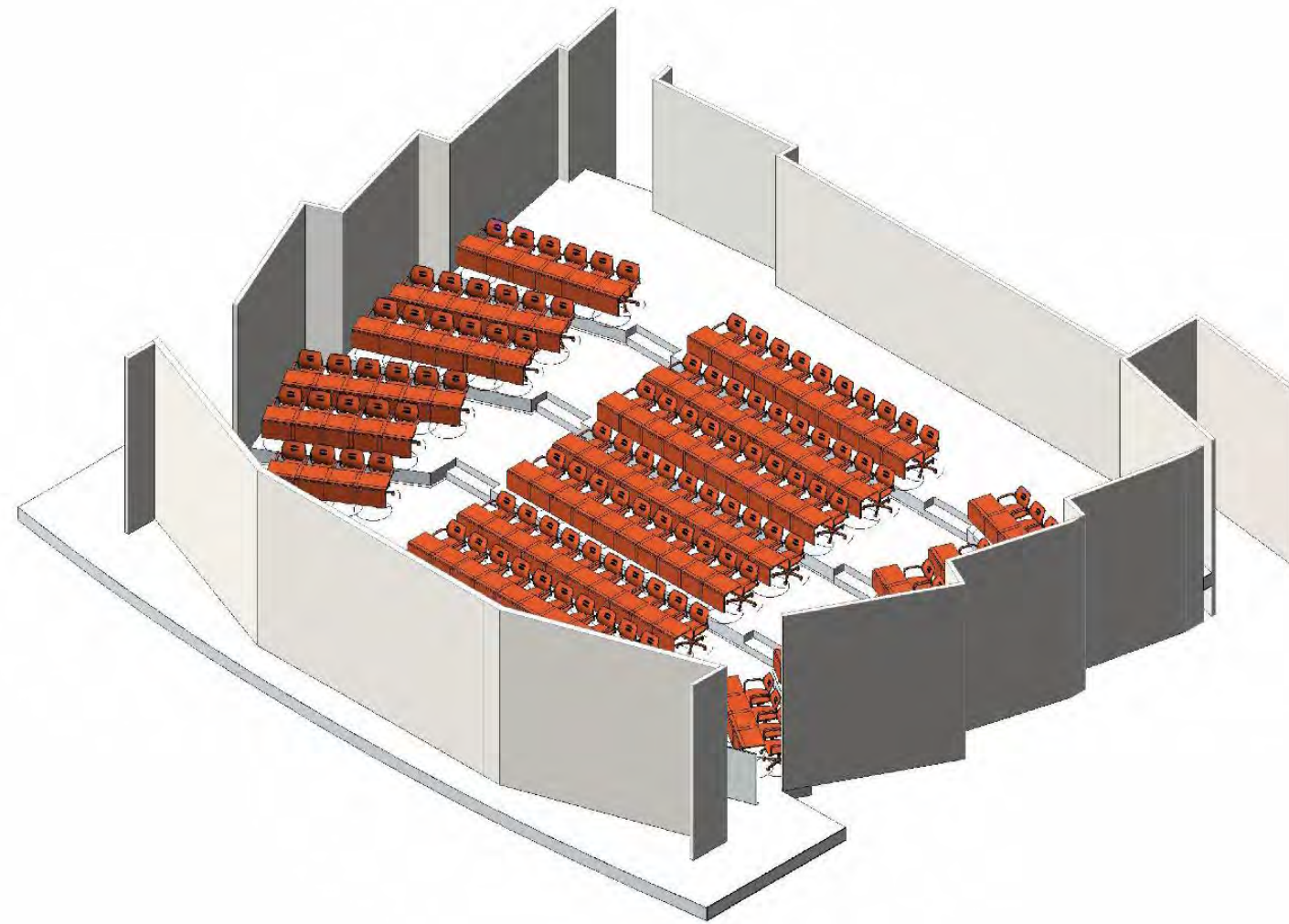




3377 ft²

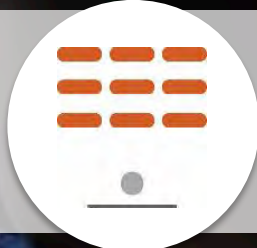
136 stu

24 ft²/stu



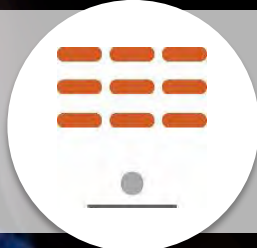


**LECTURE HALL, FORWARD FACING + COLLABORATIVE
TABLES IN ROWS + MOVABLE CHAIRS = 24 SF/SEAT**





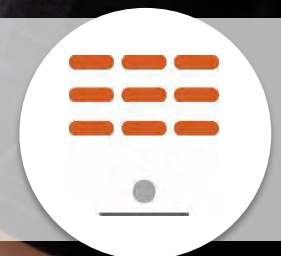
**LECTURE HALL, FORWARD FACING + COLLABORATIVE
TABLES IN ROWS + MOVABLE CHAIRS = 24 SF/SEAT**





**LARGE LECTURE HALL, FORWARD FACING + COLLABORATIVE
TABLES IN ROWS + MOVABLE CHAIRS = 20 SF/SEAT**

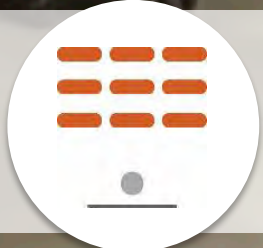
George Washington University





**CLASSROOM, FLAT FLOOR, FLEXIBLE
NODE CHAIRS = 20-22 SF/SEAT**

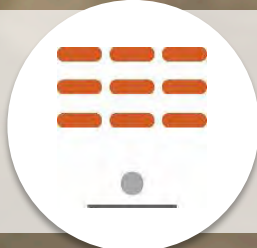
*University of Delaware
Science & Engineering Building*





**CLASSROOM, FLAT FLOOR, FLEXIBLE
NODE CHAIRS = 20-22 SF/SEAT**

*University of Delaware
Science & Engineering Building*



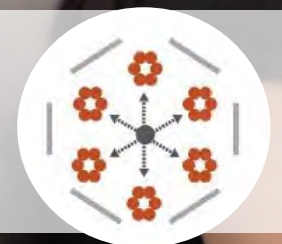


**CLASSROOM, FORWARD FACING + FLEXIBLE
COLLABORATIVE TABLES = 23-25 SF/PERSON**





**CLASSROOM, FORWARD FACING + FLEXIBLE
COLLABORATIVE TABLES = 23-25 SF/PERSON**





LEARNING LAB, MULTIPLE FRONTS
COLLABORATIVE TABLES + TECHNOLOGY = 25-30 SF/PERSON





LEARNING LAB, MULTIPLE FRONTS
COLLABORATIVE TABLES + TECHNOLOGY = 26-30 SF/PERSON

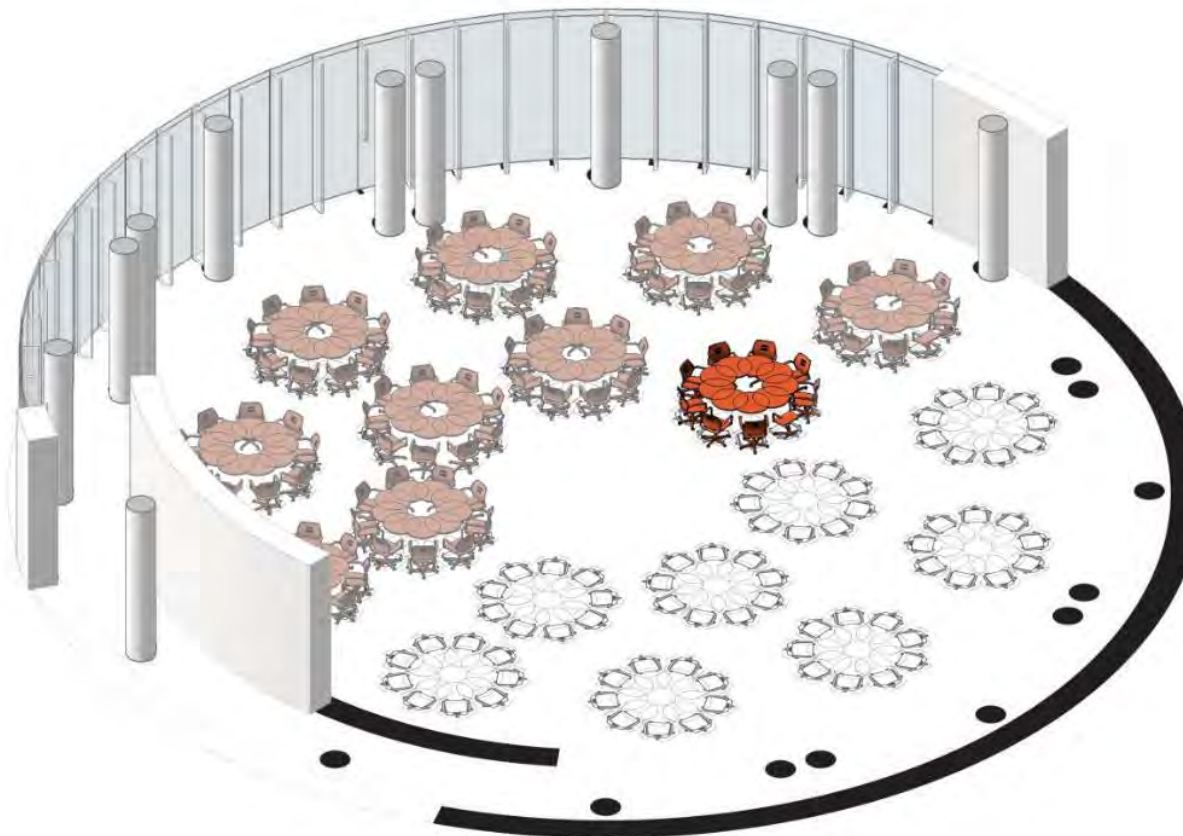
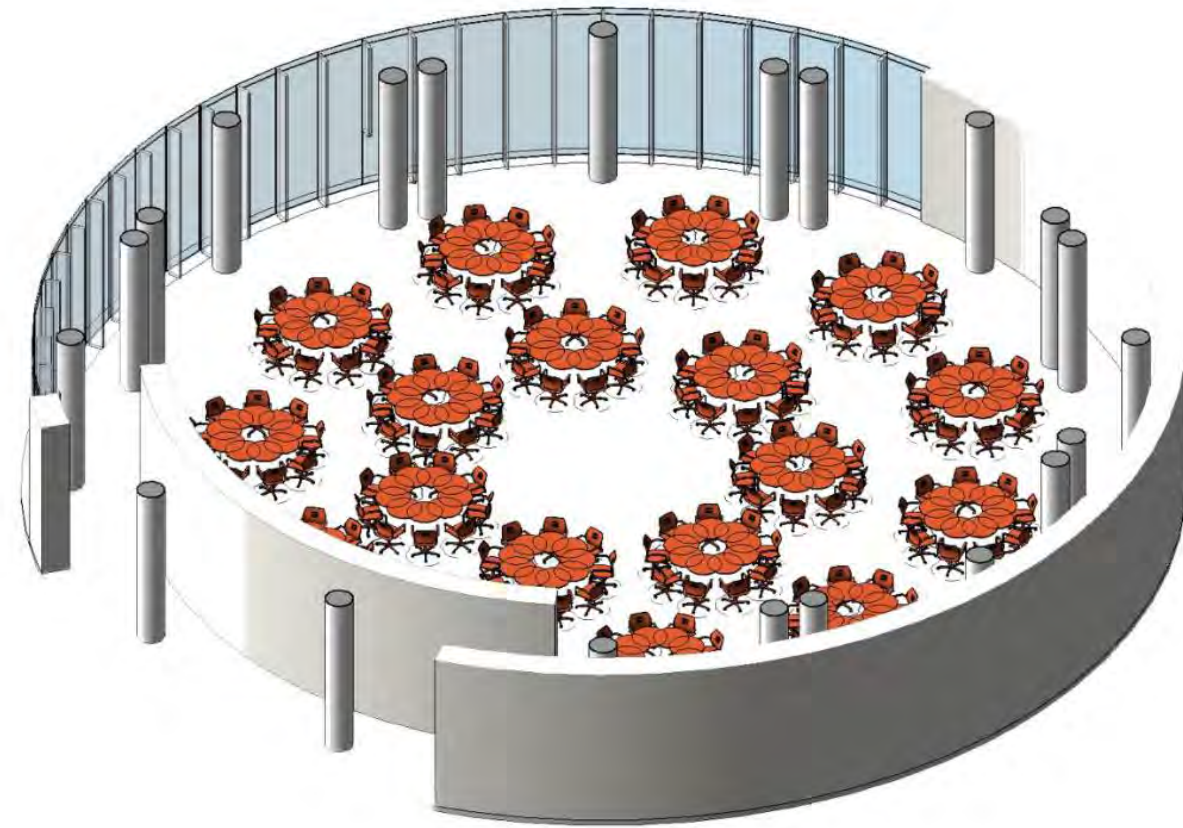
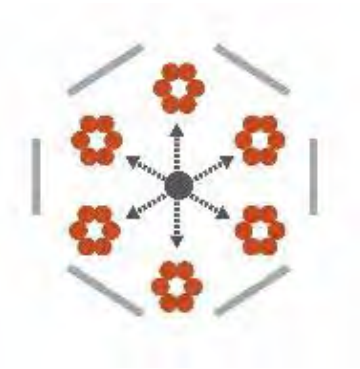




LEARNING STUDIO, MULTIPLE FRONTS
COLLABORATIVE TABLES + TECHNOLOGY = 30 SF/PERSON

*Claude Moore Hall
Medical Education Learning Studio*





4845 ft²

162 stu

30 ft²/stu

Q+A / DISCUSSION



NEXT STEPS

- **Fall 2018 Semester Utilization Analysis**
- **Classroom Demand Study**
- **Academic Stakeholder Sessions**
- **Space Needs Assessment**



Thank you!

AYERS
SAINT
GROSS

