



The Millennials have landed.



Session: 093005

Date: Friday, September 30, 2016

Time: 8:30pm – 9:30pm



Shaping the Future: Top Trends that Impact STEM facilities

Presented by:

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Agenda

1 Millennials – Who are they?

2 Discovery-based Learning Attributes

3 STEM Facilities for Millennials

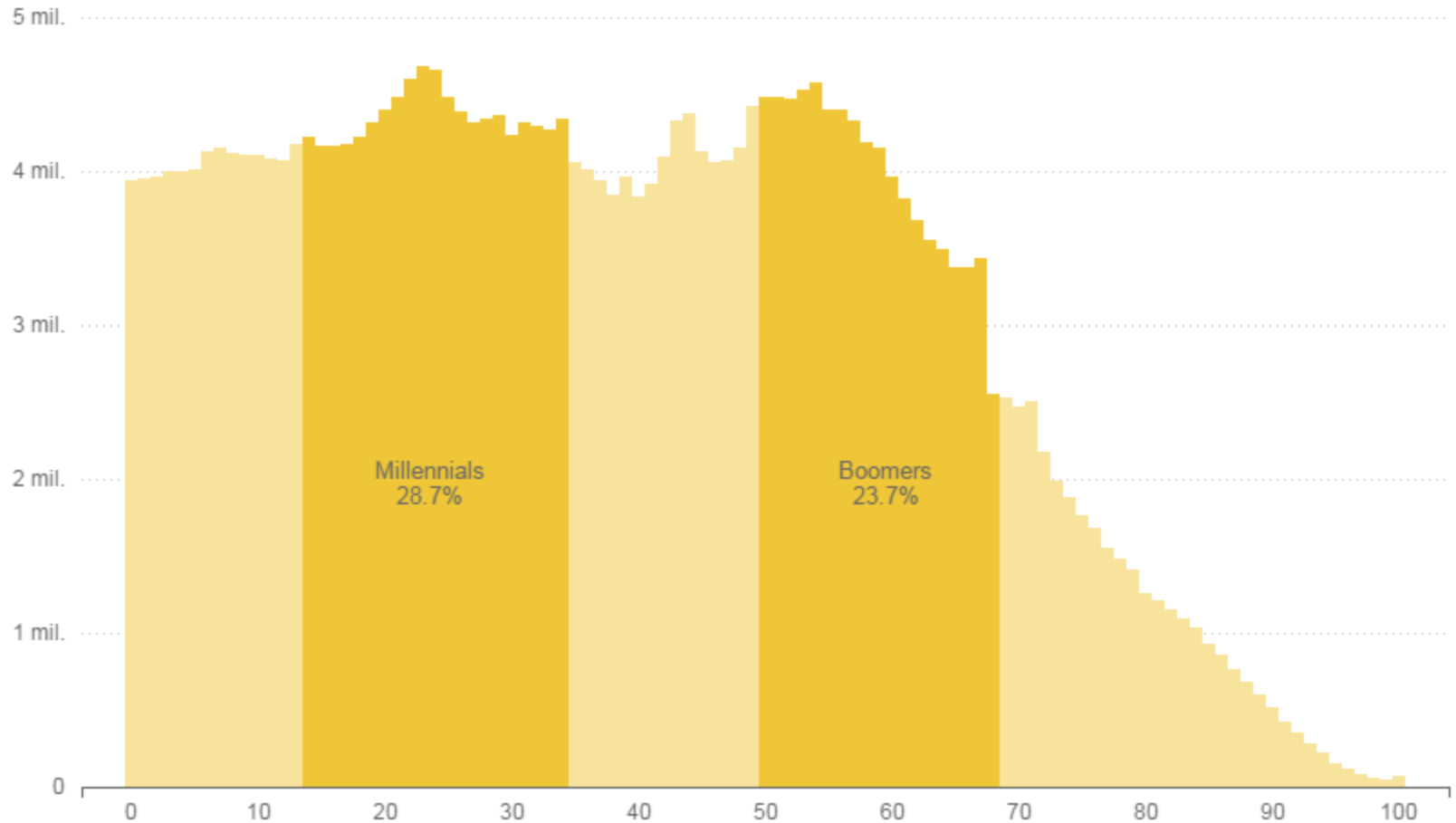
4 Summary

1

Millennials – Who are they?

U.S. Estimated Population, By Age

Millennials make up the largest share of the U.S. population, at 28.7 percent.



Notes

Here, we define millennials as being born between 1980 and 2000, and baby boomers, between 1946 and 1964.

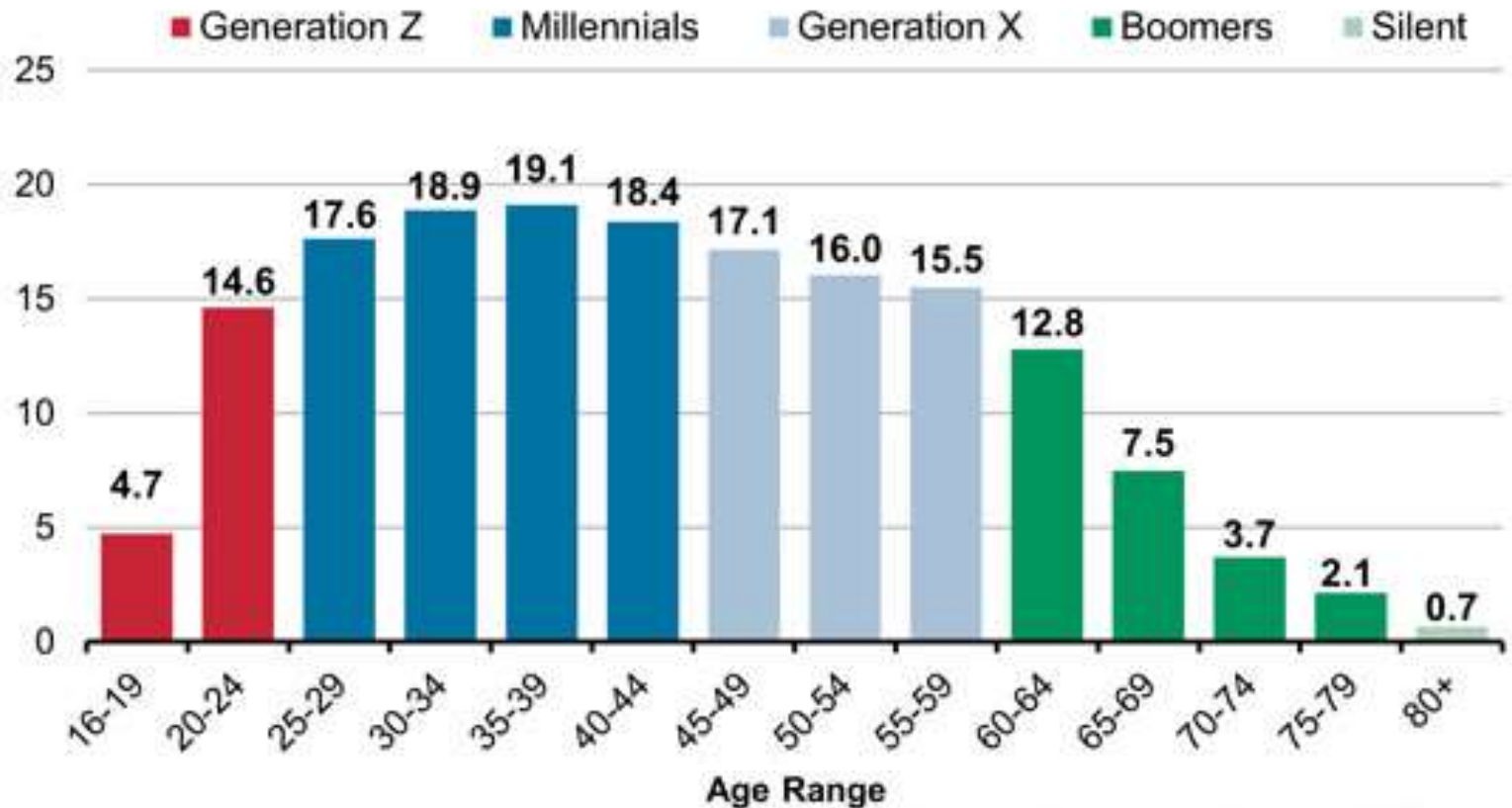
Source: U.S. Census Bureau Monthly Population Estimates (June 2014)

1

Millennials – Who are they?

The Workforce in 2025

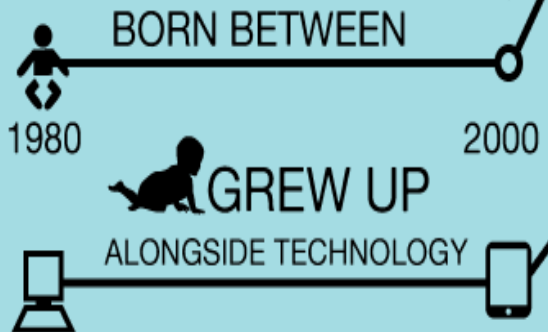
Projected size of U.S. labor force (in millions) by age, for the year 2025



Source: Department of Labor | WSJ.com

1 Millennials – Who are they?

WHO ARE MILLENNIALS?



“GEN Y”

80 MILLION IN THE U.S.



LARGEST GENERATION YET

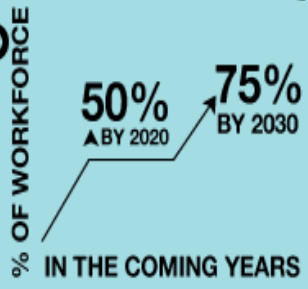
2.5 BILLION WORLDWIDE

MOST ETHNICALLY & RACIALLY DIVERSE



DOMINANCE OF SOCIAL NETWORKS

DO THEY MATTER?



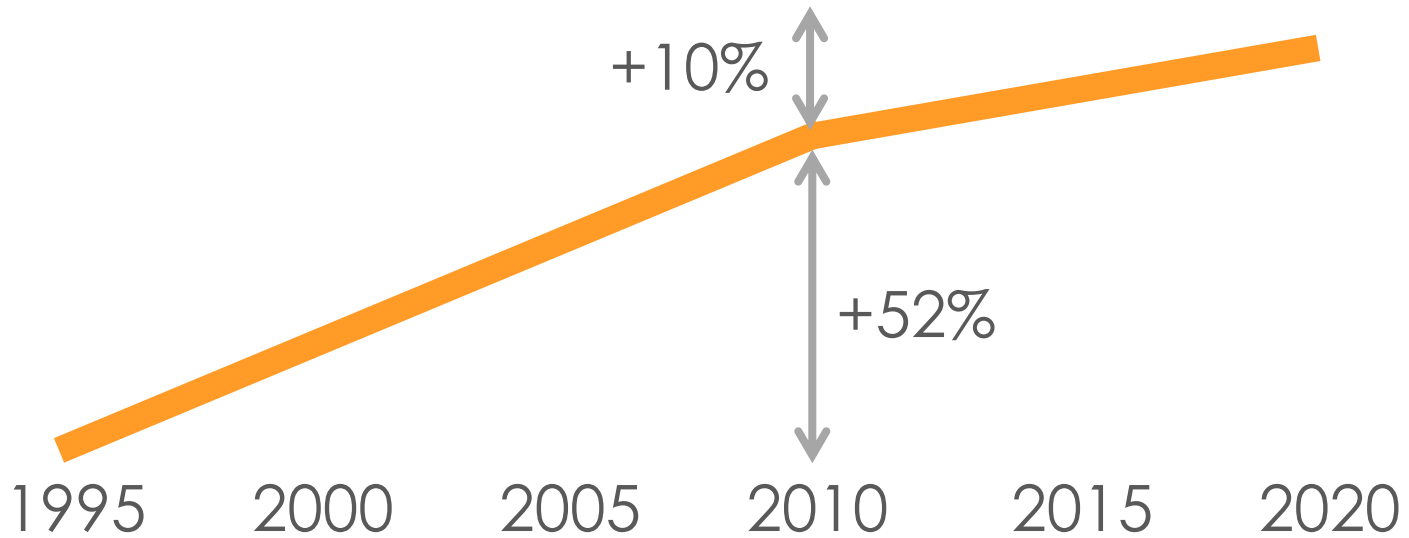
MAKE A DIFFERENCE W/ THEIR WORK

- CONFIDENT
- HAVE HIGH EXPECTATIONS
- ACHIEVEMENT ORIENTED

Image from Why Millennials Matter (www.whymillennialsmatter.com)

1

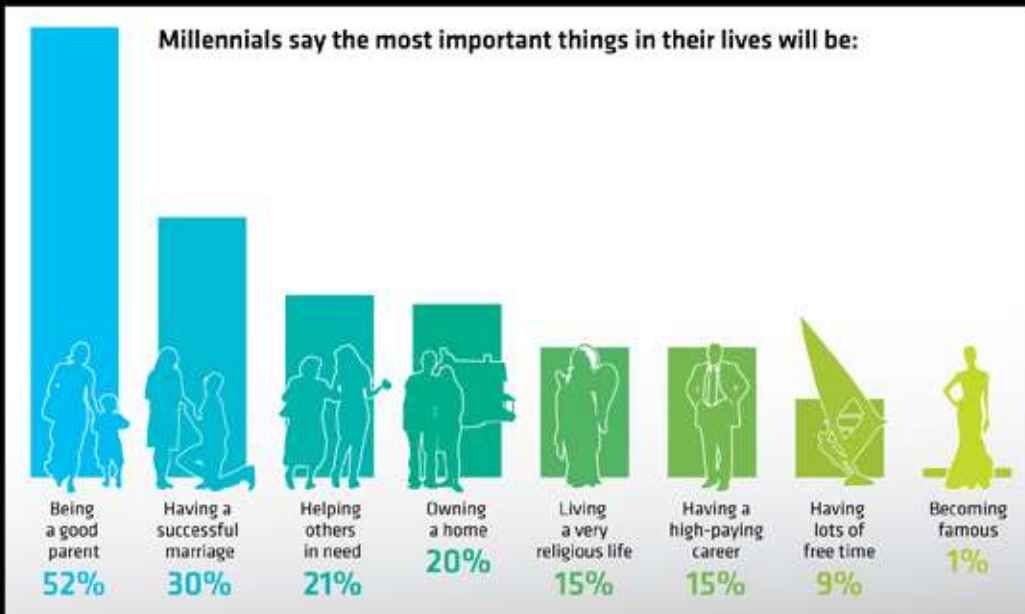
Millennials – Who are they?



College Enrollment (Age 18-24)
US Dept. of Education

1 Millennials – Who are they?

THE DEMOGRAPHICS

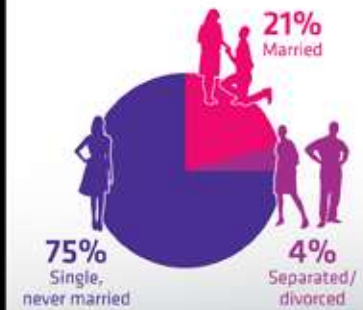


Other names for Millennials:

- Generation Y:** Refers to the generation to succeed Generation X.
- The Echo Boomers** Refers to the fact that many Millennials are children of Baby Boomers.
- The Net Generation** Refers to the internet being a part of their lives that they grew up with and take for granted.
- The Boomerang Generation:** Refers to the tendency for many Millennials to move back in with their parents after going away to college.
- The Peter Pan Generation:** Refers to delaying the rites of passage into adulthood longer than most generations before them.

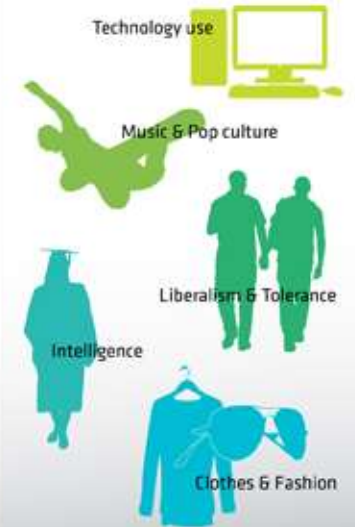
Marital status

(Millennials ages 18-28)



Top 5 things that make Millennials unique:

(according to Millennials)



Educational attainment

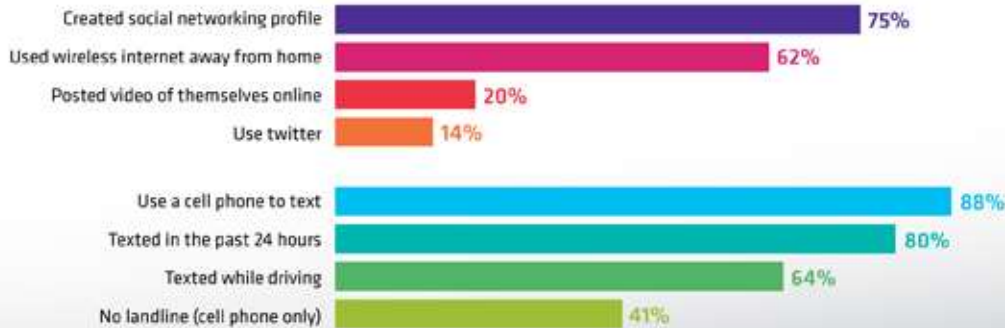
(% of Millennials ages 18-28)



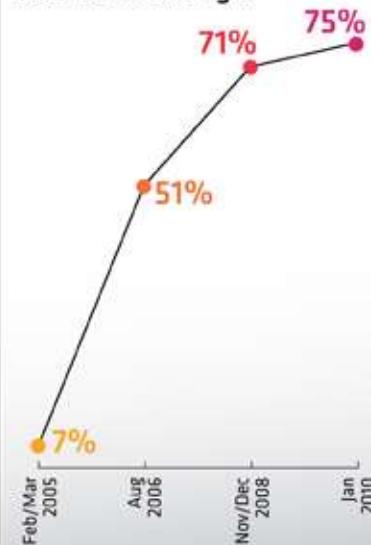
1 Millennials – Who are they?

MILLENNIALS AND TECHNOLOGY

Internet & phone behaviors: percent of Millennials who have...



Social networking sites: how use has changed



How often Millennials visit the social networking site they use most:



Attitudes about technology

New technology makes life...



New technology makes people...



New technology allows people to...



1 Millennials – Who are they?

MILLENNIALS AND NEWS

How Millennials get most of their news:



Television
65%



Internet
59%



Newspaper
24%

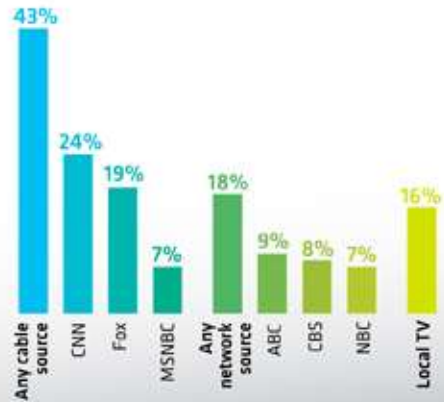


Radio
18%

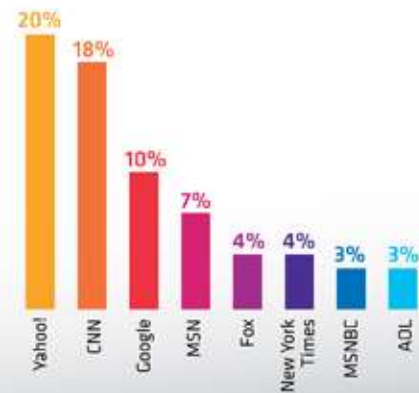


Other
4%

Television source:



Internet source:



Sources: Pew Research | Wikipedia

1 Millennials – Who are they?

Attribute	Implication
Want to ensure they are using their limited time wisely	Engaged discovery-based learning has been proven a better method of learning
Special and entitled	Facilities must be special
Strongly tied to friends and family	Facilities should have areas for students to interact with their friends
Confident, believing that their generation is capable of correcting societal ills	Facilities should reflect social responsibility including sustainability
Team-oriented studying, socializing, and traveling in groups	Learning environment is no longer place-bound. This translates to a need for multipurpose spaces for group activities
Embrace technology and constantly on-line	Integration of technology not only in learning spaces but throughout facility
Drawn to campuses that are full of students much like themselves	Facilities that provide areas for students to see and be seen
Attracted to campuses with a strong sense of tradition and community-building rituals	Campus culture integrated into facility design
Not shy about seeking professional assistance. Regularly seek out faculty for feedback and reassurance	Easy access to faculty
Consider being a nerd cool	Celebrate science on display
Actively seek out tutoring and help with testing skills to excel	Provide multipurpose spaces for collaborative tutoring

2

Discovery-based Learning Attributes

Method of inquiry-based instruction

Learners discover facts and relationships for themselves.

Related Terms

Engaged learning

Problem based learning

Challenge based learning

Active learning

Hands-on learning

Enhanced learning

Adaptive learning



2

Discovery-based Learning Attributes

200%

“...students learned twice as much based on test results as the students in the traditional section...”

Deslauriers, Schelew, and Wieman. (2011).

“Improved learning in a large-enrollment physics class.” Science 332:862-864.”

2

Discovery-based Learning Attributes

68%

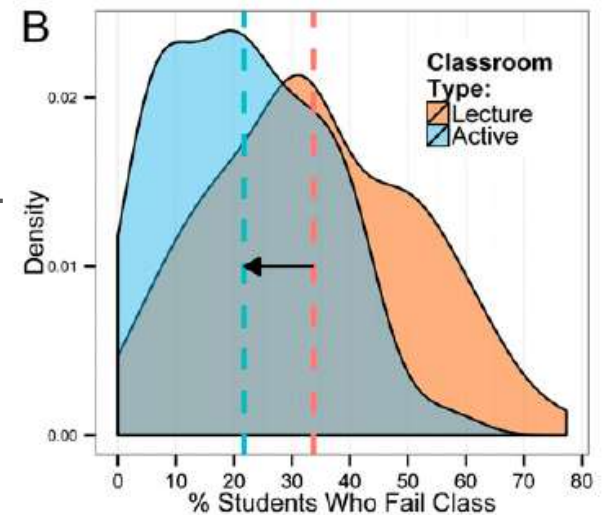
of survey respondents
indicate increased
interest in STEM career as
a result of undergraduate
research opportunities

Science VOL 316 4/27/07 *Benefits of Undergraduate
Research Experiences* - Susan H. Russell, Mary P.
Hancock, James McCullough

2 Discovery-based Learning Attributes

150%

More likely to fail without



Proceedings of the National Academy of Sciences

June 10, 2014 | vol. 111 | no. 23 | 8415

Active learning increases student performance in science, engineering, and mathematics

Scott Freemana, Sarah L. Eddy, Miles McDonougha, Michelle K. Smith, Nnadozie Okoroafora, Hannah Jordta, and Mary Pat Wenderotha ,

3

STEM Facilities for Millennials

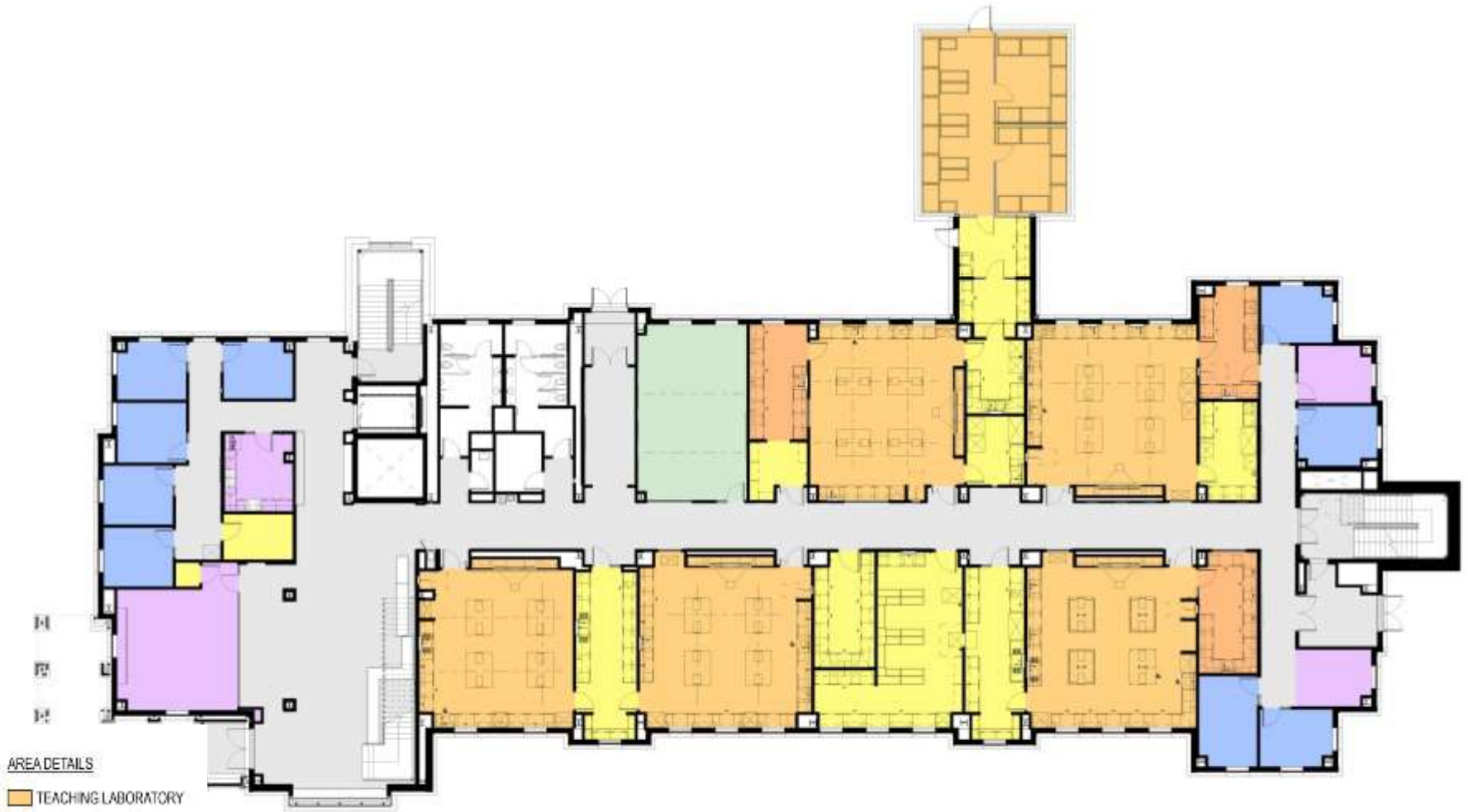
- Engaged learning labs
- Easy access offices
- Visibility
- Collaboration areas
- Historic contextual design

Nazareth College
Math & Science Building



3

STEM Facilities for Millennials



- AREA DETAILS
- TEACHING LABORATORY
 - RESEARCH LABORATORY
 - SUPPORT
 - OFFICES
 - INTERACTION
 - CLASSROOM
 - CIRCULATION

First Floor

Nazareth College
Math & Science Building

3

STEM Facilities for Millennials



- AREA DETAILS
- TEACHING LABORATORY
 - RESEARCH LABORATORY
 - SUPPORT
 - OFFICES
 - INTERACTION
 - CLASSROOM
 - CIRCULATION

Second Floor

Nazareth College
Math & Science Building

3

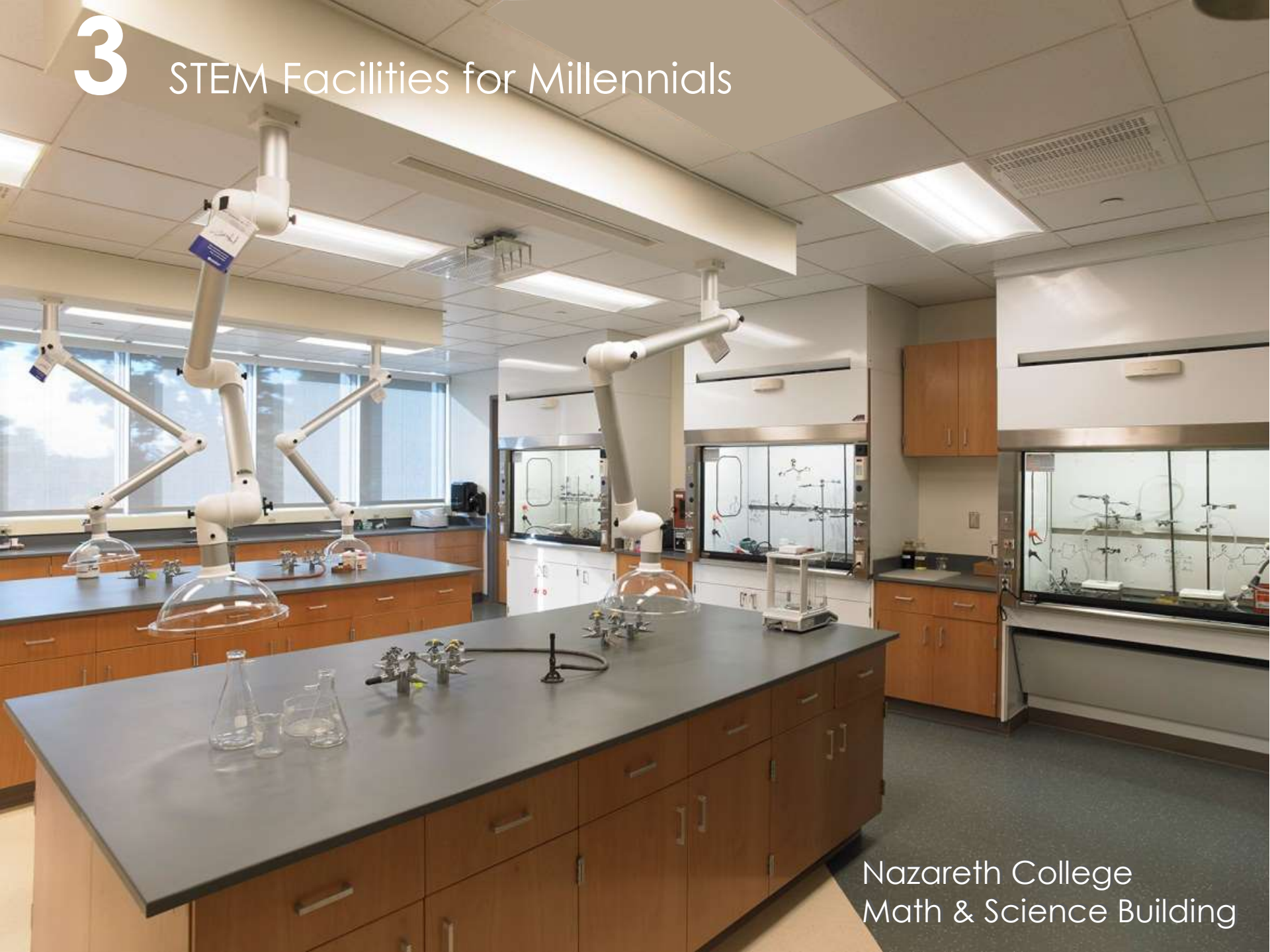
STEM Facilities for Millennials



Nazareth College
Math & Science Building

3

STEM Facilities for Millennials



Nazareth College
Math & Science Building

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STEM Facilities for Millennials



Nazareth College
Math & Science Building

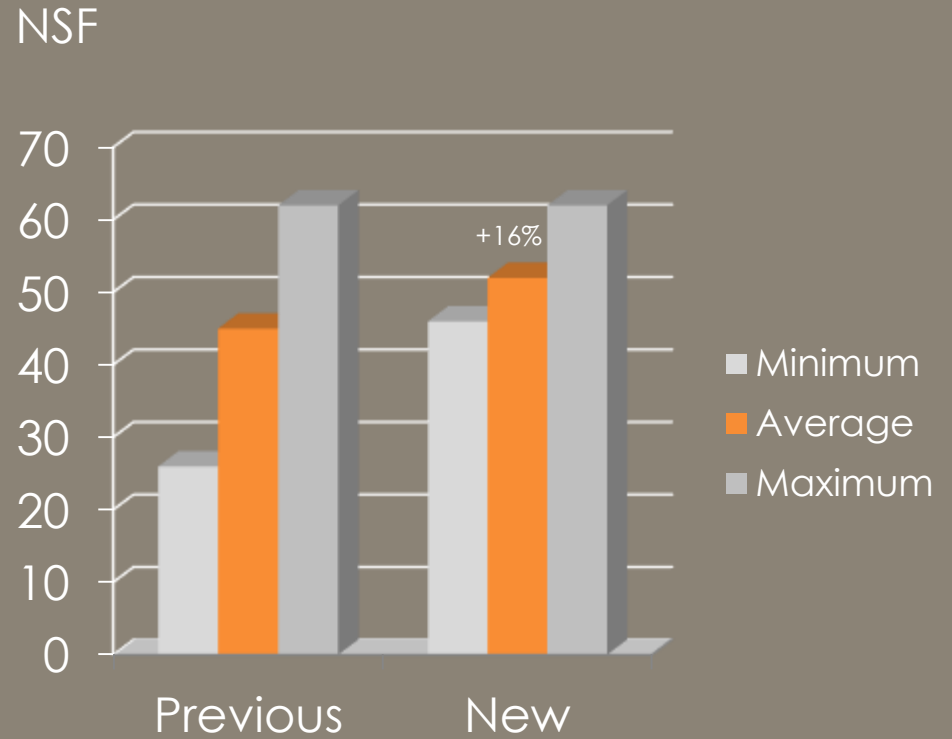
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STEM Facilities for Millennials

Teaching Lab Size-NSF



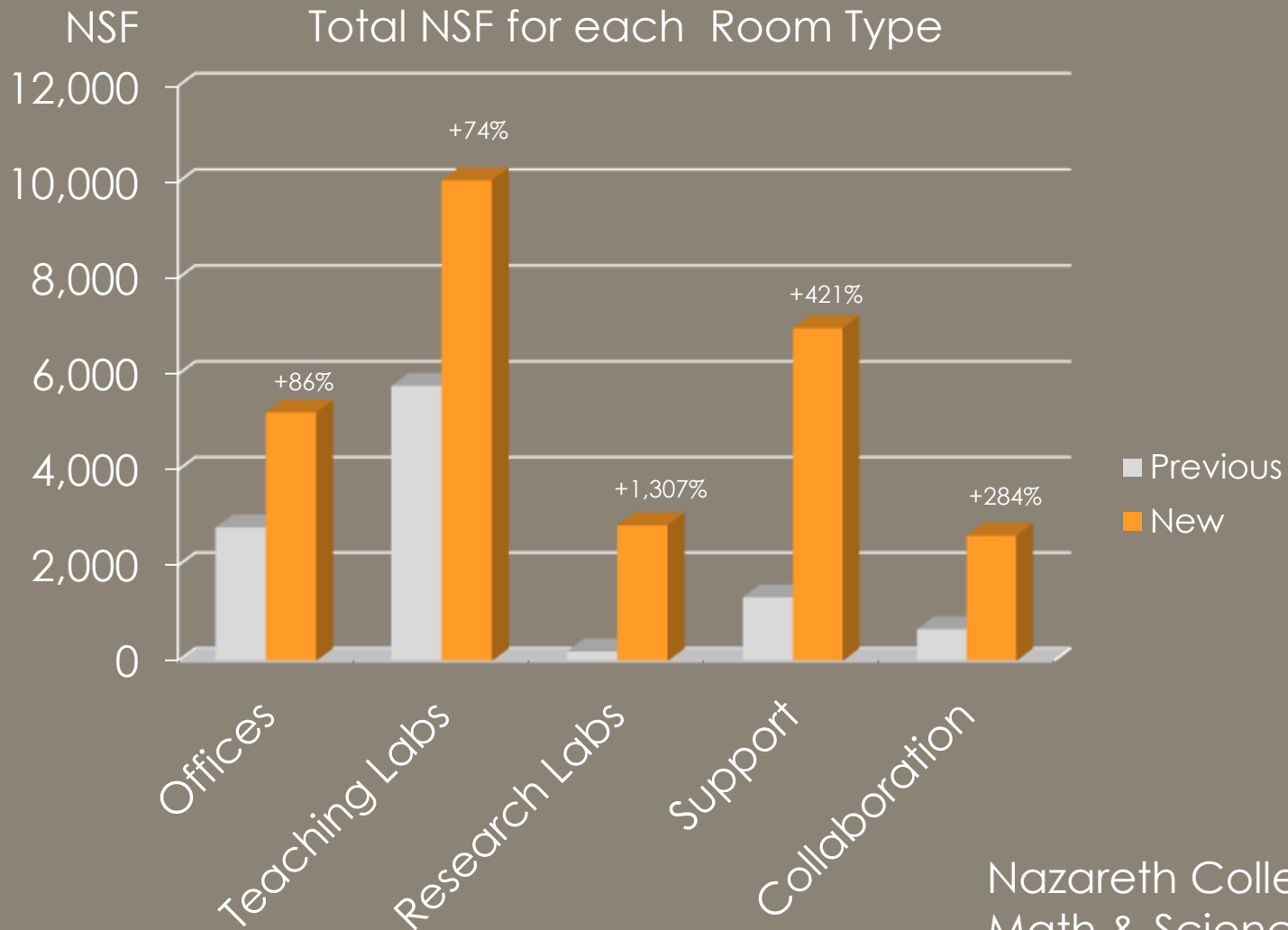
Teaching Lab Size-NSF/P



Nazareth College
Math & Science Building

3

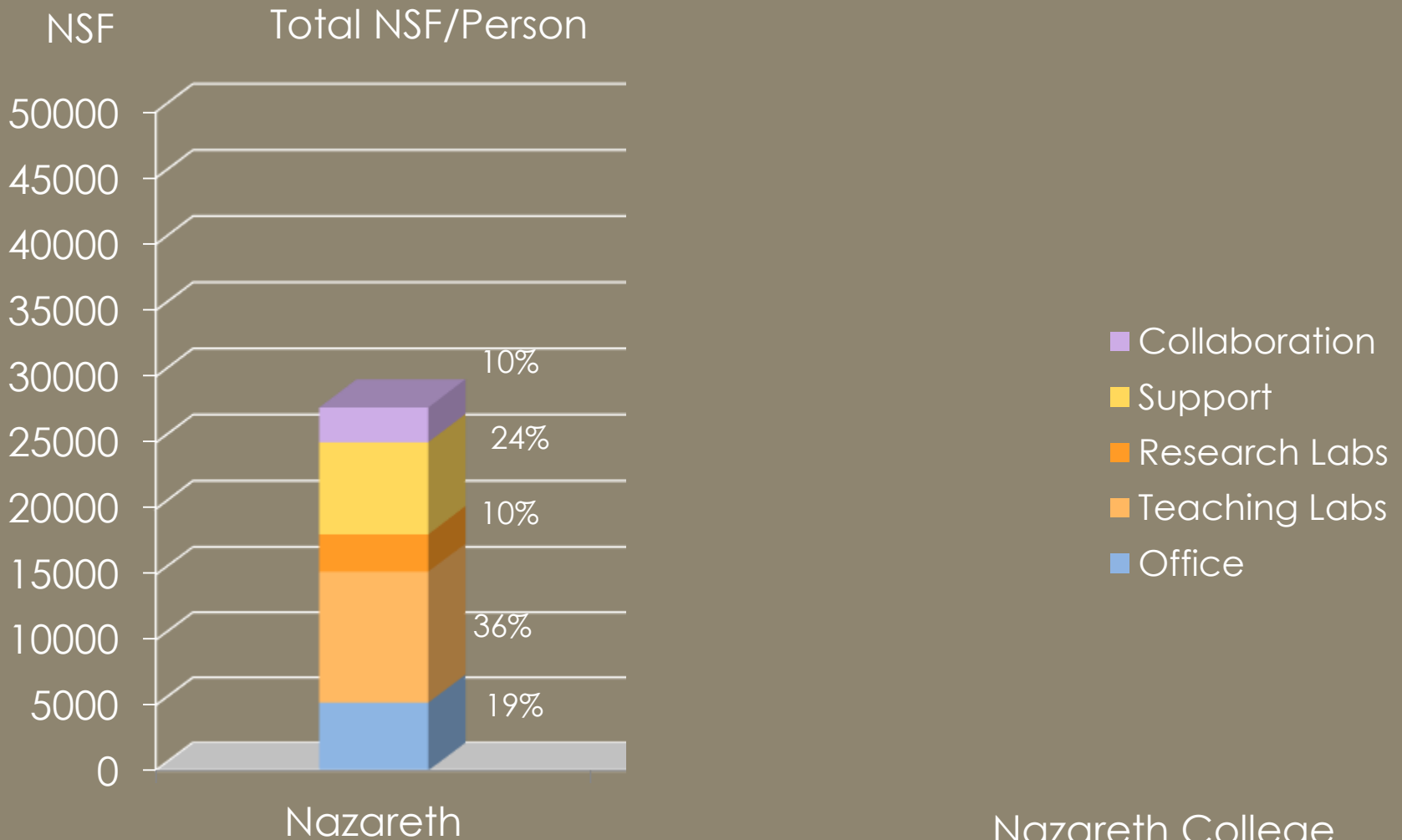
STEM Facilities for Millennials



Nazareth College
Math & Science Building

3

STEM Facilities for Millennials



Nazareth College
Math & Science Building

3

STEM Facilities for Millennials

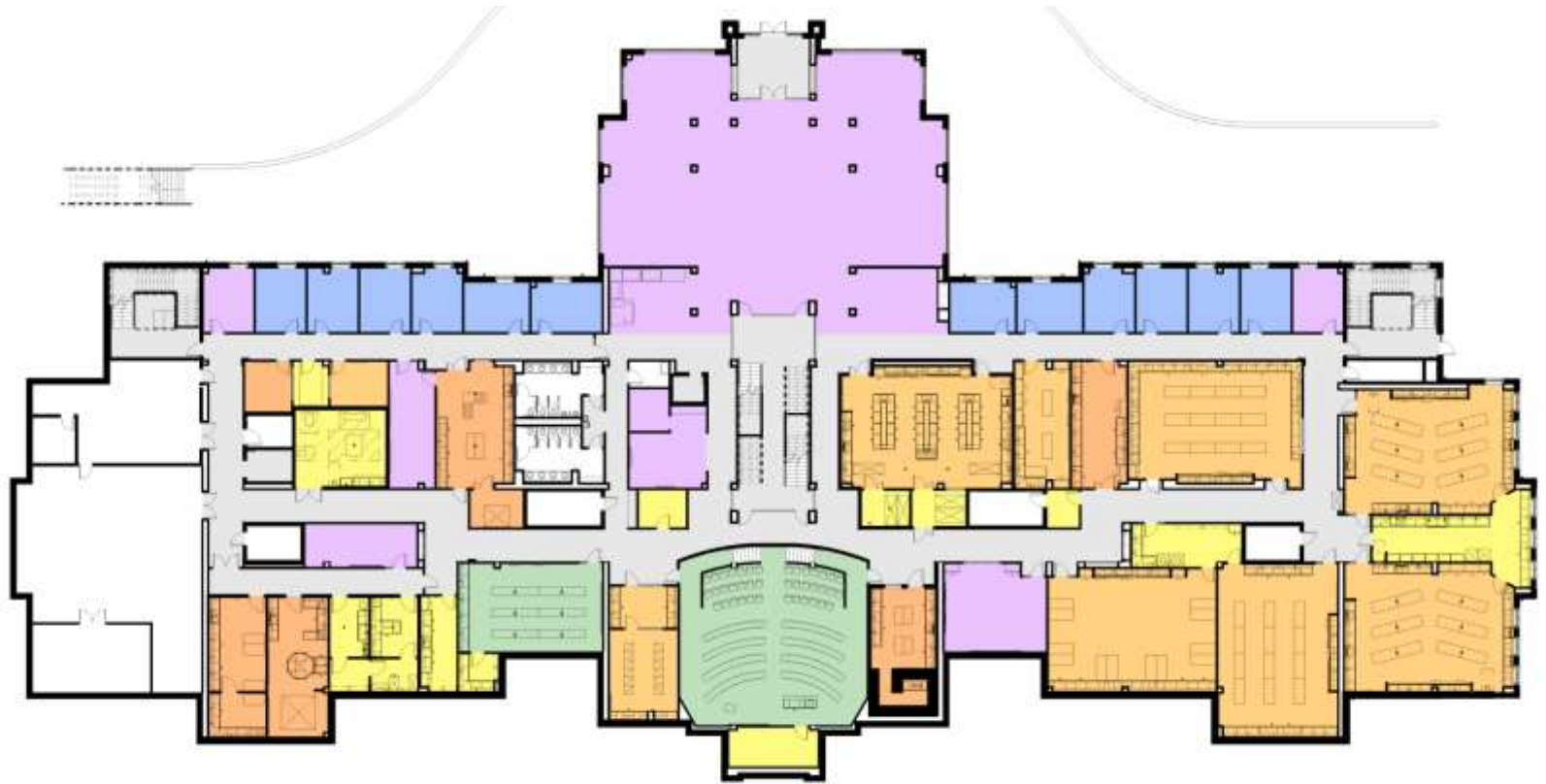
Collaboration areas
Engaged learning labs
Easy access offices
Historic contextual design

Monmouth College
Center for Science & Business
138,000 GSF



3

STEM Facilities for Millennials



- AREA DETAILS**
- TEACHING LABORATORY
 - RESEARCH LABORATORY
 - SUPPORT
 - OFFICES
 - INTERACTION
 - CLASSROOM
 - CIRCULATION

First Floor

Monmouth College
Center for Science & Business

3

STEM Facilities for Millennials



Monmouth College
Center for Science & Business

3

STEM Facilities for Millennials



Monmouth College
Center for Science & Business

3

STEM Facilities for Millennials



Mellinger
Commons

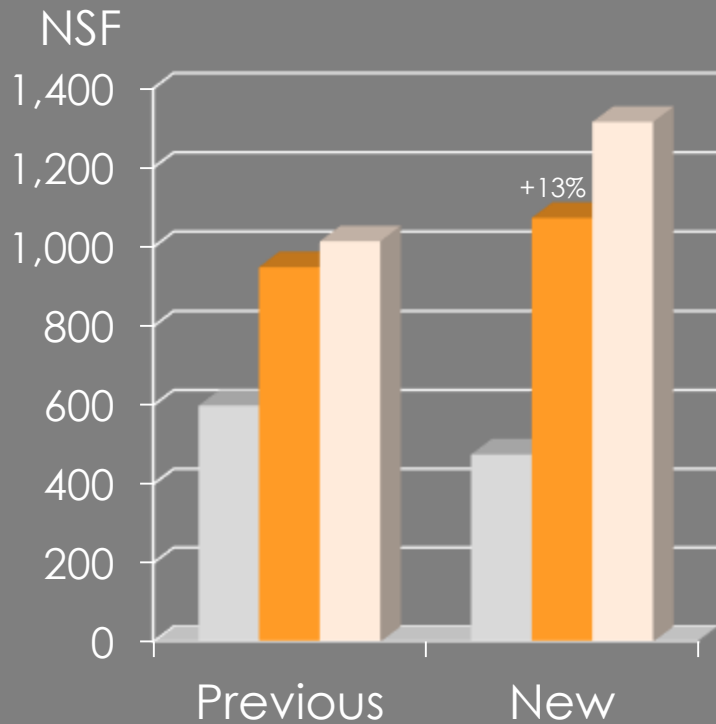
*A Gift from
Edward Arthur Mellinger Foundation*

Monmouth College
Center for Science & Business

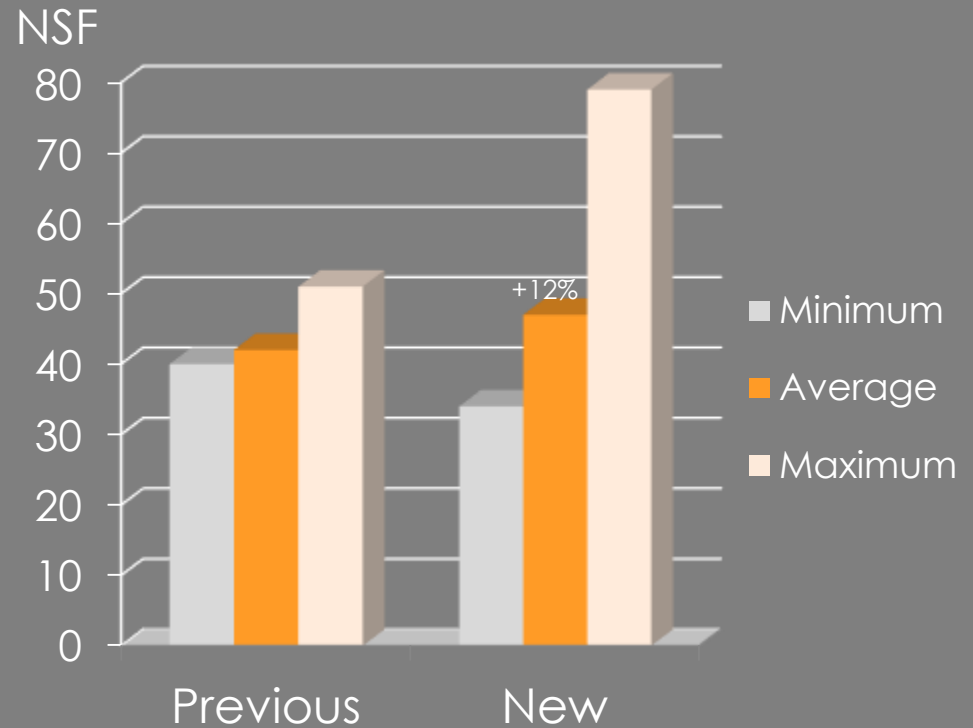
3

STEM Facilities for Millennials

Teaching Lab Size-NSF/Rm



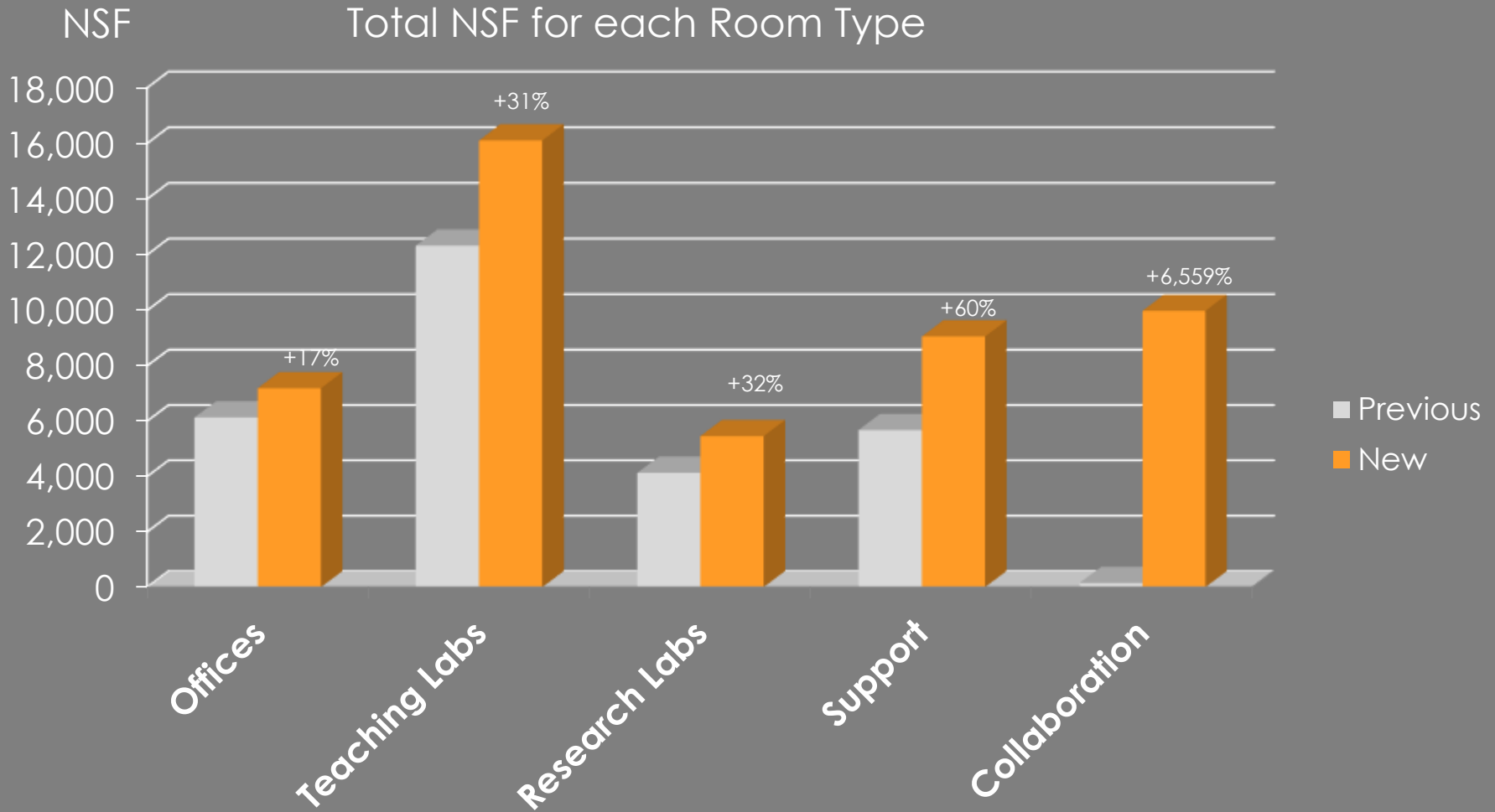
Teaching Lab Size-NSF/P



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Center for Science & Business

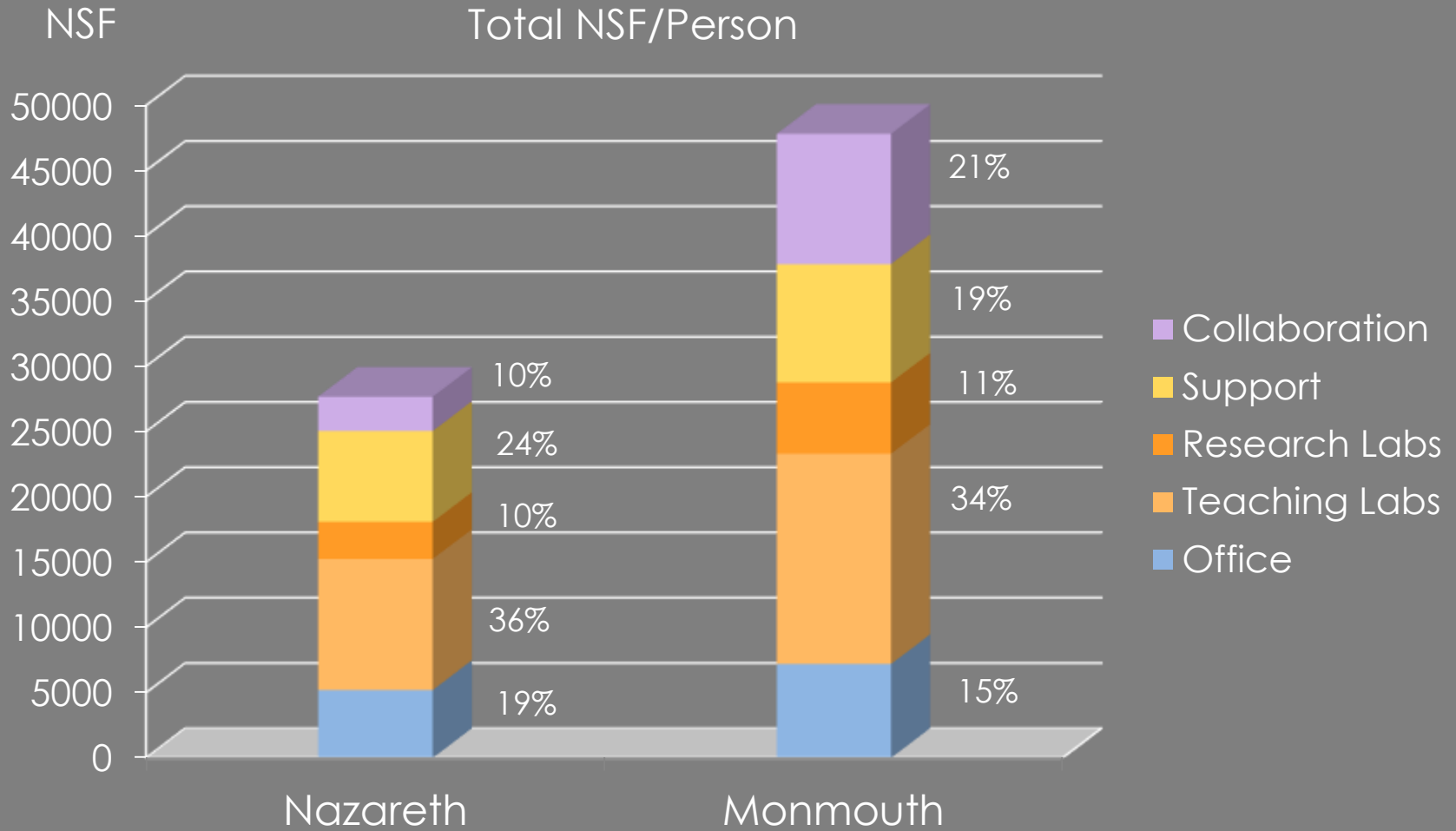
3

STEM Facilities for Millennials



3

STEM Facilities for Millennials



Monmouth College
Center for Science & Business

3

STEM Facilities for Millennials

Visibility

Engaged learning labs

Easy access offices

Collaboration areas

Technology



Carthage College
STEM Renovation/Addition

3

STEM Facilities for Millennials



Carthage College
STEM Renovation/Addition

3

STEM Facilities for Millennials



Carthage College
STEM Renovation/Addition

3

STEM Facilities for Millennials



Carthage College
STEM Renovation/Addition

3

STEM Facilities for Millennials



Carthage College
STEM Renovation/Addition

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STEM Facilities for Millennials



Carthage College
STEM Renovation/Addition

3

STEM Facilities for Millennials



Carthage College
STEM Renovation/Addition

3

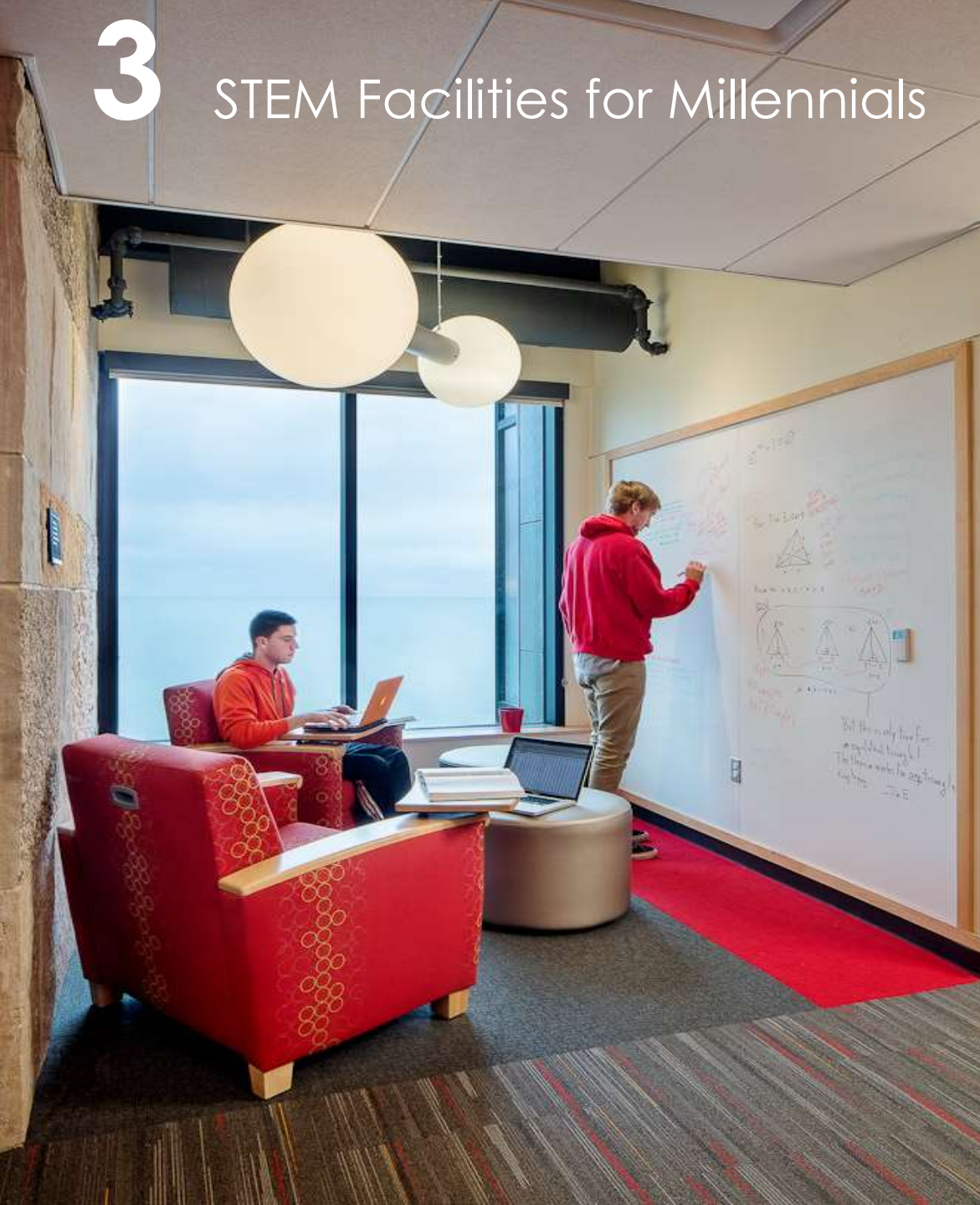
STEM Facilities for Millennials



Carthage College
STEM Renovation/Addition

3

STEM Facilities for Millennials



Carthage College
STEM Renovation/Addition

3 STEM Facilities for Millennials



Carthage College
STEM Renovation/Addition

3

STEM Facilities for Millennials



Carthage College
STEM Renovation/Addition

3

STEM Facilities for Millennials



Carthage College
STEM Renovation/Addition

3

STEM Facilities for Millennials



Carthage College
STEM Renovation/Addition

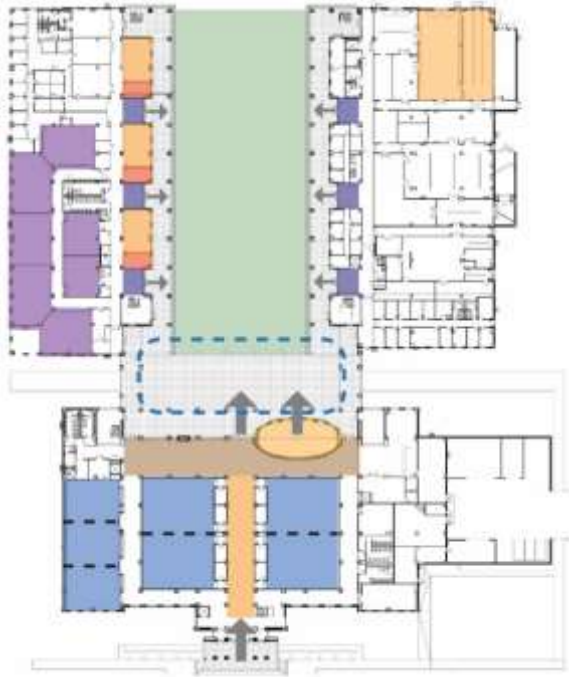
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STEM Facilities for Millennials

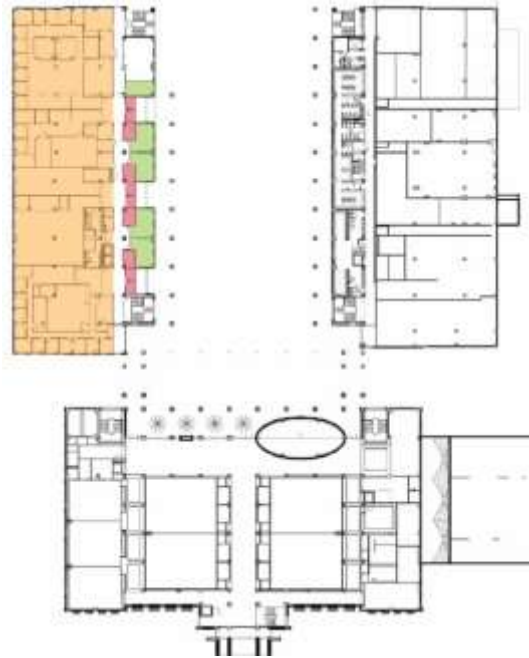


3

STEM Facilities for Millennials



1st floor



2nd floor



3rd floor

TAMU College of Veterinary Medicine
Education Complex

3

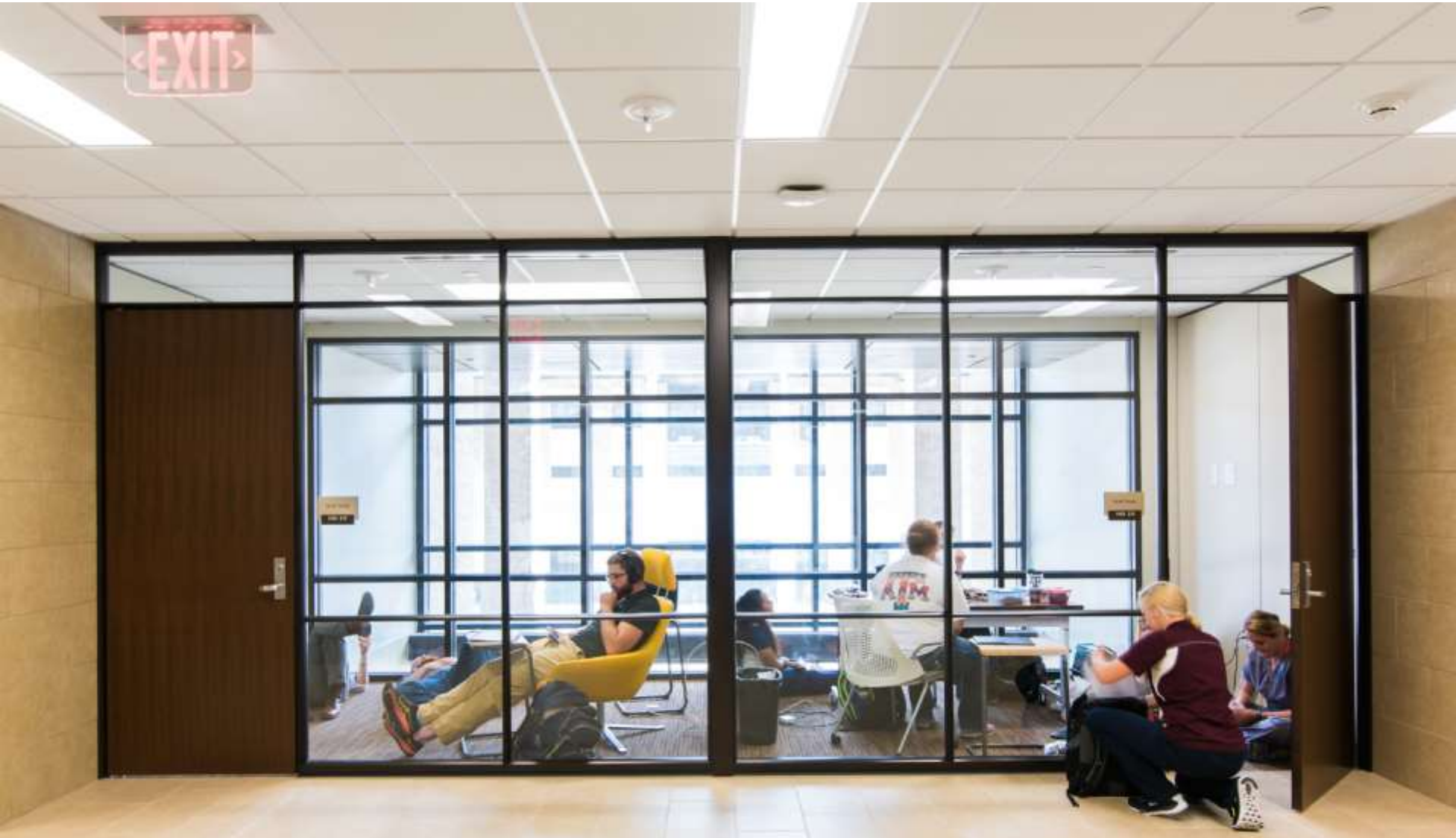
STEM Facilities for Millennials



TAMU College of Veterinary Medicine
Education Complex

3

STEM Facilities for Millennials



TAMU College of Veterinary Medicine
Education Complex

3

STEM Facilities for Millennials



TAMU College of Veterinary Medicine
Education Complex

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STEM Facilities for Millennials



TAMU College of Veterinary Medicine
Education Complex

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STEM Facilities for Millennials



TAMU College of Veterinary Medicine
Education Complex

3

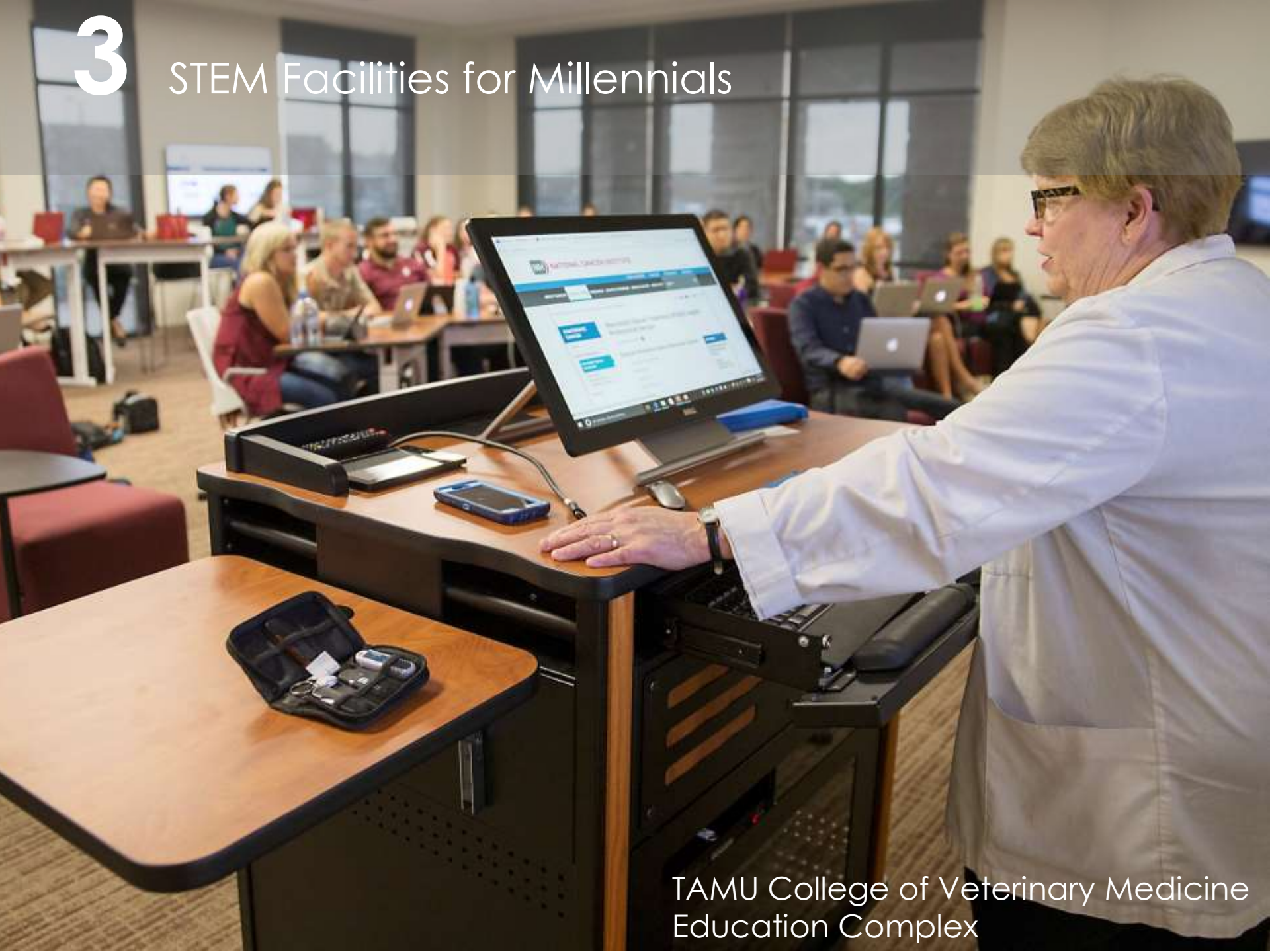
STEM Facilities for Millennials



TAMU College of Veterinary Medicine
Education Complex

3

STEM Facilities for Millennials



TAMU College of Veterinary Medicine
Education Complex

3

STEM Facilities for Millennials



TAMU College of Veterinary Medicine
Education Complex

1 Millennials – Who are they?

2 Discovery-based Learning Attributes

3 STEM Facilities for Millennials

4 Summary



Seminar Evaluation

We hope you enjoyed this session...

Please take a moment to complete the evaluation form.

Thank you!



Millennials – Who are they?

The Future Workforce in 2017

