PRE-DESIGN

WORKSHOP 1
- Kick Off
- Visioning
- Goal Setting
- Program Interviews
- Massing
- Refine Program
- 2 days

WORKSHOP 2
- Review Options
- Program Sign Off
- Site Sign Off
- 1 day

Refine Site Options
Refine Program
Cost Model

PRE-DESIGN WORKSHOP 1

WORKSHOP 2
SCHEMATIC DESIGN

WORKSHOP 3
- Massing
- Planning Scenarios
- Individual Labs
- Planning Scenarios Massing
- 2-3 Days

WORKSHOP 4
- Planning Sign Off
- Program Sign Off
- Refine Plan
- Initial Lab Layouts
- Refine Massing
- Prepare SD Package
- Cost Estimate
- Value Engineering

$
CAPITAL PROJECT REQUEST

1. Provide a **state-of-the-art**, safe spaces for science and technology instruction
2. Allow for better use of existing space to **support research and teaching in STEM areas**
3. Support unanimous **top priority of all colleges**, deans and senior academic leadership at NDSU, the business community and the state of North Dakota by providing excellent educational opportunities in the STEM field of study
4. Provide economic development through quality educational research, training and service
LEADERSHIP COMMENTS

- Legislature may replicate this model if successful
- Flexible building to accommodate a variety of uses
- University resource with focus on STEM education
- Geared to undergraduate STEM instruction
- Long-lived/ durable construction
- Balance “wow” factor with fiscal prudence
- Interdisciplinary

“Incredibly important.”
President Dean Bresciani

“A game changer.”
VP of Finance and Administration Bruce Bollinger
CRITICAL SUCCESS FACTORS

What are the few things NDSU must to do achieve its short term goals (3-5 years)?

- Lab Space
  - New lab space
  - Flexible classroom space
  - Technology
  - Safe lab

- 21st Century Classroom
  - Large, adaptable
  - 3D printing, robotics

- Student-Based Learning
  - Classroom space
  - Teaching labs
  - Teaching efficiency

- High Usage
  - Teaching labs should be efficient
  - Avoid the unused middle rows

- Problem-Based Learning
  - Teaching labs

- Multi-Use Space
  - Flexible classroom space
  - Technology
  - Student-based learning

- Student Engagement
  - Use technology
  - 3D printing

- Student-Centered Learning
  - Problem-based learning
  - Teaching efficiency

- Student Success
  - Classroom space
  - Teaching labs

- Accessibility
  - Wheelchair accessible
  - Handrails

- Technology
  - Classroom space
  - Teaching labs

- Support
  - Classroom space
  - Teaching labs
CRITICAL SUCCESS FACTORS

1. State-of-the-art building with WOW factor to attract and support STEM undergraduate students in an interdisciplinary learning environment.

2. Provide learning environments that maximize a wide variety of teaching/learning styles (problem-based learning, group work, and student driven projects).

3. Provide technology supporting active learning, collaboration and distance education.

4. Provide flexible labs (and lab support areas) and classrooms to accommodate multiple uses, change in equipment and a variety of teaching styles.

5. Provide adaptable spaces and infrastructure accommodating changes in technology, changes in lab equipment, and changes in educational techniques. Accommodate scale up.

6. Maximize collaboration and group work in study rooms, project based rooms, and informal unassigned spaces.

7. Design less flexible spaces to match course function and maximize room usage.

8. Enhance the campus and the surrounding spaces.

9. Secure universal design for all students.
CRITERA FOR BUILDING

- Spaces that are primarily, but not exclusively, for STEM instruction
- Flexible spaces that can be used for a variety of different sciences
- Spaces that must be dedicated (i.e. not flexible) should be highly utilized spaces
- Primarily first and second year / introductory foundation courses
EXISTING CLASSROOM

CLASSROOM COUNT

TOTAL SEATS USED

NORTH DAKOTA STATE UNIVERSITY STEM EDUCATION BUILDING
EXISTING CLASSROOMS

KEY
- CLASSROOM SIZE BETWEEN 300-399
- CLASSROOM SIZE BETWEEN 200-299
- CLASSROOM SIZE BETWEEN 100-199
- CLASSROOM SIZE BETWEEN 50-99
- CLASSROOM SIZE BETWEEN 16-49

NOTE: NDSU DOWNTOWN CAMPUS IS NOT SHOWN:

BARRY HALL

RENAISSANCE HALL

NORTH DAKOTA STATE UNIVERSITY STEM EDUCATION BUILDING
EXISTING CLASSROOMS

KEY

- CLASSROOM SIZE BETWEEN 300-399
- CLASSROOM SIZE BETWEEN 200-299
- CLASSROOM SIZE BETWEEN 100-199
- CLASSROOM SIZE BETWEEN 50-99
- CLASSROOM SIZE BETWEEN 16-49

NOTE: NDSU DOWNTOWN CAMPUS IS NOT SHOWN:

- BARRY HALL
- RENAISSANCE HALL
EXISTING CLASSROOMS

KEY
- CLASSROOM SIZE BETWEEN 300-399
- CLASSROOM SIZE BETWEEN 200-299
- CLASSROOM SIZE BETWEEN 100-199
- CLASSROOM SIZE BETWEEN 50-99
- CLASSROOM SIZE BETWEEN 16-49

NOTE: NDSU DOWNTOWN CAMPUS IS NOT SHOWN:

BARRY HALL

RENAISSANCE HALL
EXISTING CLASSROOMS

KEY
- CLASSROOM SIZE BETWEEN 300-399
- CLASSROOM SIZE BETWEEN 200-299
- CLASSROOM SIZE BETWEEN 100-199
- CLASSROOM SIZE BETWEEN 50-99
- CLASSROOM SIZE BETWEEN 16-49

NOTE: NDSU DOWNTOWN CAMPUS IS NOT SHOWN:

- BARRY HALL
- RENAISSANCE HALL
EXISTING CLASSROOMS

KEY
- CLASSROOM SIZE BETWEEN 300-399
- CLASSROOM SIZE BETWEEN 200-299
- CLASSROOM SIZE BETWEEN 100-199
- CLASSROOM SIZE BETWEEN 50-99
- CLASSROOM SIZE BETWEEN 16-49

NOTE: NDSU DOWNTOWN CAMPUS IS NOT SHOWN:

BARRY HALL

RENAISSANCE HALL