



## **WGEESIT PROGRAMMATIC IMPLEMENTATION**

### **Proposed Mechanism for Tier-1 Implementation Plan**

College of Engineering  
& Applied Science

October 23, 2013

## Mechanism for Tier-1 Implementation Plan

### Introduction

Governor Mead and the State legislators have articulated a vision to propel the College of Engineering & Applied Science (CEAS) and the University of Wyoming (UW) to the realms of excellence in instruction, research, and service. President Sternberg, the University leadership, and faculty are committed to this vision; and equally important, our industry partners have embraced this vision and will help actualize it. Working together, we will have world-class facilities and the required resources to excel in critical elements our land-grant mission.

We have an unprecedented opportunity to build a premier college populated with educators, researchers, and practitioners who are focused on educating and mentoring our students at the highest of levels, advancing science and engineering, and catalyzing the economic development of Wyoming and beyond.

*As asserted in the Governor's letter of August 23, 2013, it is time to execute the Tier-1 vision and turn it into reality. It is time to achieve full internal and external integration of UW operations, where seamless programmatic and asset integration is accompanied by lasting and productive partnerships with the state and national agencies as well as industry.*

Herein, the implementation mechanism for the Tier-1 Engineering Initiative is outlined and time line for completing key tasks is provided.

### The Move Forward

On May 21, 2013, the University of Wyoming issued an Engineering Initiative (EI) Report to the Governor's Task Force that articulated a compelling vision for the future of the College of Engineering & Applied Science at the University of Wyoming. The report outlined the strategy to advance UW's engineering school to national prominence. Specifically, a number of recommendations and goals were formulated to move CEAS and UW toward Tier-1 productivity and excellence.

On the recent meeting of the Task Force on September 23, 2013, it was decided that:

1. An implementation plan for Tier-1 Engineering Initiative should be developed by the stakeholders.
2. A University-level Program Coordinator will be hired to coordinate efforts among colleges, schools, external constituencies including industry, and state agencies, and facilitate the success of the Engineering Initiative.

3. Until such time that a Project Coordinator is hired, an Implementation Team (IT) comprised of the Provost, Interim Dean of Engineering, Director of the School of Energy Resources, and President of UW Foundation will assume his responsibilities.
4. Tier-1 Program Funding should be sought for FY2015 and FY 2016. Funding for the Engineering Complex will follow the projected timeline established earlier.

### **Process for Tier-1 Implementation Plan**

1. Develop the planning guidelines or principles for the implementation plan. This may include guidelines for:
  - a. Integration
  - b. Undergraduate Education
  - c. Graduate Education
  - d. STEM Education
  - e. Niche Areas and Research Initiatives
  - f. Economic Development
  - g. Marketing
  - h. Fund Raising
  - i. Capital Facilities

Specific examples are given in the Section A.

2. Assemble data on current Tier-1 related college operations and establish the baseline.
3. Develop a planning mechanism that involves all stakeholders, including the CEAS leadership, representatives of the faculty, staff, students, CEAS National Advisory Board, School of Energy Resources, College of Arts & Sciences, Energy Research Council, and other industry partners.
4. Develop the initial draft of the Tier-1 Implementation Plan by January 15, 2014.

Here, we need an operational plan that specifies who will do what, when, where, how, and at what cost as well as the project impacts and associated metrics.
5. Seek feedback and guidance from the Task Force and revise accordingly.

### **Elements of the Mechanism**

1. Form the Engineering Initiative Working Group (EIWG). The group will be composed of the following stakeholders: the CEAS leadership, representatives of the faculty, staff, students, CEAS National Advisory Board, School of Energy Resources, College of Arts &

Sciences, Energy Research Council, and other industry partners. The working group will be responsible for preparing the Implementation Plan in collaboration with the Implementation Team and the Task Force.

2. Conduct initial analysis at the department (unit) level, including:
  - a. Review current college operations, resources and outcomes and outline the performance profile of each unit.
  - b. Identify strengths, weakness, opportunities and threats of each unit.
  - c. Review CEAS input to Task Force.
  - d. Review the Task Force Report and describe how we actualize the conceptual framework. Input should address plans for advancing:
    - i. Integration
    - ii. Undergraduate Education
    - iii. Graduate Education
    - iv. STEM Education
    - v. Research initiatives
    - vi. Economic Development
    - vii. Capital Facilities
3. Identify potential areas of integration and growth within the selected niche areas, as prescribed in Sections A. Also, identify other areas of research that build on our existing capabilities. Here, coordinating efforts with colleagues across campus is essential.
4. Conduct a thorough analysis of all input received from all stakeholders.
5. Synthesize a working plan that actualizes the goals of the Task Force and incorporates the CEAS, NAB, SER, and ERC inputs and priorities.
6. Prepare initial draft of the Implementation Plan.

A common file share was created to provide participants with access to all documents and data pertaining to this planning exercise.

### **Implementation Plan Timeline**

Table 1 presents a proposed timeline for the implementation plan. Likely, adjustments will be made as work progresses.

**Table 1. Timeline for Developing Implementation Plan**

	<b>Task</b>	<b>Target Date for Completion</b>	<b>Status</b>	<b>Comments</b>
1	Form the Engineering Initiative Working Group (EIWG). The group will be composed of the CEAS leadership team, Chair of the NAB, representatives from SER, ERC, undergraduate students (Joint Engineering Council), graduate students, and staff.	10/15/2013	done	
2	Prepare budget request for programmatic funding in FY2015 and FY2106	10/18/2013	done	
3	Conduct initial analysis at the department (unit) level, including:	10/31/2013		
a	Review current college operations, resources and outcomes and outline the performance profile of each unit			
b	Identify strengths, weakness, opportunities and threats of each unit.			
c	Review CEAS input to the Task Force			
d	Review the Engineering Initiative Report and provide input on how we actualize this conceptual framework			
4	Identify potential areas of integration and growth within the selected niche areas. Also, identify other areas of research that build on our existing capabilities. Here, coordinating efforts with colleagues across campus is essential.	11/21/2013		See Integration & Niche Area Guidelines
5	Conduct a thorough analysis of all input received from all stakeholders.	11/21/2013		
6	Synthesize a working plan that actualizes the goals of the Task Force and incorporates the CEAS, NAB, SER, and ERC inputs and priorities.	12/15/2013		
7	Prepare initial draft of the Implementation Plan	12/20/2013		

**EIWG will coordinate with the Implementation Team and iterate on the plan development.**

## **Coordination and Reporting**

EIWG will coordinate with the Implementation Team and iterate on the plan development. Further, regular reports will be issued to the Task Force and the UW community. Following is the proposed reporting scheme:

1. CEAS Leadership Team (CLT) meets once a week and issues a progress report to the Engineering Initiative Working Group (EIWG).
2. EIWG meets every three weeks and issues a progress report to the Implementation Team (IT).
3. IT meets every three weeks and issues a progress report to President Sternberg and the co-chairs of the Task Force.
4. A communication will be released to the UW community once a month.

## A. Planning Guidelines

### **Example 1: Integration**

The purpose of integration is to develop a researchers and practitioners, where the entire UW campus is a theater of research, discovery, and productive collaboration with industry, State, and federal agencies. To achieve this purpose, we need to:

1. Seek collaborative, cross-disciplinary research focused on solving significant problems and catalyzing the economic development of Wyoming, the nation, and beyond.
2. Realize that significant discoveries are a result of problem-focused research that occurs at the interface of many disciplines.
3. Appreciate that productive academe-industry partnerships produce a definite technical advantage for industry and relevance for scholarship.
4. Provide unfettered access for all contributing faculty to all research facilities.
5. Avoid duplication in facility planning and create quality spaces for interactions.

## **Example 2: Niche Areas**

Five niche areas have been identified:

1. Unconventional Reservoirs
2. Advanced Energy Technologies and Energy Conversion and Delivery
3. Computational Science and Engineering
4. Water Resources
5. Biological and Biomedical Engineering

Many research projects may evolve within the selected niche areas; nevertheless, with compelling reasoning, we may:

- Offer an alternative
- Modify an existing niche area
- Add a new area of research focus

To add a new research area, it would be to propose a collaborative research cluster that:

1. Involves a multidisciplinary team of faculty and researchers
2. Addresses a relevant area of research that aligns with State or national initiatives
3. Mentors students and produces world-class scholarship
4. Has the potential of attracting funding and building industry-university partnerships
5. Will be self-sustaining funding-wise in three-five years
6. Catalyzes the economic growth of the State of Wyoming and beyond

Successful research clusters eventually evolve into self-sustaining research centers, thus becoming recognized niche areas within UW.

### **Example 3: Hiring and Mentoring of New Faculty Members**

We will hire faculty members, who:

1. Are committed to the land-grant mission in all dimensionalities
2. Are technically competent in a strategic area(s) of research
3. Are creative and motivated
4. Have strong communication skills and a good potential for attracting significant funding
5. Value undergraduate studies and have the potential of becoming excellent teachers
6. Are willing to engage in collaborative research and teaching

Once hired, a faculty member will be viewed as our academic partner for life. Thus, our commitment to his/her success is unwavering. This commitment entails significant amount of mentoring, including:

1. Sharing instructional materials and teaching experiences
2. Exposing faculty member to best practices in teaching, graduate mentoring, and grantsmanship
3. Helping faculty member network with funding sources
4. Involving faculty member in collaborative projects
5. Engaging faculty member into the profession
6. Reviewing faculty member's proposals and manuscripts
7. Sensitizing faculty member to the required balance when striving for a quality life