

# **An Engine of Innovation**

## **College of Engineering Strategic Plan**

### **Preamble**

For over 100 years the College of Engineering at the University of Idaho has been providing exceptional learning and research opportunities for students from Idaho and around the world. The college is composed of six departments that offer eight accredited undergraduate degree programs, and twelve graduate degrees at the master's and Ph.D. levels. Undergraduate and graduate degrees are offered in Biological and Agricultural Engineering, Civil Engineering, Chemical Engineering, Computer Science, Electrical Engineering, Computer Engineering, Materials Science Engineering, and Mechanical Engineering. Additional graduate degrees are offered in Nuclear Engineering, Geological Engineering, Environmental Engineering, and Engineering Management. The college has over 100 dedicated faculty and staff that are located state-wide on campuses in Idaho Falls, Post Falls, Boise, and on the main campus in Moscow.

### **Mission**

Our mission is to prepare students for global professional practice, for admission to advanced degree programs, for leadership in their public and private lives, and for life-long learning in their chosen professions. We promote discovery, development, and dissemination of knowledge through excellence in research, and provide quality academic courses and continuing education to enhance the capability of practicing professionals. Through our scholarly activity, we have the responsibility to be a major contributor to our state, region, and nation's economic and technology base, while contributing to the body of knowledge for an array of research topics.

### **Vision: Create, Integrate, Advance**

Be an engine of innovation that integrates student-centered academics, relevant research, and meaningful outreach that advances Idaho and beyond.

#### ***Create an Engine of Innovation***

Our students are capable of applying engineering science and the most current engineering tools in creating sustainable solutions for the economic benefit of the state, nation, and world. As a college we, “*walk the talk*” by being a model for leveraging state resources to economically and sustainably support our activities. We are committed to transferring our knowledge developed in the course of education and research to society.

#### ***Integrate academics, research, and outreach***

We are committed to having our academic, research, and outreach programs function seamlessly. Our academic programs are student-centered, and we encourage undergraduates to work with graduate students who are mentored by top-tier faculty and staff members in the design and development of real-world products. We also engage in basic and applied research that is relevant to the needs of society and the dissemination of results. We serve the profession as the “*go to partner*” for life-long learning, providing quality graduate courses, continuing professional education, and other assistance in person or through distance technologies.

#### ***Advance Idaho and beyond***

Because of our commitment to excellence, our graduates are aggressively recruited by industry, graduate programs, national labs, and by employers who operate locally, around the nation, and throughout the world. Why? Faculty believe it is because our students are strong in the fundamentals, our alumni tell us it is because our graduates learn to think for themselves, and repeat employers say our graduates have a strong work ethic and work effectively in teams. The College of Engineering is an “*Engine of Innovation*.”

# Goals and Objectives

## Goal 1: Teaching and Learning

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### *Objectives*

- A. Develop curriculum that is engaging and relevant, preparing students for professional practice and life-long learning.
  - 1. Implement an integrated engineering curriculum in the undergraduate years.
  - 2. Implement a college-wide, multidisciplinary, and vertically integrated design experience.
  - 3. Expand innovative, sustainable, and responsive delivery methods.
  - 4. Develop professional master's degree programs.
- B. Promote a culture of innovation, learning, and continuous improvement.

### *Strategies*

- 1. Expand teams of instructors, staff, and students to oversee quality in specific subject areas.
  - 2. Maintain accreditation in all undergraduate degree programs.
  - 3. Focus on continuous improvement as the goal of students, staff, and faculty assessment.
- C. Integrate the academic, research, and outreach experiences.

### *Strategies*

- 1. Provide regular opportunities for students to constructively interact with practicing professionals.
- 2. Develop coursework and collaborative engineering research and design projects to serve as bridge mechanisms that lead undergraduates into graduate programs or professional practice.
- 3. Develop a scholarship policy that promotes integrated academic, research, and outreach aspirations of the college.

## Goal 2: Research

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### *Objectives*

- A. Support strong research areas of focus that are relevant to emerging needs of society, innovative, and interdisciplinary.

### *Strategies*

- 1. Develop a process to identify emerging areas of focus, support them, and evaluate their performance for continuing support or closure.
  - 2. Secure funding to seed new initiatives & faculty support.
  - 3. Encourage interdisciplinary research collaboration within the college and with outside partners.
- B. Develop and implement a model to support research and innovation.

### *Strategies*

- 1. Build a business plan for research that is transparent, based on outcomes, that provides for staff, equipment, proposal development, financial sustainability, and a supportive organizational structure.

2. Maintain a research council within the college to support research activities and promote college-wide initiatives.
  3. Update, maintain, and provide access to facilities & equipment that support research.
- C. Disseminate results of research to attract quality graduate students increase research funding advance Idaho and beyond.

*Strategies*

1. Promote publication in scholarly journals and/or conferences and other peer review venues.
2. Use emerging communication technology to leverage research results.
3. Promote participation by faculty and students in professional societies.

### **Goal 3: Outreach**

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#### ***Objectives***

- A. Transfer knowledge to the public and private sectors to promote economic development in Idaho and beyond.

*Strategies*

1. Publicly communicate the value and impact of engineering & computer science activities to benefit society.
2. Facilitate the transfer of technology, knowledge, and faculty expertise to enhance economic development and social benefit.
3. Coordinate with the university effort to promote STEM to K-12 students.
4. Develop innovative partnerships to respond to the needs of public agencies, start-up companies, and small businesses and large companies.

- B. Become the continuing education provider of choice in selected areas.

*Strategies*

1. Leverage Engineering Outreach by supporting graduate programs, certificate opportunities, and continuing education experiences.
2. Develop relevant courses & educational experiences where we can be successful and disseminate using forward-thinking innovative technology.
3. Develop a program to help industry meet their professional educational needs and help professional engineers meet professional development requirements.

- C. Enhance the reputation of the COE as a global leader of innovation and service.

*Strategies*

1. Create an environment and incentives that reward students, staff, and faculty participating in service learning projects & outreach efforts.
2. Promote leadership roles for faculty, students, and staff in national policy, programs, and professional organizations.
3. Reward students, faculty, and staff for participating in service-learning projects and outreach efforts.
4. Establish a group to pursue national recognition and rewards for faculty, staff, and students.

## **Goal 4: Organization, Culture, and Climate**

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### ***Objectives***

- A. Create a sustainable business model for the financial health of the organization, including advancement, enrollment, and research.

#### *Strategies*

1. Develop a transparent resource allocation model that rewards productivity, performance, and contributes to the greater good of the college.
2. Set college and departmental targets for student enrollment, research productivity, advancement, etc. with a mechanism for updating them.

- B. Strengthen relationships with alumni and friends of the college.

#### *Strategies*

1. Effectively utilize advisory boards in support of the college.
2. Enhance communication practices to promote an identifying brand of the COE.
3. Develop recognition opportunities for alumni and friends of the college (the Engineering Hall of Fame, honorary degrees, etc.).
4. Identify and engage new alumni and friends of the college.

- C. Promote a culture that is supportive of all engineering students.

#### *Strategies*

1. Establish a center for student services to serve the needs of all current & prospective students.
2. Develop relationships with community colleges to support transfer students before and after transfer.
3. Actively recruit and retain underrepresented groups and promote professional societies (Society of Women Engineers, National Society of Black Engineers, Society for Hispanic Professional Engineers, etc.) that focus on them.
4. Strengthen graduate student communities.

- D. Promote a climate of support and respect within the college.

#### *Strategies*

1. Increase communication and social interaction within the college.
2. Promote mutual respect for all faculty, staff, and students and address non-collegial behavior promptly.
3. Develop a system of reward and accountability for a healthy culture & climate.