



Eastern Oregon University

2007-2009

Campus Goal Setting

March 20, 2006

Mission Statement

★ Vision/Mission (for ETIC):

- ★ Focus EOU's Science, Math and Technology on providing an intellectually challenging and personalized program of instruction, research, and public service.
- ★ Enhancing the regional network of pre-college outreach to increase CS/MM and related enrollments.
- ★ Continue a specialized focus for EOU's core programs supported with ETIC funding.

★ Aspirational Peers:

- Portland State University.
- Oregon Institute of Technology.
- *One other instance still to be located; a small institution with a program in robotics.*

Desired Outcomes in 2020

- ☀ 165% Increase in BS Degrees* (5% per year)
- ☀ Begin awarding MS Degrees*
- ☀ N/A% Increase in PhD Degrees*
- ☀ 165% Increase in externally funded research* (5% per year)
- ☀ N/A% Increase in patent disclosures*
- ☀ N/A% Increase in license revenue*
- ☀ N/A% Increase in spin offs*
- ☀ N/A - National Ranking (college, department, or program)
- ☀ Other desired outcomes
 - Increase involvement of robotics and AI into CS Curriculum
 - Develop a regional center of excellence centered on renewable resources, rural policy, and the sciences.
 - Regional partnership
 - Biomass, solar, hydroelectric, wind power
 - Provides technical expertise, capabilities, and solutions suitable for implementation in rural, smaller population settings.

Inputs required during 2007-2009 Biennium

- \$2.95M State investments:
 - \$.3M core program support (70% existing faculty, 10% new faculty, 20% equipment)
 - \$.3M Pre-college/college credit while in high school/Community college transfer program
 - \$.3M Smart classroom (also supports weekend college)
 - \$.3M Weekend college (multiple locations statewide)
 - \$.75M Biotech equipment
 - \$1M Renewable resources center of excellence startup (Partner with OUS campus and potentially partner with PNNL?)
- \$.89M in private support
- N/A top graduate students
- Others
 - At a minimum, EOU needs to receive a continuation of the current biennial support.

Early Indicators

(in addition to progress on outcome measures)

- ★ 6 faculty hired*
 - 1-2 CS tenure-track faculty
 - 1.5 Pre-college
 - 1.5 Weekend college
 - 2 Biotech and Center of excellence
- ★ 8,690 undergraduate student credit hours*
 - 5,854 SCH – core program (5% annual growth)
 - 1,418 SCH - Pre-college (15 FTE generated first year, 10% growth)
 - 1,418 SCH - Weekend college (15 FTE first year, 10% growth)
 - N/A graduate student credit hours*
- ★ Improvements* to labs: Double CS/MM laboratory capacity.
- ★ Other early indicators*: Formalize a partnership for the Center of Excellence.

* During 2007-2009 Biennium



OGI School of Science & Engineering / OHSU

2007-2009
Campus Goal Setting

March 20, 2006

Mission Statement

★ Vision/Mission: OGI /OHSU

“To provide superb graduate education and research in biomedical engineering and computer sciences, grounded in engineering fundamentals, with a primary focus on applications to human health”

★ Aspirational Peers

- ★ Johns Hopkins University (Biomedical Engr.)
- ★ Stanford University (Biomedical Computation)
- ★ University of Washington (Biomedical Engr.)

Desired Outcomes in 2020

- ☀ NA % Increase in BS Degrees^{*+}
- ☀ 400% Increase in MS Degrees^{**}
- ☀ 400% Increase in PhD Degrees^{*}
- ☀ 500% Increase in externally funded research^{**}
- ☀ 500% Increase in patent disclosures^{**}
- ☀ 100% Increase in license revenue^{**}
- ☀ 200% Increase in spin offs^{**}
- ☀ 20 National Ranking of biomedical programs
- ☀ Other desired outcomes
 - Being an IP generator that drives new business creation
 - 40 full-time faculty

+ these numbers are based on currently existing OGI programs in biomedical and computer science engineering as they existed in 2005

* vs year ending June 2005

Inputs required during 2007-2009 Biennium

- \$2.9 M in state investment
- \$3.0 M in private support
- 40 top graduate students
- Other:
 - \$9 M in federal research grants

Early Indicators

(in addition to progress on outcome measures)

- ★ 4 faculty to be hired*
- ★ NA: undergraduate student credit hours*
- ★ 5,000 graduate student credit hours*
- ★ Improvements to labs: all new labs for BME in 2006. CSEE has sufficient offices and space
- ★ Other early indicators*
 - ★ NA

* During 2007-2009 Biennium



Oregon Institute of Technology

2007-2009
Campus Goal Setting

March 20, 2006

Mission Statement

- ★ Mission:

OIT, the only public institute of technology in the Pacific Northwest, provides degree programs in engineering and health technologies, management, communications, and applied sciences that prepare students to be effective participants in their professional, public and international communities. The following objectives are central to our mission:

1. Provide degree programs that enable graduates to obtain the knowledge and skills necessary for immediate employment.
2. Offer continuing and distance education and advanced professional studies to meet the emerging needs of today's citizens.
3. Provide informational and technical expertise to regional, state, national, and global publics in applied research.
4. Develop and maintain partnerships with public and private institutions, business and industry, and government agencies to ensure quality programs that meet the needs of students and the organizations that employ them.
5. Provide statewide access to address the needs of the Oregon workforce.

Mission Statement (con't.)

- ★ University Vision Statement

OIT shall be a leader in higher education in the Northwest, providing Oregon, the region, and the nation with graduates who have the knowledge and skills to excel in an increasingly technological workplace. In addition to our reputation for teaching excellence, we will be known for our commitment to applied research, scholarship, and economic development.

- ★ Aspirational Peers

- ★ Cal Poly, San Luis Obispo
- ★ Colorado School of Mines
- ★ Michigan Technological University

Mission Statement (con't.)

Engineering, Computing & Technology

OIT, with a major campus in the high desert, rural region of Oregon east of the Cascades attracts those students from rural Oregon who do not choose the Willamette Valley and urban Portland for education. We attract rural students into programs in engineering, computing and technology to support the development of the manufacturing workforce of Oregon. OIT also offers degrees and degree completion programs in engineering and technology in the metropolitan area of Portland in partnership with the Oregon community college system and other OUS universities.

In Engineering, Computing, and Information Technology, OIT occupies two major niche areas: 1) rural Oregon and 2) degree completion in metropolitan areas.

An emphasis in undergraduate research using our interdisciplinary team approach prepares students to go on into graduate programs and be immediately effective in the industry workplace.

A thematic niche in sustainability and renewable energy integrates the engineering and technology programs.

Note also that OIT has a major niche activity in delivery of baccalaureate allied health programs in Klamath Falls and throughout Oregon, in partnership with Oregon community colleges, OHSU and industry. OIT offers the unique opportunity for integration of the engineering and technology programs with the health professions.

Mission Statement (con't.)

Oregon Renewable Energy Center (OREC)

OREC was established in 2001 (started in 2002 with seed funding from DOE) to integrate renewable energy technologies into energy systems for practical use by businesses and consumers.

Mission Statement:

The mission of the Oregon Renewable Energy Center is to enhance development and promote availability of renewable energy through:

- Energy Systems Engineering
- Applied Research
- Technical Assistance and Information Dissemination
- Academic Degree Programs
- Industrial Training and Development

Vision:

To grow OREC into a vibrant, globally recognized, pre-eminent renewable energy center that serves the educational and testing/certification needs of local, state and regional renewable energy industries, communities and people.



Mission Statement (con't.)

Sponsored and Pre-College Programs

“Advancing Knowledge, Transforming Lives”

The Oregon Institute of Technology’s department of Sponsored and Pre-College Programs is dedicated to providing a K-16 pipeline of access to college engineering and computer programs for our youth. We produce and leverage programs that raise the educational aspirations of our youth to include a future in higher education.

Desired Outcomes in 2020

- 350% Increase in BS Degrees* (1999: 167 – 2020: 615)
- 2000% Increase in MS Degrees* (1999: 1 or 2 – 2020: 20/year)
- 0% Increase in PhD Degrees*
- 400% Increase in externally funded research* (\$500,000/year)
- 100% Increase in patent disclosures* (10/year by 2020)
- 100% Increase in license revenue*
- ____% Increase in spin offs* (2/year by 2020)
- A National Ranking for Civil, Mechanical, Renewable Energy Systems
- Other desired outcomes
 - Strong relationships for applied research, professional development and continuing ed courses with the following Oregon clusters: High Tech, Metals, Healthcare, Sustainable Industries
 - 6,000 Pre-College contacts by 2020

* vs year ending June 1999

If any of the above are not applicable insert "N/A"

Inputs required during 2007-2009 Biennium

- \$1.2M in state investment
- \$1.2M in private support
- 10 top graduate students
- Others
 - Partnerships established with Coalition 21 for Manufacturing
 - \$200,000 for Pre-College and Project Lead the Way

Early Indicators

(in addition to progress on outcome measures)

- ✦ 5 faculty hired*
- ✦ 28,750 undergraduate student credit hours*
- ✦ 650 graduate student credit hours*
- ✦ Improvements* to labs:
 - Embedded Systems
 - Renewable Energy (Smart Energy)
- ✦ Other early indicators*
 - Increase in % of women in engineering programs to a total of 30 new students/year

* During 2007-2009 Biennium



Portland State University

2007-2009
Campus Goal Setting

March 20, 2006

Mission Statement

- ✦ Vision/Mission:
- ✦ To be the university of choice for high quality engineering education and research leadership in partnership with industry, the public sector, and research agencies.
- ✦ Aspirational Peers
 - ✦ University of Virginia
 - ✦ University of Texas – Arlington
 - ✦ New Jersey Institute of Technology

Desired Outcomes in 2020

- ☀ 111% Increase in BS Degrees*
- ☀ 225% Increase in MS Degrees*
- ☀ 500% Increase in PhD Degrees*
- ☀ 1,532% Increase in externally funded research*
- ☀ N/A % Increase in patent disclosures*
- ☀ N/A % Increase in license revenue*
- ☀ N/A % Increase in spin offs*
- ☀ 100 National Ranking of College
- ☀ Other desired outcomes
 - Top 40 in Computer Science
 - Top 10 Ranking in Capstone, Service Learning, and Learning Communities; World Ranking in ETM
 - 15 Patent Disclosures, \$250k in License Revenue, 10 Spin Off Companies

Inputs required during 2007-2009 Biennium

- \$9M in state investment
- \$18M in private support
- 340 top graduate students
- Others
 - \$15M Capital Investment – Manufacturing & Infrastructure Engineering Center



Early Indicators

(in addition to progress on outcome measures)

- ★ 5 faculty hired*
- ★ 24,800 undergraduate student credit hours*
- ★ 10,516 graduate student credit hours*
- ★ Improvements* to labs: Other early indicators:
 - ★ Ph.D.s in all Departments
 - ★ Full NWCEST Occupancy
 - ★ Stable MCECS Base Budget
 - ★ Expanded Sponsor R&D Budgets – Multi-year

* During 2007-2009 Biennium



Oregon State University

2007-2009
Campus Goal Setting

March 20, 2006

Mission Statement

- ★ **Mission:** Driven by a passion to create opportunity for our students, the people of OSU Engineering are fully committed to developing extraordinary engineers, creating powerful new ideas from research, and fueling innovation that is truly visionary—all to build a better future for Oregon and the world.
- ★ **Vision:** To best serve the people of Oregon, Oregon State University (OSU) has embarked on a journey to transform its College of Engineering from a great program into one of the nation's top-25. A top-25 engineering college located in Oregon will help the state, the Pacific Northwest, and the nation remain globally competitive by delivering top engineering talent, from BS through PhD, and by spinning out new ideas from internationally competitive research programs.
- ★ **Aspirational Peers**
 - **Average of Top 25 Schools**
 - **University of Washington (≈ 25th)**
 - **Arizona State University (≈ 50th)**

Desired Outcomes in 2020

- ✱ 1.5x Increase in BS Degrees*
- ✱ 1.9x Increase in MS Degrees*
- ✱ 3.4x Increase in PhD Degrees*
- ✱ 9x Increase in externally funded research* (5x vs. '05)
- ✱ 9x Increase in patents*
- ✱ 200x Increase in license revenue* (20x vs. '05)
- ✱ 8x Increase in spin offs*
- ✱ Metrics and impact of the average of top 25 Colleges of Engineering

- ✱ Other desired outcomes
 - 5-10 National Research Centers
 - Seen as a key driver of Oregon's economy by delivering top talent and spinning out competitive ideas

* vs year ending June 1999

Back up

Metric	FY1999	FY2005	FY2020
BS	390	520	600
MS	123	182	350
PhD	27	24	120
Rsrch,\$M	12	24	120
Patents	1	1	10
License, \$M	0.005	0.050	1.0
Spin offs	0	1	5-10 Value of total

Back up

Metric	OSU '05	ASU* ~50th	UW* ~25th	Top 25 Ave*
BS	520	684	610	681
MS	183	480	302	482
PhD	25	74	99	120
Research, \$M	24	42	80	128
Faculty	103	187	190	222
Results per Professor vs. US Ave*	1.31*	1.15	1.21	1.43

* Based on 2004 ASEE data. Results per professor with 50% undergrad and 50% Grad workload

Inputs required during 2007-2009 Biennium

- \$50 M in state investment
- \$50 M in private support
- 150 PhD (top) students** (44% growth in last 6 years)
- Others
 - Recruit and retain the nation's best faculty
 - Form stronger partnerships with regional industry clusters

** PhD admits to meet target PhD production in 2013

Early Indicators

(in addition to progress on outcome measures)

- ★ 50 faculty hired*
- ★ 125,000 undergraduate student credit hours*
- ★ 40,000 graduate student credit hours*
- ★ Improvements* to labs: ONAMI
Apperson
- ★ Other early indicators*
 - Quality of faculty hired: measured by accomplishments and place
 - Level of engagement with regional industry clusters
 - Quality of PhD students recruited

* During 2007-2009 Biennium



University of Oregon

Computer and Info. Science

Materials Science Institute

2007-2009

Campus Goal Setting

March 20, 2006

Mission Statement

UO Computer and Info. Science

★ Vision/Mission:

Our vision mandates multidisciplinary research and education supported through close collaboration with other UO departments and professional schools, as well as with global and regional industry. Our approach to both research and education will be driven by real-life applications and service to our community.

★ Aspirational Peers

- Brown University: small, prestigious, innovative
- Indiana University: liberal arts, interdisciplinary
- Virginia Polytechnic Institute: small, industrial ties
- Johns Hopkins University: interdisciplinary, informatics, security research

Computer Science in a Comprehensive University

★ A key element of Oregon's research portfolio

★ Interdisciplinary Research

● Computational Science:

- Bio-informatics: genomics, kinesthesiology, simulation
- Neuroinformatics: NIC and LCN partnership on fMRI ("big magnet") and dense array EEG brain imaging

● Intellectual property issues in open source

★ Societal Impact

● Assistive Technology

- "EyeDraw" (drawing pictures using eye-tracker)
- Mobility control for paralyzed children

● Multimedia Technology

- Enabling an average Internet user to broadcast video to any number of users ("grandma can host her cooking show at home without going to FCC")
- Tele-medicine

Open Source Software at UO

- ✦ From federally funded research projects to open-source projects
 - "CogLink" (NIH), individually tuned emailing environment ("used by people who have been unsuccessful in using other email programs because they are too hard to learn and there are too many things to remember.")
 - Open source spin-off company
 - "TAU" (NSF), the leading parallel performance tuning tool for high-performance scientific computing.
 - Open Source Signature Research Center

Desired Outcomes in 2020

- ☀ 270% Increase in BS Degrees*
- ☀ 275% Increase in MS Degrees*
- ☀ 200% Increase in PhD Degrees*
- ☀ 150% Increase in externally funded research**
- ☀ 150% Increase in patent disclosures**
- ☀ 400% Increase in license revenue**
- ☀ 200% Increase in spin offs**
- ☀ 30th National Ranking of CIS departments (64th in 2006)
- ☀ Other desired outcomes
 - Increase in Industrial Partners
 - Increase in Endowed Chairs
 - School of Computing and Informatics
 - Bridges to other professional schools and programs: sciences, business, law, education, allied arts and music

•vs year ending June 1999

•**vs year ending June 2006

If any of the above are not applicable insert "N/A"



Inputs required during 2007-2009 Biennium

- \$2M in state investment
- \$3M in private support
- 40 top graduate students

Early Indicators

(in addition to progress on outcome measures)

- ☀ 4 faculty hired*
- ☀ 100% increase in undergraduate student credit hours*
- ☀ 100% increase in graduate student credit hours*
- ☀ Improvements* to labs and collaborative/PR space
 - ☀ Visualization Lab
 - ☀ Collaborative Informatics Lab
- ☀ Other early indicators*

* During 2007-2009 Biennium

Mission Statement

Materials Science Institute

★ Mission:

- *Research* excellence in the science of materials
 - National young investigators: 13 of 15 last hires
- Outstanding and productive *education* programs in the science of materials
 - Graduate Internship Program, IGERT, GK-12
- Mutually beneficial *collaboration* between faculty and materials researchers in the State of Oregon.
 - UO-MSI/OSU-CAMR, ONAMI, CAMCOR
- Innovative University-industry *partnerships* that foster innovation, professional and economic development.
 - Graduate Internship Program, CAMCOR, ONAMI

Impacted Clusters and Aspirational Peers

☀ Impacted Clusters

- High Technology/Software
- Forest/Wood/Paper Products
- Apparel/Sporting Goods
- Biomedical

☀ Aspirational Peers

- University of California, Santa Barbara - Interdisciplinary success
- University of Wisconsin - Integration of research/education
- University of Minnesota - Industry partnerships

Desired Outcomes in 2020

- ★ -----% Increase (from 0 to 20) in BS Degrees*
- ★ 2900% Increase in MS Degrees*
- ★ 300% Increase in PhD Degrees*
- ★ 300% Increase in externally funded research*
- ★ 600% Increase in patent disclosures*
- ★ 1900% Increase in license revenue*
- ★ -----% Increase (from 0 to 1) in spin offs*
- ★ 1st National Ranking of Chemistry Masters Degrees awarded (ranked 7th in 2006)
- ★ Other desired outcomes
 - Thriving undergraduate materials program
 - 40 participating company partners
 - \$1,000,000 in CAMCOR usage by industrial users

* vs year ending June 1999

Inputs required during 2007-2009 Biennium

- \$3M in state investment
 - UO/OSU Optical Materials Grad Intern Program
 - UO/PSU Graduate Semiconductor Courses
 - GK-12 Outreach Program
 - UO/OMSI Materials/Nanoscience Outreach
 - Undergrad Materials Chemistry Research Program
 - CAMCOR Analytical Technique Workshops
 - Laboratory Renovations
- \$20M in private support
- ~60 top graduate students/year
- Others
 - Internship support by our industrial peers

Early Indicators

(in addition to progress on outcome measures)

- ★ 2 faculty hired*
- ★ N/A - undergraduate student credit hours*
- ★ 3500 graduate student credit hours*
- ★ Improvements* to labs:
 - ★ 3 renovated laboratories
 - ★ Construction of ONAMI/CAMCOR Facility
- ★ Other early indicators*

* During 2007-2009 Biennium



Southern Oregon University

2007-2009

Campus Goal Setting

March 20, 2006

Mission Statement

Computer Science and Physics/Engineering/Materials Science

- Prepare students for graduate school, careers in technology, or seamless transfer to Oregon's Colleges of Engineering.
- Teach students teamwork and methods of engineering solutions to problems and provide hands-on training in state-of-the-art laboratories.
- Assist our region through a graduate program in computer science and research on novel materials, thin film technology, computational linguistics, bioinformatics, discrete global grids, and computer forensics.
- Focus on data analysis, software engineering, computer security and forensics (CS).
- Excel in undergraduate research in materials science, especially ferroelectrics and metallurgy (Physics/Materials Science).

Aspirational Peers

- Universities our size usually do not have programs in materials science. Therefore, we propose to align our program with the MSI at the U of O to ensure rigor and seamless transition into their graduate programs.
- For Computer Science - Norwich University (Vermont) and the University of Tulsa.

SOU ETIC Programs — Training and Research Contributions to Clusters

Oregon Clusters:

Aerospace/Aviation
Biomedical Devices
Biosciences
Creative Services
Cyber Security
Defense
Display Technology
Education
Energy
Financial Services
Forest Products
Healthcare IT
High Tech
Metals
Nanotechnology
Professional & Business Services
Software
Silicon
Telecommunications

OECD Clusters:

Biomedical
Creative Services
Forest/Wood/Paper Products
High Technology/Software
Metals
Professional Services

Program Involved:
Computer Science
Materials Science (Physics/Eng.)
Both CS and Materials Science

Desired Outcomes in 2020

- ✱ 140% Increase in BS Degrees*
- ✱ 140% Increase in MS Degrees*
- ✱ N/A Increase in PhD Degrees*
- ✱ 100% Increase in externally funded research*
- ✱ N/A Increase in patent disclosures*
- ✱ N/A Increase in license revenue*
- ✱ N/A Increase in spin offs*
- ✱ ? National Ranking of _____ (college, department, or program)
- ✱ Other desired outcomes
 - Increased placement of our graduates in career positions and internships.
 - Increased collaboration with regional businesses.
- ? –Our Materials Science program is unique for schools our size. Computer Science programs are so diverse that ranking is difficult.

* vs year ending June 1999

Inputs required during 2007-2009 Biennium

- \$0.53 M in state investment
- \$0.265 M in private support
- 5 top graduate students
- Others
 - SOU Science Building Addition and Remodel (planning in 07-09 and construction in 09-11)
 - Success of recruiting strategies for computer science.

Early Indicators

(in addition to progress on outcome measures)

- ★ 1.5 faculty hired*
- ★ 16,000 undergraduate student credit hours*
- ★ 900 graduate student credit hours*
- ★ Improvements* to labs: \$150,000
- ★ Other early indicators*
 - ★ Significant increase in major headcount.
 - ★ Increase in grant funding.

* During 2007-2009 Biennium



Western Oregon University

2007-2009
Campus Goal Setting

March 20, 2006

Mission Statement

☀ Mission:

The Computer Science Division at Western Oregon University is primarily a software oriented program that stays close to the current needs of industry. We teach the theoretical and practical aspects of computer science, with emphasis on the practical. Our primary goal is to give students a comprehensive foundation in the field of computer science within a liberal arts setting. We are committed to preparing graduates who will be productive employees in the IT industry or promising graduate students.

☀ Aspirational Peers

- ___Western Washington University___
- ___CSU Stanislaus_____
- ___Eastern Washington University_____

Desired Outcomes in 2020

- ✦ 75% Increase in BS Degrees*
- ✦ NA% Increase in MS Degrees*
- ✦ NA% Increase in PhD Degrees*
- ✦ NA% Increase in externally funded research*
- ✦ NA% Increase in patent disclosures*
- ✦ NA% Increase in license revenue*
- ✦ NA% Increase in spin offs*
- ✦ NA - National Ranking of (college, department, or program)
- ✦ Other desired outcomes
 - Intend to have an MIS Degree by 2010
 - Intend to realize funded research by 2012
 - Software Testing Lab to be created and staffed by 2009

* vs year ending June 1999

If any of the above are not applicable insert "N/A"



Inputs required during 2007-2009 Biennium

- \$1.0M in state investment
- \$.3M in private support
- NA - top graduate students

Early Indicators

(in addition to progress on outcome measures)

- ✦ 2 faculty hired*
- ✦ 30% undergraduate student credit hours*
- ✦ NA - graduate student credit hours*
- ✦ Improvements* to labs:50%

* During 2007-2009 Biennium