

**Engineering and Technology Industry Council
Campus Investment Proposal
Biennium from July 1, 2007 to June 30, 2009**

Campus: Oregon Institute of Technology

Contact Name: Dr. Martha Anne Dow, President

Date of Revised Submission: April 19, 2006

Summary of Proposal:

The OIT proposal emphasizes three specific projects which include the following:

1. Pre-College Program with activities dedicated to creating a pipeline of access to engineering, technology and computer systems college programs. Budget request: \$200,000
2. Oregon Renewable Energy Center (OREC) – New projects in sustainability and renewable energy systems education. Budget request: \$500,000
3. The Information Technology Program with a focus on projects in Embedded Systems, engineering technology, and Medical Informatics.
Budget request: \$780,000

Total Request: \$1,400,000

Vision Statements (Institutional and Programmatic)

OIT will 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. We will be known for teaching excellence and a commitment to applied research, scholarship and economic development in an increasingly global economy.

The Oregon Renewable Energy Center – The renewable energy and education leader in the Northwest and nation.

Pre-College Programs – A major program which encourages careers in engineering, technology and healthcare for Oregon youth.

Information Technology – At the leading edge of education for working professionals in the application of computing and technology in the healthcare profession.

Aspirational Peers

OREC – Florida Solar Energy Center (FSEC) of the University of Central Florida. This center has a 25+ year history and conducts research and testing in several areas of renewable energy. OREC does not have a U.S. peer in renewable energy education. The OIT four year degree is unique in the nation.

Information Technology – Healthcare Informatics at Montana Tech of the University of Montana is a model program for our new emphasis within IT.

Pre-College – The OIT program has collaborated with Saturday Academy and the OSU pre-college programs. These programs would be “peer programs.” The pre-college program aspires to leverage and expand capacity through extensive collaboration with these peers and specific high schools in Oregon. The OIT program will document and track the participating students to assure that target outcomes are reached.

Long-term Goals of these activities

Pre-College Goals:

1. Serve a geographical and socially diverse population
2. Leverage and expand capacity through institutional collaborations
3. Provide experiential activities in math, science and engineering that inspire students to continue in the technology career paths
4. Provide opportunities for dual credit enrollments with high school partners to facilitate degree completion and college readiness that will impact retention

OREC Goals:

1. Educate the present and next generation of engineers who will design renewable energy systems that focus on sustainability
2. Engage in applied research of renewable energy components with emphasis on testing for long-term system reliability
3. Develop training courses that assist the industries
4. Provide technical assistance
5. Provide public education to influence the acceptance of renewable energy

Information Technology Goals:

1. To enhance the workforce demand for IT professionals in the medical workforce
2. To integrate engineering and computing technologies with health technologies

Investment Description

OREC will expand its Sustainable Energy Laboratory for testing and certification (T&C) of renewable energy components and systems in Klamath Falls and Wilsonville. The laboratory will develop staff expertise, testing procedures, and certification criterion for renewable energy components and renewable energy systems. The T&C facility at OREC will build and expand capabilities in Solar Thermal, Solar Photovoltaics, Fuel Cells, Geothermal, Wind and Biomass

component and system testing. Presently, there is no such facility in the Northwest region. This will make this a unique facility to independently test, verify, and certify the performance of renewable energy components and systems. The research centers at OREC will support the growth of renewable energy components and systems manufacturers in the Northwest region. OREC will have close collaboration with renewable energy industries in the state and will conduct “beta-testing” on new products for performance and reliability. OREC will collaborate with OSU, PSU, UO and PNNL through the Oregon Center for Clean Energy and will complement the expertise in renewable energy research in other universities within the state. In 2005, OREC, through OIT, started a 4-year B.S. degree program in renewable energy systems (RES). The first graduates from this program are expected in FY 09. ETIC funding will help address the needs of the state of Oregon and the Northwest region in education, training, research, development and information dissemination in the area of renewable energy and sustainability. The funding from ETIC will help expand this program, develop distance learning courses and diplomas, and develop a Master’s program in renewable energy systems. We expect to collaborate with other universities in developing the new courses and programs.

Pre-College Programs – The Pre-College investment will support the office of Pre-College programs which now serves over 3,500 students. Specific programs will include workshops, camps and scholarships for youth.

Collaborations - For the last three years, OIT has mounted a strategic coordinated effort in recruiting engineering students through focused outreach programs at the pre-college level. These efforts include IGTC: I’m Going to College” (career awareness, campus visits, and hands-on classroom experiences with undergraduate students for 6th graders all Klamath county and city schools participate, 900 students) collaboration with NELA: Northwest Education Loan Association 2006 will be the 4th year for IGTC, EYW: Expanding Your World (career exploration for 8th grade girls and boys, 2006 will be the 12th year for EYH, 850 students), GRINS: Girls Rock in Science (7th and 8th graders, 2006 will be the 2nd year with collaboration with PacifiCorp Foundation, SOU, SOPTV, and Dragon Fly TV), TWIST: Teen Women In Science and Technology (9-12th graders, 2006 will be the 16th year for this summer residential program for high school girls collaboration with Qwest, AAUW, high schools statewide and N. California and SW Washington.), Women Engineering Alumni Night (middle and high school girls meeting with undergraduate and alumni engineering women), and Women Engineering Day (high school girls exploring engineering under the leadership of SWE: Society of Women Engineers). In 2005-2006, the Department has piloted a series of “*Be Your Own College Coach*,” Saturday workshops for grades 9-12 and in 2006 will pilot this college coaching curriculum at Chiloquin Jr/Sr High as part of a grant from Oregon GEAR-UP.

Also leveraging on a four-year grant funded by the National Science Foundation, we were able to establish the CSEMS (Computer Science, Engineering and Math Scholarship) program targeting at women and minority students. We have been successful in awarding twenty-six \$3,000 scholarships to women engineering and computing students in the last three years.

Information Technology - These funds will be invested in new faculty (3 FTE) and a technician (1 FTE) to support the BS in Embedded Systems Engineering Technology and the BS in Medical Informatics. Equipment needed to design and implement embedded systems will be acquired and installed in a dedicated embedded systems laboratory. A computer laboratory will be

equipped with a networked computer system with medical informatics software. Other funds will be used to support the faculty delivering the existing IT, MIS and SET program.

Results and Benefits

OREC - OREC gains in recognition as the premier center for research, education and testing of renewable energy components and systems in the Northwest. The Renewable Energy Systems degree will be nationally-recognized for the innovative program to educate engineers and technologists in Oregon and nationally through distance delivery.

Pre-College – K-12 students in Oregon will enroll in colleges in computing, engineering, and technology in higher numbers and provide a steady stream of work-ready professionals for Oregon’s industry. The increased engagement of pre-college youth with technology education will emphasize maintaining the interest of girls, minorities and disadvantaged youth.

Results

Metrics will be numbers of students served, contact hours, and undergraduate student credit hours

AY 99	AY09	AY11	AY13	AY20
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Student/dual credit hours in Math, Science and Engineering

247	1343	1396	1451	1631
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Student contact hours in the K-12 pipeline

864	4000	4480	5018	6000
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Information Technology – Serving Oregon industry through the education of working professionals who design and develop embedded systems for applications to healthcare and personal device products. Outcomes will be educated professionals who interrogate and analyze patient databases to support the delivery of high quality healthcare in a cost effective manner.

1	<i>OIT Summary</i>	2007-2009 Biennium	OIT - Top Tier	OIT - IT	OIT - Pre-college
2	Proposed State investment (\$M)				
3	Existing programs (2)	\$ 1,050,000	\$ 300,000	\$ 550,000	\$ 200,000
4	New Programs (3)	\$ 350,000	\$ 200,000	\$ 150,000	\$ -
5	Subtotal	\$ 1,400,000	\$ 500,000	\$ 700,000	\$ 200,000
6	Expected private support (\$M) (4)	\$ 1,400,000	\$ 500,000	\$ 700,000	\$ 200,000
7	Other	\$ -	\$ -	\$ -	
8	Total (\$M) (7)	\$ 2,800,000	\$ 1,000,000	\$ 1,400,000	\$ 400,000
9	Personnel supported (FTE) (5)				
10	Existing faculty (1)	\$ 5	2.0	3.0	0.0
11	New faculty(6)	\$ 4	2.0	2.0	0.0
12	Existing staff (1)	\$ 5	0.5	0.0	4.0
13	New staff(6)	\$ 1	0.5	0.5	0.0
14	Total	14.5	5.0	5.5	4.0
15	Uses of proposed investment				
16	New facilities	\$ -		\$ -	\$ -
17	Improvements to facilities	\$ 75,000	\$ 50,000	\$ 25,000	\$ -
18	Laboratory equipment	\$ 760,000	\$ 310,000	\$ 450,000	\$ -
19	Other equipment	\$ 130,000	\$ 50,000	\$ 60,000	\$ 20,000
20	Other one-time expenses	\$ 175,000	\$ 45,000	\$ 90,000	\$ 40,000
21	Existing faculty salaries & benefits (1)	\$ 850,000	\$ 300,000	\$ 550,000	
22	New faculty salaries & benefits (6)	\$ 350,000	\$ 200,000	\$ 150,000	\$ -
23	Existing staff salaries & benefits (1)	\$ 320,000	\$ 20,000	\$ -	\$ 300,000
24	New staff salaries & benefits (6)	\$ 65,000	\$ 25,000	\$ 40,000	\$ -
25	Services & supplies	\$ 75,000	\$ -	\$ 35,000	\$ 40,000
26	Total (7)	\$ 2,800,000	\$ 1,000,000	\$ 1,400,000	\$ 400,000
	OIT Budget Notes:				

	(1) Hired with ETIC funds through June 2007. OREC - Rajiv Arya (Director), John Yarbrough (program director). Shift funds to Bob Bass (new program director); IT - Bockelman, Gibbs, Kirby.
	(2) Programs started with ETIC funds through June 2007. OREC - establishment of OREC; IT - existing IT, MIS and SET programs in Portland; Pre-college - 'I'm Going to College', TWIST, GRINS, etc.
	(3)(a) OREC -delivery of BS in Renewable Energy Systems in Portland in partnership with Clackamas Community College and in Klamath Falls. Establishment of Sustainability Laboratory, and IT - BS in Embedded Systems Engineering Technology and BS in Medical Informatics, in partnership with OHSU.
	3(b) Continuing cost of ETIC investments funded prior to June 2007 (2009-2011) - \$500,000
	(4) Consistent with ETIC Private Support Policy dated 1-23-02.
	4(b) Continuing cost of new programs (line 4) - \$600,000
	(5) FTE expressed as percent of full time over 2 years of biennium. For instance, a new full-time faculty member hired on 7/1/08 would be counted as 0.5 because he/she joined half way through the biennium.
	(6) To be hired with ETIC funds during 2007-2009 biennium: OREC - To be hired with ETIC funds during 2007-2009 biennium. Bob Rogers plus 1.0 FTE of existing faculty to participate in applied research projects. Additional 0.5 FTE to bring administrative support to 1.0 FTE total; and IT - New Embedded Systems (1.0 FTE) and Medical Informatics (1.0 FTE) faculty.
	(7) Totals on line 8 and line 26 should match.

Metrics Forecast (for programs/departments receiving ETIC funding):

	Baseline	Projected (2)			
	AY 99 (1)	AY09	AY11	AY13	AY20
Undergraduate student credit hours	23263	43333	45500	47775	50164
Graduate student credit hours	0	1800	2500	3500	5000
Bachelor's degrees granted	128	272	286	300	315
Master's degrees granted	0	25	40	60	75
Externally-funded research expenditures (3)	\$350,000	\$450,000	\$570,000	\$600,000	\$650,000
Invention disclosures (4)	0	1	2	3	4
License/options (5)	0	1	2	3	3
License income received (6)	0	5000	10000	20000	20000
Startup Companies (7)	0	0	1	2	3
National ranking of <program or department> (8)	N/A	1	1	2	2
National ranking of <college>	N/A	25	25	25	25
Notes/instructions. (Delete these notes and replace with your own in the document you submit.)					
(1) Actuals from 12 months ending June 30, 1999.					
(2) Forecast for the 12-month periods shows. Eg. AY09 should be forecast for 12-month period ending June 30, 2009.					
(3) Total external dollars spent by ETIC-related departments towards research during academic year.					
(4) See Association of University Technology Managers (AUTM) survey definitions.					
(5) Number of license or option agreements executed during the year. See AUTM survey definitions.					
(6) License issue fees, payments under options, annual minimums, running royalties, termination payments, the amount of equity received when cashed in, and software end-user license fees equal to \$1000 or more, but not research funding, patent expense reimbursement, valuation of equity not cashed-in, or end-user license fees less than \$1000. See AUTM survey definitions.					
(7) New companies that were dependent on the licensing of your program's technology for their initiation. See AUTM survey definitions.					
(8) Forecasts for multiple programs and departments are encouraged. Each ranking should be footnoted with the ranking body or ranking methodology.					
(9) Add additional metrics as appropriate					