

# **Engineering and Technology Industry Council**

## **New Initiative Proposal**

### **Biennium from July 1, 2005 to June 30, 2007**

**Campus:** Oregon Institute of Technology  
**Contact Name:** Dr. Martha Anne Dow, President OIT  
**Date of Submission:** April 2, 2004  
**Summary of Proposal:** Digital Hospital Initiative in the Center for Health Professions

OIT's Center for Health Professions (CHP) has a strong track record of producing high quality graduates in a number of allied health professions, including Medical Imaging Technologies, Dental Hygiene, Health Sciences, Clinical Laboratory Sciences, EMT-Paramedic and a collaborative program in Nursing with OHSU. A Respiratory Care program is being added in the Fall of 2004. OIT also has a strong faculty in computer systems (hardware and software), manufacturing and management with interests in the digitization of health care.

CHP currently offers a Picture Archiving and Communication Systems (PACS) certification to healthcare personnel through distance education as a partnership between our management, computer and medical imaging faculty. The work proposed here will expand these activities to the digital hospital, building on existing expertise in engineering, management and technology and include expanded activities with both the healthcare industry (hospitals) and the high technology industry of Oregon working in this area.

The Oregon Employment Department forecasts the need for 48,000 additional healthcare workers by 2012. This makes healthcare the fastest growing occupational group with a 24.4 percent growth projection from 2002 to 2012. At the same time the opportunity for participating in the development and implementation of the digital hospital has emerged as a major opportunity for industry in the state of Oregon, as noted in the Portland Business Alliance summit on the Digitization of Healthcare on March 31, 2004.

#### **Goals**

The goals of this project include 1) the application of faculty expertise in computer software and hardware, electronics, sensors and manufacturing technologies with the allied health faculty to create an applied research and education program on the digitization of healthcare and the implementation of the digital hospital, 2) creation of partnerships between allied health professions, computer, management and engineering technology faculty and Oregon industry to collaborate on digital hospital issues, 3) creation of partnerships between management, software and healthcare faculty and industry to improve the use of digital records in the patient management process, and 4) creation of partnerships between sensor and diagnostic faculty and computer faculty with industry on the utilization of real-time data in patient care.

## **Investment Description**

Three fulltime faculty positions will be funded under this program at OIT for a two-year period, one position each in computers, engineering technology and allied health. This investment will be leveraged through the involvement of approximately a dozen other faculty members in collaborative interdisciplinary research projects. A Digital Hospital steering committee will be established with membership from industry including regional hospitals and the microelectronic and sensing devices, computer and software industries in Oregon. Competitive interdisciplinary faculty team projects will be funded for design projects that address this digital hospital initiative. Preference will be given to applied research that involves student design teams developing products that meet industry needs.

An annual research conference will be organized and held to highlight faculty and student activities in these areas, with broad involvement by the academic and industrial researchers in the state. This conference will result in increased faculty and student involvement in technologies. This will support long-term impact on the state's economy and will support the convergence of academic and industry interests in the digital hospital area.

## **Results**

- 1) Faculty will be funded to develop academic programs and to conduct applied research in the digital hospital area. A proposed metric is the number of OIT faculty and students engaged annually in funded research projects in this area.
- 2) Industry partnerships will be developed through the creation of a Digital Hospital steering committee responsible for the review and approval of faculty/student projects. Metrics include the number of industry partners represented on that committee and the number of projects approved for funding each year.
- 3) This program will result in the development of courses of study (minors, certificates or specializations) related to the digital hospital. A metric is the number of such courses of study and the number of students enrolled in each.
- 4) This program will lead to collaborative applied research projects to result in intellectual property. A metric is the number of IP disclosures submitted in each year in this area.

	<b>7/1/05- 6/30/06</b>	<b>7/1/06- 6/30/07</b>	<b>Total</b>
<b>Proposed OUS Investment (\$M)</b>			
Faculty Positions (1)	200,000	200,000	400,000
Applied Research Projects	100,000	100,000	200,000
Supplies	50,000	50,000	100,000
Conference Expenses	50,000	50,000	100,000
<b>Subtotal</b>	<b>400,000</b>	<b>400,000</b>	<b>800,000</b>
<b>Expected private support (\$M) (2)</b>	<b>200,000</b>	<b>200,000</b>	<b>400,000</b>
<b>Total (\$M)</b>	<b>600,000</b>	<b>600,000</b>	<b>1,200,000</b>
<b>New Faculty Supported (FTE) (3)</b>	<b>3.0</b>	<b>3.0</b>	<b>6.0</b>
Notes:			
(1) Use as many lines as you need to give the proposed new investment(s)			

**Metrics Forecast:**

	<b>Baseline</b>	<b>Projected</b>			
	<b>AY 99</b>	<b>AY06</b>	<b>AY07</b>	<b>AY08</b>	<b>AY09</b>
ECS undergraduate student credit hours	23,263	31,800	33,390	35,055	36,810
ECS bachelors degrees granted	128	224	235	247	259
Total research expenditures per year (1)	0	0.4	0.5	0.6	0.75
Licenses sold (2)	0	3	3	4	5
(9)					
<b>Notes:</b>					
(1) Total dollars spent by ETIC-related departments towards research during academic year.					
(2) Patent licenses or other royalty-generating intellectual property licenses granted to commercial entities					