

**Engineering and Technology Industry Council  
Capacity Investment Plan  
Biennium from July 1, 2003 to June 30, 2005**

**Campus:** Oregon Institute of Technology  
**Contact Name:** Martha Anne Dow  
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**Summary of Proposal:** Statewide Access of Information Technology (IT) Education and Pre-College OIT/OSU/Saturday Academy Collaborative

**Statewide Access of IT Education:** Under this proposal OIT will be using existing infrastructure and proven practices to deliver a high quality four-year IT degree. These investments will combine the implementation of the IT collaborative begun in 1999-2001 biennium and the IT Portland initiative begun in the 2001-03 biennium. The development of an IT minor in collaboration with EOU will be distance delivered and will assist in the additional development of a professional certifications program in IT areas of specialization. Through the expansion of distance delivery, access for industry partners for incumbent worker training needs will be enhanced.

**Pre-College Collaborative:** Under this Collaborative OIT's Pre-College Program will use existing infrastructure and proven programs to coordinate the delivery of high quality science, math, technology and engineering education to pre-college youth statewide. Each program will assist the others in identifying and referring interested students to the appropriate programs.

These direct investments in the "pipeline" will contribute to the long-term economic growth and competitiveness of Oregon.

## **Goals**

### **I. Statewide Access to IT Education**

1. Strengthen and enhance the quality of the Information Technology curriculum, utilizing the "*Oregon IT Occupations Roadmap Phase 1*" research focusing on addressing the needs of IT industry sectors.
2. Collaboration between Oregon Institute of Technology and Eastern Oregon University in the development and delivery of a web based/distance learning minor in Information Technology.
3. The development of professional certification programs in appropriate IT areas categorized by employers primary use of information technologies
4. Increased recruitment of women and minorities in the Information Technology field.

## **II. Pre-College OIT/OSU/Saturday Academy Collaborative**

1. Support a collaborative that includes: OIT Pre-College Programs, Saturday Academy and OSU Extension Services 4-H, using existing infrastructure and proven programs to coordinate the delivery of high quality science, math, technology and engineering education to pre-college youth statewide.
2. Expand capacity through institution collaboration.
3. Serve a geographically more diverse population (geographic diversity/greater access).
4. Career related learning experience models for addressing CIM and CAM standards.
5. Pipeline of students to Oregon University System's Engineering and Technology Program. We will further expand the Advanced College Placement course in Math, Science, and Engineering, where high school students can receive college credit while attending these classes in their high schools. In addition, the expansion of our College Transition Program, where high school students can attend classes on campus side by side with college students, giving them a flavor and feel of the freshman experience while receiving college credit. This initiative will provide a continuum of academic experiences complemented by camp activities for rural youth throughout their 6-12 grades
6. Provide a better understanding of math, science, engineering, and technology careers.
7. Build participants' confidence in their technical abilities.
8. Introduce participants to role models and mentors.
9. Enable participants to experience the relationship between engineering/technology/ disciplines and their application to every day life.

### **Investment Rationale**

#### **I. Statewide Access to IT Education**

The ability to grow Oregon's economy depends on the competitiveness of its businesses and the quality of its workforce. IT workers comprise the largest segment of knowledge workers, and are a set of occupations found in almost every industry across the state. Oregon's Employment Department projects a growth rate for IT jobs at a rate two and half times greater than the average for all jobs. Over the past three years, the Information Technology Association of America (ITAA) reported that 50% of all IT jobs went unfilled due to lack of qualified applicants that did not have up-to-date skills. Bachelor's degrees are the most common educational requirement for IT jobs, with an estimated 50-60% of all IT jobs requiring at least a four-year degree. Professional certification in addition to a degree is becoming more common in the workplace and certification is increasingly used as a screening tool in hiring. Research in Oregon suggests that certification was found to be most valuable to people with a degree or at least five to seven years of work experience. Currently over 67% of IT employers use web or online training methods and web based/distance learning is the training method that most employers intend to increase in use, almost double the rate of other methods.

**Statewide Access to IT Education** investment for the biennium- \$580,000 with \$290,000 in private support

## **II. Pre-College OIT/OSU/Saturday Academy Collaborative**

The need to maintain and pique students' interest in the math science, technology and engineering fields and encourage their development is critical for the continued economic growth and competitiveness of Oregon and our citizens. In order for Oregon to realize sustained improvement in this area, long-term programs for young Oregonians must be in place and supported over time. These investments will expand OIT's pre-college activities to teen women and minority youth in rural Oregon, focusing predominantly Hispanic and Native-American populations. The number of Oregon students entering engineering and technology degree programs is declining while the demand of Oregon industries for technically degreed workers is growing.

OIT's Pre-College investment for the biennium-\$200,000 with \$80,000 private support.

## **Results**

### **I. Statewide Access to IT Education**

Metrics will be student credit hours, bachelor's degrees granted, women and minorities graduating.

These investments will result in:

1. Increased ECS graduation
2. Increased number of women and minority graduates.
3. Making education and training portable while making better use of web based, online, and distance learning programs and asynchronous learning networks.

### **II. Pre-College OIT/OSU/Saturday Academy Collaborative**

Metrics will be students served and contact hours. Each collaborating partner will submit financial detail and metrics through its host institutions. Despite the reduction in funding, the Collaborative has set a goal of 1-% increase over the biennium in numbers of students served and contact hours. OIT's Pre-College contribution 1437 students 6167 contact hours.

## Proposed Investment and Private Support Forecast (\$M)

	7/1/03-6/30/04	7/1/04-6/30/05	Total
<b>Proposed OUS Investment (\$M)</b>			
<b>Support of existing faculty (1)</b>	\$ 290,000	\$ 290,000	\$ 580,000
<b>Funds tied to existing programs (2)</b>	\$ 77,852	\$ 77,852	\$ 155,704
<b>New programs (3)</b>	\$ 22,148	\$ 22,148	\$ 44,296
<b>Subtotal</b>	\$ 390,000	\$ 390,000	\$ 780,000
<b>Expected private support (\$M) (4)</b>	\$ 185,000	\$ 185,000	\$ 370,000
<b>Total (\$M)</b>	\$ 575,000	\$ 575,000	\$ 1,150,000
<b>Faculty Supported (FTE)</b>			
<b>Existing (1)</b>	4.0	4.0	8.0
<b>New (5)</b>	0.25	0.25	0.50
<b>Total</b>	4.25	4.25	8.50
Notes:			
(1) Hired with ETIC funds through June 2003.			
(2) Programs started with ETIC funds through June 2003.			
(3) Use as many lines as you need to give the proposed new investment(s)			
(4) Consistent with ETIC Private Support Policy dated 1-23-02.			
(5) To be hired with ETIC funds during 2003-2005 biennium.			

### Metrics Forecast:

	Baseline	Projected			
	AY 99	AY04	AY05	AY06	AY09
Average SAT/ACT percentile of incoming freshmen (1)	1,049	1,060	1,060	1,070	1,080
Average GRE percentile of incoming grad. students (2)	n/a	n/a	n/a	n/a	n/a
Women graduating from ECS programs (5)	7%	8%	10%	10%	11%
Minorities graduating from ECS programs (5)(6)	7.80%	8%	8%	9%	10%
ECS undergraduate student credit hours	23,263	30,551	32,995	35,635	44,890
ECS bachelors degrees granted	128	208	225	243	306
ECS graduate student credit hours	49	n/a	n/a	n/a	n/a
ECS graduate degrees granted	0	n/a	n/a	n/a	n/a
Pre-college contact hours (8)	525	3,324	3,634	4,070	5,716
Notes:					
(1) If your applicants are required to submit SAT scores, use the percentile corresponding to the average composite SAT score of those submitting them. If they have the choice of SAT and ACT, use the average composite SAT score and the average composite ACT score, convert them to percentiles, and compute a weighted average of the two.					
(2) Percentile based on the average quantitative score over those submitting such scores; ignore verbal and analytic scores.					
(3) As a percent of those taking it for the first time					
(4) As a percent of all those entering					
(5) As a percent of all those graduating					
(6) Racial and ethnic minorities who are US citizens or permanent residents					
(7) Forecasts for multiple programs and departments are encouraged. Each ranking should be footnoted with the ranking body or ranking methodology.					
(8) Pre-college students participating in pre-college engineering, technology, computer science, math, and science programs					