

Engineering & Technology Industry Council

RECOMMENDATIONS FOR THE 2003–2005 BIENNIUM

Frequently Asked Questions

March 27, 2003

Q: How does the \$40M recommendation relate to past funding?

A: 1997 Legislature for 1997-1999 Biennium: \$5M
1999 Legislature for 1999-2002 Biennium: \$10M¹
2001 Legislature for 2001-2003 Biennium: \$25M²

Q: What results have been produced from the investments made so far?

A: Since July 1997,
46 new faculty members have been hired
37 new laboratories have been built or enhanced
\$53 million in private support has leveraged the public investments
36% increase in undergraduate engineering & computer science degrees awarded
by the combination of OUS campuses and OHSU/OGI

Q: What is industry willing to give to obtain a \$40 million investment of public funds?

A: There will be over \$67 million in new private investments associated with the proposed \$40M in public investments.

Q: What is the history of private support associated with this program?

A: 1997-1999 Biennium: \$7.1M
1999-2001 Biennium: \$8.5M
2001-2003 Biennium: \$37.5M (through 12/31/02)

Q: Will the resulting graduates get jobs?

A: Engineering and computer science graduates have been in high demand by both the private and public sector. Those who receive engineering bachelor's degrees in Oregon either go on to graduate school or obtain career jobs shortly after graduation. Since the current recession began a slightly higher percentage are going on to graduate school and a slightly lower percentage are obtaining their first career position. Those with technical degrees remain in high demand.

¹ \$5M in OUS Base Budget plus \$5M in new funds.

² \$5M in OUS Base Budget plus \$15M for ETIC Engineering Education Investment Fund plus \$5M for Top Tier initiatives.

Q: How does Oregon compare to other states?

A: Historically, Oregon has ranked 49th in terms of number of high-tech degrees awarded as a fraction the number of high tech employees in the state. As the economy works itself out of the current recession, demand for these technical graduates will far exceed the supply.

Q: What do you mean by 2X?

A: Our goal is to double the number of engineering and computer science degrees (bachelors and graduate degrees combined) by 2009 vs. the base year of 1999. We believe this is achievable with the level of funding we are recommending.

Q: How much more money will be needed after the 2003-2005 Biennium?

A: We estimate the investment level required in the 2005-2007 Biennium will be about \$35 to \$45 million in public funds.

Q: How does the proposal benefit rural Oregon?

A: It will help in a variety of ways: by helping rural youth to explore engineering and technology at an early age, by investing in rural Oregon universities for providing rural college students with a high quality engineering education, and thereby providing rural Oregon enterprises with access to needed engineering and technology graduates for business growth.

Q: How can we afford to invest in engineering education when we don't have enough money for K-12?

A: The question should be: "How can afford to do otherwise?" Only with a strong source of technical talent and technical innovation will Oregon's industries be able to compete in the world economy, provide opportunities to Oregonians, and grow the tax base that will put our schools on a strong financial footing. In addition, strong engineering and computer science programs provide an important future opportunity for K-12 students and a reason to study hard and stay in school.

Q: What is the relationship of ETIC to Oregon's need to create jobs?

A: The ETIC investments generate jobs in six ways:

- (1) Much of the funds are used to hire faculty and staff and to purchase goods and services in Oregon.
- (2) Those hired through the investments spend money in the local community generating jobs.
- (3) Existing companies in Oregon will have the confidence to invest in their Oregon facilities with confidence that Oregon can supply the technical talent they need.

- (4) Companies considering establishing facilities in Oregon will know that Oregon is making the investments needed to ensure a supply of talent and innovation, and a culture that encourages same.
- (5) New companies will be created as a result of innovation and research.
- (6) The investments in technical talent and innovation will allow existing Oregon companies to grow and new companies to prosper, driving growth during this decade and the next.

Q: What is the relationship of this recommendation to “Top Tier”?

A: Our recommendations for ‘03-‘05 assume that growth in capacity go hand-in-hand with gains in excellence, as measured by national rankings of programs, departments, and colleges. As such, this proposal expands the “top tier” concept introduced in the ‘01-’03 biennium by allowing participating institutions to propose “excellence initiatives” that in most cases will lead to nationally ranked departments or programs.

Q: I’ve read that high tech jobs are going to third-world countries like India. How does this proposal relate to this trend?

A: For several decades, U.S. companies both “high-tech” and otherwise have looked to foreign labor markets to achieve the most cost-effective manufacturing. Where relatively low-skilled foreign workers are capable of producing products at the required quality levels, high-volume manufacturing facilities have been set up in third-world countries. With a few exceptions, the U.S. is no longer in a position to compete in the low-skill labor market. A separate and more recent trend is for third-world countries to invest heavily in technology education programs in an attempt to capture opportunities that require high-skilled workers. In some cases their progress has been impressive. Most U.S. companies still prefer to do their research and development domestically, however. Conducting research and development in the U.S. maximizes flexibility and responsiveness, and benefits from the U.S.’s strong system of intellectual property law. Fortunately, the U.S. universities remain unsurpassed in the research they do and the quality of education they provide, and most highly qualified international students strive to receive some portion of their university education in the US. Unfortunately, the quantity of graduates available for these research and development positions has been quite limited in Oregon. This is one more reason why the proposed investments are of strategic importance.

Q: How does this program relate to preparing young people for technical careers?

A: The recommendations include specific investments in pre-college programs and measurable goals for increasing the quality and diversity of incoming freshmen. They also encourage those starting in 2-year institutions to continue their education for a 4-year professional degree, and beyond.

Q: How would you summarize the reasons why this investment should be made even though Oregon's tax revenues are below past years?

A: The most successful companies have learned that in tough economic times they must make strategic investments to assure a brighter future. The same is true of countries and states. These recommendations bring together five unique features:

- (1) Economic benefit: A growing supply of highly educated technical talent allows Oregon employers to grow their businesses in the face of an increasingly competitive world economy. Investments in research provide Oregon companies the basis for innovative new products, help attract new businesses from out of state, and provide the genesis for start-up companies through technology transfer and "spin-outs."
- (2) Track record: Investments that started in 1997 have shown strong results.
- (3) Leverage: Private sources will provide \$1.60 for every \$1.00 in public funds. This represents an increase in both the total private investment and the ratio of private to public funds, in spite of the tough economic climate.
- (4) Accountability: ETIC has established a set of performance metrics for the upcoming biennium and will hold the participating institutions accountable to these metrics.
- (5) Teamwork: Industry and eight educational institutions jointly developed the plan for the upcoming biennium and are committed to its success.