

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

Campus: Portland State University

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Summary of Proposal:

The proposal reflects our ETIC funding plan for the FY07-09 biennium. It includes several components: continuing current initiatives in the ECE and MME departments; and support for Computer Science. Total operating request is \$7.60 Million. Additionally, up to \$2.3 million in Certificates of Participation will be issued to obtain laboratory equipment and make improvements to facilities.

Vision Statement

The strategic vision of the Maseeh College of Engineering and Computer Science, as recently adopted for our Advisory Board, is “to be the university of choice for high quality engineering and research leadership in partnership with industry, the public sector, and research agencies.”

Aspirational Peers

Determining appropriate aspirational peers for MCECS and our departments is difficult. The following institutions may be considered aspirational peers:

- University of Virginia
- University of Texas – Arlington
- New Jersey Institute of Technology

Long-term Goals

- Achieve 2X Goal in AY09.
- 111% increase in BS Degrees.
- 222% increase in MS Degrees.
- 475% increase in Ph.D. Degrees
- 1,389 % increase in externally funded research.
- Establish Ph.D. Degrees in all academic departments and receive an initial *US News and World Report* ranking for the College at 100.
- Maintain or improve PSU’s *US News and World Report* ranking as 4th best in Service Learning.
- Maintain or improve PSU’s *US News and World Report* ranking as 7th best in Learning Communities.

- Maintain or improve PSU's *US News and World Report* ranking as 12th best in Senior Capstone.
- Maintain or improve the ranking of our Engineering and Technology Management program by IAMOT as one of the top 50 global centers for research.
- Submit 15 Patent Disclosures, establish a new revenue flow of \$250k annually in License Revenue, and create 10 Spin-off Companies by 2020.
- Maintain a ratio of Private/Public Support through ETIC of 2:1.
- Full occupancy and utilization of the Northwest Center for Engineering, Science and Technology.

Investment Descriptions; Results & Benefits

Continuing Investments

During the five biennia of funding under ETIC, the Maseeh College of Engineering and Computer Science has made dramatic progress. Our faculty is larger and significantly improved in quality. Student credit hours, graduates and research continue to expand. Our facilities have improved. We now have four endowed positions. Two faculty members receiving ETIC support are NSF Young Investigators. And two ETIC supported faculty have prestigious NSF Career awards, one of which is a Presidential Career award.

\$5.1 million is requested to maintain current ETIC investments (the ETIC Baseline or EBL). This reflects funding for 16.60 FTE faculty and staff funded in all five academic departments and \$500,000 annually for Enrollment Services to recruit and retain students.

New Investments (Option Package)

MCECS is investing in two new faculty positions, one in the Mechanical and Materials Engineering (MME) department and one in the Electrical and Computer Engineering (ECE) department. \$750,000 has been allocated for each position for the biennium from the Option package.

The MME position is targeted to support both sustainability and materials (as part of the Materials and Manufacturing Research Institute, MMRI, funded by the Oregon Innovation Council at PSU). We are looking at candidates that have a Ph.D. in Mechanical Engineering or a closely related field, with research expertise that supports the department's growth in the area of energy and sustainability. Specific areas of interest include but are not limited to green buildings, energy efficiency, renewable energy, and environmental aspects of the built environment.

The ECE position is intended to support the Northwest Electromagnetics and Acoustics Research Laboratory (NEAR-Lab), which has already attracted over \$2M in external funding. The sensor applications are in areas of highest national priority and involve cutting edge technology (for example, the detection of explosive devices with terahertz imaging) thus ensuring a high likelihood for continued funding support. In addition to significant research funding, the NEAR-Lab has also formed critical partnerships with area institutions such as University of Washington,

Oregon Health and Sciences University, Oregon State University and Pacific Northwest National Laboratory – as well as with several local industries and other academic institutions (such as MIT).

Computer Science

Ten full-time Computer Science faculty members transferred from OGI to PSU in FY05, with an additional person joining in FY 06. By adding these faculty members to its CS department, PSU and the Maseeh College kept a wonderful resource for intellectual and economic development in Oregon. These new faculty members are now fully integrated into what was already a high-functioning department, one in which their skills are complementary with those of the pre-existing faculty, resulting in fruitful new research and educational collaborations. The department took the lead in submitting two proposals to the state's Signature Research Center initiative, and is very focused on producing high quality, economically relevant research and education.

The new faculty members are performing well, providing the basis for what we expect to be a nationally ranked program once the reputation of the blended department makes itself fully felt in the Computer Science community. The department's research expenditures were well over \$2 million in FY 05, and it is actively pursuing additional research funding in a wide variety of areas.

The University has provided resources in the form of faculty salaries and support for graduate students on an interim basis, but the difficult budget situation has prevented it from fully funding the initiative. In addition, \$647,000 in ETIC resources has been provided on a one-time basis. The cost of the program is a bit over \$500,000 per year. Given the importance of this initiative to the state, and the immense value being added by the faculty in the core area of ETIC's mission, \$1M in funding for this program has been allocated from the Option Package.

The two new positions and the partial CS support then is, \$750,000 + \$750,000 + \$1,000,000 or the \$2.5M of our Option Package (not including the COP funding).

Proposed Investment and Private Support Forecast (\$M)

2007-2009 Biennium	PSU POP	PSU EBL	PSU TOTAL
Proposed State investment (\$M)			
State Investment (\$M)	2.50	5.10	7.60
Certificates of Participation (\$M)	2.30		2.30
Expected private support (\$M) (3)	7.00	10.20	17.20
Total (\$M)	11.80	15.30	27.10
Personnel supported (FTE) (4)			
Existing faculty (1)	2.8	13.6	16.35
New faculty (5)	2.00	0.0	2.00
Existing staff (1)	0.0	3.0	3.00
New staff (5)	1.0	0.0	1.00
Total	5.75	16.60	22.35
Uses of proposed investment (\$M)			
New facilities, professorships, fellowships	2.00		2.00
Improvements to facilities	2.29	3.00	5.29
Laboratory equipment	2.51	2.00	4.51
Other equipment	1.00	2.00	3.00
Other one-time expense	0.12	1.00	1.12
Existing faculty salaries & benefits (1)	1.37	5.00	6.37
New faculty salaries & benefits (5)	0.06		0.06
Existing graduate assistants (1)	0.11		0.11
New graduate assistants (5)	1.21		1.21
Existing staff salaries & benefits (1)	0.41	1.30	1.71
New staff salaries & benefits (5)	0.06	0.00	0.06
Services & supplies	0.30	1.00	1.30
Debt Service	0.36		0.36
Total	11.80	15.30	27.10

Notes

(1) Hired through June 2007.

(2) Continuing expenses associated with ETIC investments made or faculty hired through June 2007.

(3) Consistent with ETIC Private Support Policy dated 1-23-02.

(4) FTE expressed as percent of full time over 2 years of biennium.

(5) To be hired with ETIC funds during 2007-2009 biennium.

Under Existing Faculty, 1 FTE in Computer Science and 2 FTE in Materials Engineering were not supported by ETIC in FY03-05 but are existing faculty in 05-07.

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

	Baseline	Projected (2)			
	AY 99 (1)	AY09	AY11	AY13	AY20
Undergraduate student credit hours	20785	32222	38167	42483	47332
Graduate student credit hours	8685	11746	14027	15663	17477
Bachelor's degrees granted	157	232	270	298	331
Master's degrees granted	105	176	222	252	284
PhD degrees granted	4	10	14	17	19
Externally-funded research expenditure	\$1.9M	\$7.70	\$12.10	\$16.50	\$24.2
Invention disclosures (4)			1	5	10
License/options (5)			2	6	12
License income received (6)			\$50K	\$75K	\$125K
Startup Companies (7)			2	5	7
National ranking of <program or department> (8)					
National ranking of <college>			100	100	100
IAMOT Top 50 - ETM		50	50	50	50
National Ranking - Computer Science				40	40
Notes					
(1) Actuals from 12 months ending June 30, 1999.					
(2) Forecast for the 12-month periods shown.					
(3) Total external dollars spent by ETIC-related departments towards research during academic year.					
(4) AUTM definition					
(5) Number of license or option agreements executed during the year. AUTM definitions.					
(6) Calendar year totals					
(7) New companies that were dependent on the licensing of your program's technology for their initiation. AUTM definitions.					
(8) Rankings equivalent to US News & World Report rankings based on two measures most impactful to the Oregon economy; PhD graduated and Research dollars					