

Engineering and Technology Industry Council Campus Investment Proposal Biennium from July 1, 2009 to June 30, 2011

Campus: Western Oregon University

Contact Name:

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Summary of Proposal:

The computer science division of WOU unanimously supports the following projects:

- To focus on the 2X goal for computer science undergraduates,
- To expand the current level of support for SuperQuest,
- Creation of a combined networking, forensics and gaming lab,
- To develop uniform curriculum for the current computer science transfer sequence,
- To create curriculum which would be distributed to high schools to promote computer science,
- To create and offer a certificate in Medical Informatics,
- To create a professional certification center.

Vision Statement

Our primary focus will always be to sustain the health and continued improvement of our computer science programs.

However, the computer science division has been increasing its role as collaborator with other disciplines here at Western Oregon. The creation of the Information Systems major allowed us to integrate components of the business curriculum. We are now in the final stages of a Masters of Management and Information Systems degree program which will strengthen our bond with the business division. We are investigating how to integrate important computer science topics into the existing criminal justice major. As the new nursing program matures we see opportunities for shared certificates and possibly newly defined minors.

The Western Oregon environment promotes extensive communication and interaction with other disciplines so we in computer science hear of a growing need from other disciplines to integrate computer knowledge and skills into their curriculum. We look forward to these future opportunities.

Aspirational Peers

Western Washington University computer science curriculum is similar to WOU and has many enhancements that we would like to develop in the near future at WOU. They have more faculty, a larger undergraduate class and a strong masters program.

California State at Stanislaus is a peer comparator for WOU and very similar computer science program. They have slightly more faculty and a similar size undergraduate class.

Eastern Washington University has a similar core BA/BS sequence with a variety of other computer science major-options. Larger faculty size, larger number of undergraduate majors and a masters program.

Long-term Goals

To be more widely recognized as a computer science program which responds to the IT industry. Our curriculum has long been directed towards serving the needs of industry (especially Oregon) with the outcome of obtaining meaningful jobs for our graduates.

We also look forward into an expanded role of integrating with related disciplines that need various levels of computing expertise.

Investment Description

- To focus on the 2X goal for computer science undergraduates,
For 09-11 biennium we request to continue with adjunct support and the creation of two (2) new tenure-track lines. This request responds to our largest threat and that is turnover of both adjunct and tenure-track faculty. This is a continued request in the area where we have been the most successful and cost-effective. Total cost of \$500,000.
- To expand the current level of support for SuperQuest,
Current support from WOU is approx. \$20,000 per session. We would like to increase to the amount to \$200,000. Collaborators would include Oregon CSTA, ETIC cstf, SAO TechStart. Funding would provide more locations, increased participants, stipends to encourage attendance and joint curriculum development sessions. This request responds directly to the future recruitment of computer science students (freshman and transfer). At this time a large number of the computer science instructors in the Oregon high school system are approaching retirement. We hope that SuperQuest can recruit and prepare the next generation of computer science teachers.
- Creation of a combined networking, forensics and gaming lab,
To modify existing building space to better (and more safely) accommodate a number of courses. Collaborators include Oracle, Cisco, Sun, and Microsoft. Projected cost of \$150,000.
- To develop uniform curriculum for the current computer science transfer sequence,

Joint task force for all OUS universities and community colleges. A continuation of the legislative intent for seamless course transition among the various OUS institutions. A greater focus on the exact curriculum and outcomes expected. Total cost approx. \$50,000.

- To create curriculum which would be distributed to high schools to promote computer science, This would require workshops, release time, facilities and lab devices. Involve select group of high school educators and release curriculum through the SuperQuest platform. \$250,000. Collaboration with ODE, high school computer science instructors, CSTA, and ETIC cstf.

- To create and offer a certificate in Medical Informatics, To implement particular courses we may need to hire specialist instructors. Cost for the biennium of \$50,000. Will collaborate with the OHSU nursing program, Salem Hospital and private medical practices for courses and internships.

- To create a professional certification center. Dedicated hardware, lab space and training would be necessary. Collaborators would include Microsoft, Cisco, Sun, and Oracle. To better prepare future graduates with professional certifications. Total cost approx. \$100,000.

Private Support

Through the industry collaborators that have been mentioned Microsoft, Cisco, Sun, Oracle and others which will be approached we expect an industry investment of \$300,000. These investments would be in hardware, software and or training stipends.

Results and Benefits

Short-term

Through the faculty hires we expect to see continued growth in computer science and other related undergraduate disciplines which are integrating more computer science courses into their degree programs. We also see an expansion with the Masters degree we share with the business division where a large number of those students are expected to be Chinese nationals.

With the support of SuperQuest we hope to train faculty in the Oregon high schools so that they can excite their students about the discipline of computer science and related careers. We may see the results of those efforts by as early as fall 2011.

With our current growth in the curriculum areas of data integrity/forensics, gaming, and networking we are at a limit for lab space. We have a temporary solution for this next biennium. This upgrade and better use of resources would enhance both retention and recruitment of our students.

The current transfer agreements are focused on a numbering scheme with some agreement as to content. It may not be possible to target explicit environments or languages but outcomes could be described and agreed to for all the transfer courses. This adoption would benefit students that take college courses in high school and those students that transfer between our university units.

Development of specific high school curricula which would provide an easy transition for a current high school teacher to cross into the discipline of computer science. We propose to use SuperQuest sessions

for delivery. Creating these new teachers would provide new recruits for computer science programs and related.

Development of the Medical Informatics certificate program is a natural transition with the arrival of the nursing program and with the national recognition of the need for computer scientists with an understanding/knowledge of the new medical records act. This proposal responds to requests from the OUS system and the governor's office.

To aid in the preparation of our current students professional certifications would be a positive addition to their knowledge base and resume. Certifications could also recruit two- year students to our four-year program.

Medium-term

By the sequence of our proposals you can see that teaching and the 2X expansion is our top priority and really our best strategy. As faculty our number one assigned task at WOU is teaching, which we do very well. The additional hires would increase the number of classes which then promotes growth in the majors and finally provides more graduates which will ultimately benefit the Oregon IT industry. Other projects we define relate to the retention of current students by creating better labs, transfer agreements and professional certificates.

Finally the remaining projects, SuperQuest and the high school curriculum, relate to the educating and recruitment of high school students for the university system.

Future Plan & Resources

If the projects for high school development are successful then we should expect an increase in available high school graduates that we would like to attend WOU. To recruit these students we need a university solution regarding the allocation and awarding of scholarship dollars for computer science. With the cross discipline involvement we hope to gain recognition for the importance of our discipline and receive the appropriate scholarship allocations.

With the additional faculty in place we hope to see a thriving undergraduate program which is self-supporting by tuition dollars and an equally successful masters program which is also fully staffed and self supporting.

Proposed Investment and Private Support Forecast (\$M)

		2009-2011 Biennium
1	Sources of funds	
2	Base budget for ETIC-related programs – all sources except ETIC allocation & private support	\$ 0.75
3	Proposed allocation from ETIC budget (\$M) (3)	\$ 0.25
4	Expected private support (\$M) (4)	\$ 0.30
5	Total (\$M)	\$ 1.30
6	Personnel supported (FTE) (5)	
7	Existing faculty (1)	4.0
8	New faculty(2)	2.0
9	Existing staff (1)	0.0
10	New staff(2)	0.0
11	Total	6.0
12	New positions created (6)	
13	Faculty (2)	0.0
14	Staff (2)	0.0
15	Total	0.0
16	Uses of ETIC funds in line 3	
17	New facilities	\$ -
18	Improvements to facilities (7)	\$ 0.25
19	Laboratory equipment (7)	\$ -
20	Other equipment (7)	\$ -
21	Other one-time expenses	\$ -
22	Existing faculty salaries & benefits (1)	\$ -
23	New faculty salaries & benefits (2)	\$ -
24	Existing staff salaries & benefits (1)	\$ -
25	New staff salaries & benefits (2)	\$ -
26	Services & supplies	\$ -
27	Other	\$ -
28	Total (8)	\$ 0.25
	Instructions. (Replace with your own notes in the document you submit.)	
	(1) Hired through June 2009 that will be supported by ETIC funds during 2009-11	
	(2) To be hired with ETIC funds during 2009-2011 biennium.	
	(3) Include any Certificates of Participation to be issued during 2009-2011	
	(4) Consistent with ETIC Private Support Policy dated 1-23-02.	
	(5) FTE expressed as percent of full time over 2 years of biennium. For instance, a new full-time faculty member hired on 7/1/10 would be counted as 0.5 because he/she joined half way through the biennium.	
	(6) FTE on an ongoing basis. For instance, if a new half-time position is created but not expected to be filled until the last month of the biennium, it would still be counted as 0.5.	
	(7) Include improvements and equipment to be purchased with ETIC funds and any Certificates of Participation to be issued during the biennium.	
	(8) Totals on line 3 and line 28 should match.	

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

	Actuals (1)		Projected (2)		
	AY 99	AY07	AY11	AY13	AY20
Undergraduate student credit hours	7170	6372	12600	13230	13891
Graduate student credit hours	0	0	600	700	800
Graduation rate, 6-year (3)	0	est. 12	30	35	40
Bachelor's degrees granted	40	14	58	61	65
Master's degrees granted	0	2	20	25	30
PhD degrees granted	0	0	0	0	0
Women graduating (4)	9	2	12	15	18
Minorities graduating (5)	5	0	4	8	12
Externally-funded research expenditures (6)	0	\$15	\$25	\$30	\$50
Invention disclosures (7)	0	0	0	0	0
License/options (8)	0	0	0	0	0
License income received (9)	0	0	0	0	0
Spin-off Companies (10)	0	0	0	0	0
National ranking of <program or department> (11)					
National ranking of <college>					
(12)					
Notes/instructions. (Delete these notes and replace with your own in the document you submit.)					
(1) Actuals for 12-month period ending in June of the year shown.					
(2) Forecast for the 12-month period ending in June of the year shown.					
(3) Percentage of students who started ETIC-related program six years earlier who have completed bachelor's					
(4) From engineering, computer science, and other programs directly benefiting from ETIC funding, stated as percent of all those graduating.					
(5) Racial and ethnic minorities who are US citizens or permanent residents, stated percent of US citizens or permanent residents graduating.					
(6) Total external dollars spent in thousands.					
(7) See Association of University Technology Managers (AUTM) survey definitions.					
(8) Number of license or option agreements executed during the year. See AUTM survey definitions.					
(9) 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.					
(10) New companies that were dependent on the licensing of your program's technology for their initiation. See AUTM survey definitions.					
(11) Forecasts for multiple programs and departments are encouraged. Each ranking should be footnoted with the ranking body or ranking methodology.					
(12) Add additional metrics as appropriate.					