W A S H I N G T O N
# HIGHER
# EDUCATION
## COORDINATING BOARD

**PRELIMINARY BOARD MEETING AGENDA**
Clover Park Technical College, Bldg. 3, Rotunda
4500 Steilacoom Blvd SW, Lakewood 98499
**July 28, 2009**

**9:00 a.m. – 2:00 p.m.**
**Regular Board Meeting**

|  |  | *TAB* |
|---|---|---|
| **9:00** | **Welcome and Introductions**<br>• *Jesus Hernandez, Chair*<br>• *John Walstrum, President, Clover Park Technical College* | |
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| | Consent Items<br><br>**Approval of June 23, 2009 Work Session Notes** | **1** |
| | **New Degree Programs for Approval**<br><br>• **Bellevue College,  BAA in Interior Design**<br>   *Resolution 09-08*<br><br>Bellevue College seeks approval to offer a Bachelor of Applied Arts in Interior Design degree beginning winter 2010. The program would respond to changes in the accreditation requirements for interior design programs. Bellevue College is one of seven community and technical colleges authorized to offer bachelor's degrees in the state. | **2** |
| | • **UW Seattle, Bachelor of Paramedicine**<br>   *Resolution 09-09*<br><br>The University of Washington seeks approval to offer a Bachelor of Paramedicine degree, beginning fall 2009.  The new degree offering would respond to a recommendation by the Commission on Allied Health Education Programs that "*students who commit to the time and academic rigor of this program should receive the academic recognition they deserve."* | **3** |

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| | | • **UW Tacoma, BS in Information Technology and Systems**<br>*Resolution 09-10*<br><br>The University of Washington Tacoma seeks approval to offer a Bachelor of Science in Information Technology and Systems degree beginning fall 2009. The program would prepare students for graduate studies or careers in fields such as systems analysis, database administration, and security and information assurance. | **4** |
| | | • **UW Bothell, MS in Computing and Software Systems**<br>*Resolution 09-11*<br><br>The University of Washington Bothell seeks approval to offer a Master of Science in Computing and Software Systems degree beginning fall 2009. Graduates would be prepared for careers in software engineering, systems analysis, computer programming, software project management, and related occupations. | **5** |
| | | • **WSU, BS in Athletic Training**<br>*Resolution 09-12*<br><br>Washington State University has submitted a Moderate Degree Change proposal to convert an existing Athletic Training option within a Bachelor of Science in Kinesiology degree into a Bachelor of Science in Athletic Training degree beginning fall 2009. WSU would make the change, which is essentially only a name change, in response to a requirement from an external accrediting body, the Commission on Accreditation of Athletic Training Education. | **6** |
| | | • **WSU, BS in Economic Sciences**<br>*Resolution 09-13*<br><br>Washington State University has submitted a Moderate Degree Change proposal to consolidate four existing economics degrees into a single Bachelor of Science in Economic Sciences degree with seven options beginning fall 2009. Like the existing degrees, the proposed degree would be housed within the School of Economic Sciences. The proposed change is substantively an administrative relabeling to more accurately describe what the School of Economic Sciences offers. | **7** |
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| **9:15** | | <u>Education Committee</u><br>*Sam Smith, Chair* | |
| | | **New Degree Program for Approval:  UW Bothell,  BS in Electrical Engineering**<br>*Resolution  09-14*<br><br>The University of Washington Bothell seeks approval to offer a Bachelor of Science in Electrical Engineering degree beginning winter 2010.  The program would prepare students for graduate studies or careers in electrical engineering and related occupations.<br><br>**PUBLIC COMMENT** | **8** |
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| **9:45** | **Economic Vitality/GMAP Report** | **9** |
| | • *Egils Milbergs, Executive Director, Washington Economic Development Commission*<br>• *Dan McConnon, Assistant Director for Community Services, Washington Department of Commerce*<br>• *John Lederer, Associate Director, HECB*<br><br>The HECB and Washington's higher education institutions are engaged in many activities to promote economic vitality in our state. This panel highlights two organizations in state government leading strategic planning and measurement of growth and innovation in our economy—the Washington Economic Development Commission and the Evergreen Jobs Leadership Team. The HECB is one of ten agencies contributing to the Governor's Economic Vitality dashboard, part of her Government Management Accountability and Performance program. | |
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| **10:45** | Report of the Executive Director<br><br>**Status Reports and Policy Connections**<br><br>• **System Design Plan**<br>The System Design Plan is intended to lay the policy and structural foundation for meeting the near-term and long-range goals of the state's master plan for higher education.<br><br>• **Tuition Study**<br>Under legislative direction, the HECB and higher education stakeholders are conducting the Tuition Flexibility Study, which will review tuition policy and tuition rate options for resident undergraduate students in public institutions. This effort will result in a policy recommendation for the Legislature and Governor's consideration due to be delivered by November 1, 2009. The tuition policy recommendation must support the goals of access, affordability, and academic quality as outlined in the 2008 Strategic Master Plan.<br><br>• **Four-year Performance Agreements / Institutional Accountability Targets**<br>The budget provides additional direction to implement the current law on performance agreements (RCW 28B.10.920 - .922) by requiring the State Performance Committee and each public four-year institution to develop performance agreements for the period Sept. 1, 2009 through June 30, 2015. Report due 12/01/09.<br><br>• **College Access Portal Plan**<br>SSB 5043 calls for the HECB to convene a workgroup to develop a plan to create a one-stop college information web-based portal for students and families planning, preparing, and applying for, as well as those attending, postsecondary institutions. | **10** |
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| **12:00** | **Recess for Lunch** | |

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| **1:00** | **Performance Audit of Four-year Institutions** |
| | *Ruta Fanning, Legislative Auditor, Joint Legislative Audit and Review Committee (JLARC)* |
| | HB 2344 requires JLARC to complete a performance audit of the four-year institutions to create a transparent link between revenues, expenditures and performance outcomes as outlined in RCW 28B.10.920 and in the 2008 Strategic Master Plan for Higher Education. Report due 12/01/10. |
| **1:30** | **Two-year Performance Targets** |
| | *Jan Yoshiwara, Deputy Director, State Board for Community and Technical Colleges (SBCTC)* |
| | Jan Yoshiwara will discuss performance measures for the two-year system and possible alignment between these measures and those currently used in the SBCTC's student achievement initiative. |

## 2:00 – 4:00 p.m.
## Joint Meeting with the State Board for Community & Technical Colleges

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| **2:00** | **Welcome and Board Introductions** | |
| | • Jesus Hernandez, Chair, Higher Education Coordinating Board<br>• Jim Bricker, Chair, State Board for Community and Technical Colleges | |
| **2:15** | **Collaborative Initiatives between the HECB and SBCTC**<br><br>• **Strategic Master Plan for Higher Education**<br>• **Washington Higher Education System Design Plan**<br>• **SBCTC Mission Study**<br>    ➢ **Long-term Vision for Applied Baccalaureates**<br><br>SBCTC Executive Director Charlie Earl will report the preliminary findings and direction of a community and technical college systemwide task force, analyzing the educational and economic needs of the state and how the state's two-year colleges can best meet them cost effectively. | |
| **4:00** | Public Comment and Adjournment | |

**Meeting Accommodations:** *Persons who require special accommodation for attendance must call the HECB at 360-753-7800 as soon as possible before the meeting.*

## HECB Meetings

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| **August 27, Thursday**<br>**8:00 – 5:00** | **Board Retreat** | **SSCC Georgetown Campus**<br>**Gene J. Colin Bldg.** |
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| **September 29, Tuesday**<br>**10:00 – 12:00** | **Advisory Council Meeting** | **Seattle University**<br>**Student Center 160** |
| **September 29, Tuesday**<br>**1:00 – 4:00** | **Regular Board Meeting** | |
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| **October 27, Tuesday**<br>**10:00 – 12:00** | **Advisory Council Meeting** | **UW Tacoma**<br>**Student Assembly Hall** |
| **October 27, Tuesday**<br>**1:00 – 4:30** | **Regular Board Meeting** | |
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| **November 19, Thursday**<br>**10:00 – 4:30** | **Regular Board Meeting**<br>*(joint meeting with WTECB,*<br>*10-12 noon)* | **Renton Technical College**<br>**Business Technology Bldg**<br>**(H103-104)** |
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| **December 15, Tuesday**<br>**9:00 a.m. – 12:00 p.m.** | **Regular Board Meeting** | **Highline Community College**<br>**Bldg. 8, Mt. Constance** |

## System Design Plan Meetings

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| **September tbd** | **9 :00 – 3:30** | **tbd** |
| **October 19, Monday** | **9 :00 – 3:30** | **Pierce College Puyallup**<br>**Multi Purpose Room A**<br>**College Center Bldg** |
| **November 19, Thursday** | **1:00 – 4:30**<br>**HECB Meeting**<br><br>**(The Board is scheduled to take action on the System Design Plan)** | **Renton Technical College**<br>**Business Technology Bldg**<br>**H103-104** |

# Notes from June 23, 2009 Board Work Session

## Board members present

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| Jesus Hernandez, Chair | Earl Hale, Vice Chair |
| Charley Bingham | Bill Grinstein |
| Ethelda Burke | Nita Rinehart |
| Roberta Greene | Sam Smith |

## Executive Director's Report

- A **new student Board member** has been appointed by Gov. Gregoire effective July 1, 2009. **Andrew Helm**, who is studying for a doctorate in pharmacy at Washington State University, and is a member of the Washington Student Association, will replace Sasha Sleiman of Wenatchee, a Western Washington University student who completed two successive one-year terms in June.

- The members of the **Governor's Cabinet** held a retreat in June. Gov. Chris Gregoire spent most of one day participating in a break-out discussion about the future of education and indicated strong support for continued efforts to move forward on all aspects of the Washington Learns initiative.

- The **System Design Plan** work, which began earlier this year, is proceeding on target to meet its deadline for delivering a preliminary draft report to the Board in October. The Plan will provide a roadmap for achieving Strategic Master Plan goals of increasing degree attainment, including policy recommendations on where and when to expand postsecondary education degree programs and facilities and how to use technology to increase access and improve teaching and learning.

  The design plan study group met June 15. The focus of the meeting was how to reach students who have attained a GED, high school diploma, transfer degree, or other levels of postsecondary education but have not progressed through the system.

  The study group's next meeting is 9:30 a.m. to 3 p.m. July 20, at Everett Community College. The group will consider the mission of higher education, how the system is funded, and what programs cost, alternative delivery options, and various options for delivering expanded undergraduate and graduate programs, including feasibility and costs.

- The HECB is working to implement a new law that requires the **relabeling of financial aid** as *opportunity pathways*. The agency also is preparing a report with recommendations on how to implement a **web-based student financial aid information portal**. A report is due to the Legislature in December 2009.

- The **College Bound Scholarship** sign-up campaign passed a milestone recently with more than 41,000 students now signed up. The program will continue accepting students eligible this year until June 30.

- Daley and Charley Earl, SBCTC executive director, have been appointed members of the Governor's new **Aerospace Council**, which is being chaired by the director of the Department of Commerce (formerly CTED). Also serving on the Council will be Elson Floyd, WSU president; Mark Emmert, UW president and business and government leaders.

**Board Work Session**
To kick off the work session, Daley asked Board members to think about how the Board might meet its responsibility to be a thought leader for higher education. The HECB has been assigned to produce or participate in the development of a number of high level reports and plans due by the end of this year: a System Design Plan; a Tuition Study; a Technology Transformation Task Force; financial aid initiatives; and performance agreements.

Approached from a broad and high level perspective, Daley said this work offered a unique opportunity for the Board to articulate a new vision for public higher education in Washington – one that could garner greater public and legislative support for achieving core goals such as increasing degree attainment and meeting the growing needs of under-represented populations and adult workers. She urged Board members to think holistically about the most important and over-arching elements of this work in creating such a vision.

**K-12 Initiatives**
Jesus Hernandez, Board chair, stated that K-12 engagement was one of the central challenges facing the state. An accountability framework is needed to make sure that K-12 students are receiving the type of encouragement and support needed to get them to focus in much greater numbers on entering postsecondary education, not as an option beyond high school, but as a necessary element in their preparation for life, both in the workplace and as citizens. Leveraging federal dollars to support college-going programs and demanding accountability for this should be an important element of this effort, he said.

Nita Rinehart, Board member from Seattle, added that much more also needs to be done in the early learning arena to prepare students to succeed in primary and secondary education. Funding for programs like Running Start, which allow students to begin taking college courses while in high school, also is needed, said Charley Bingham of Tacoma. The cost of this program is now being absorbed by the community and technical colleges. Separate funds are needed to maintain and expand it, he said.

Daley said the HECB's work last year on K-12 connections had stressed the importance of this effort and of increasing the level of collaboration among postsecondary education institutions and the schools. Several meetings already have been held with the new Superintendent of Public Instruction in an effort to spur work on these recommendations, and Daley noted that the need to expand K-12 initiatives would factor significantly in the development of the System Design Plan.

She then urged Board members to think about developing a long-term reinvestment strategy for higher education that would permit new and expanded work not only with the K-12 system but also with many other initiatives, and asked the Board to focus on a set of guiding questions associated with this broader arena of work.

*What is the purpose of a publically funded higher education? We seem to be incrementally moving away from using public money to educate our citizens. What are the implications of this? Four of the state's six baccalaureate institutions will receive more operating revenue from tuition and fees than they do for the state in the coming biennium -- the first time in history this has occurred. Have we truly crossed the Rubicon, as some have suggested? Is there no turning back? Are we on the road to a privatized funding model for higher education?*

**Jesus Hernandez**
To what extent is funding in higher education comparable to what is happening in health care? The demand is there, but we have not figured out how to fund it.

**Nita Rinehart**
There is a perception higher education is a private good and elitist. This is where higher education could be a bit schizophrenic. We need to focus on the demographics of our society when we talk about higher education… and emphasize pathways to success, not pipelines.

**Sam Smith**
We *are* creating an elite system. The most profound predictors of college success are the presence of an educated parent and family income. We are not yet aware enough of the changes occurring in educational technology (that can increase access to higher education). Unless we recognize that *how* higher education is delivered is now *fundamentally different*, we will not be supported by the people and the state. We need to figure out how to engage many more lower-income citizens with no history of education in their families.

**Bill Grinstein**
The focus needs to be on programs to support inclusion. Everything about the Strategic Master Plan was designed to communicate about higher education as a public good and to illustrate the changing needs of our society. We saw K-12 as a partner and we have to maintain this as a focus. The issue of pubic good versus private gain is important. The real issue in health care is that there are millions of people who want to be covered who are not able to get coverage. There is no question that a healthy population is in the public interest, especially when you consider the cost to society of unhealthy people. The same is true for higher education – but it may not be as evident. We won't win the public's support if we don't focus on higher education as a public good.

**Charley Bingham**

There *are* a large number of people in our society who are not being served by higher education. But with the changes in technology now (we could and should be serving them). We are not using technology to deliver education to the extent that we should. Unless we recognize this and expand its use to reach more people, we will not be supported by the people of the state. We need to know what the public will pay for. We are led to believe there are huge obstacles that will lead us to demands for even more bricks and mortar, more seat time. We are failing to recognize that children today are different (in their use of technology).

**Ann Daley**

That is exactly why we are doing this. We need to develop a public higher education system that people will support.

**Jesus Hernandez**

Do we start with funding?

**Nita Rinehart**

You have to decide who you want to educate first.

**Sam Smith**

We have to be able to measure outputs. If our goal is to produce more degrees – well, we don't pay for this. We pay for enrollments. We need to take the next step.

**Nita Rinehart**

We agree a public education is a public good. If we start from there as a system, and we understand the demographics and what people are willing to pay for, as coordinators we could be helpful in making technology more available.

**Roberta Greene**

Do we need to step back and help others believe education is a public good? Are we losing that battle? Do people really believe it's a public good?

**Earl Hale**

This last legislative session was more about institutional needs and public agendas. Institutions need to place themselves in the position of meeting public needs. There was a greater level of support (in the legislature) for the community college approach.

**Terry Teale, Executive Director, COP**

We (the four-year institutions) spent six years working on the concept of performance agreements. We had a conversation with the state about what it would take to meet state needs. We spent last summer working hard. But in this legislative session, we saw no interest in this process. This is a process that is based on outcomes…on matching them with public needs. In my mind we do not take advantage of the structure we have now.

We have to come together as a state. I think we have to get serious about performance agreements before we make a transition to a new funding model. Are we positioned to do what the strategic master plan says? If not, then we have to tweak these agreements. Once we have decided, then each institutions needs to step up and deliver.

Are we right-sized in bachelor's degree opportunities vis a vis branch campuses? (Will the branch campuses have enough capacity to be able to help the state meet bachelor's degree production goals?) What role will applied baccalaureates play? What do we need to do across the board? What are the missions of the CTCs? We will have to get very structural in this process. Maybe we need another university in the Puget Sound area. It is unlikely that we will be able to decommission institutions, since they are well established serving specific needs.

### Bill Grinstein
Performance agreements only work if they are outcome-based – not a process. There has to be alignment between goals we are measuring. On technological innovation: "how can we add more students" is the wrong discussion element. Instead, we should be focused on the transformational application of technology across the system. Sam has given us example after example. Do we see this same level of excitement in ongoing academic programs?

### Sherry Burkey, Director of Government Relations, WWU
We have made every effort to deliver what the state wants at WWU. Business leaders, Prosperity Partnership, legislators, schools, those representing emerging, knowledge-based businesses all have participated. And we linked our planning to Washington Leans and the Strategic Master Plan. I don't think outcomes had anything to do with the budget cuts we experienced this session. I think the lack of resources forced the legislature to cut the budget.

We described the problem as needing more bachelor's degrees. We need a system that allows the four-year institutions to be more innovative.

### Ann Daley
That illustrates my point. We have traversed some difficult ground. Maybe we need to rethink how higher education is treated in the budget process. It is widely acknowledged as the most discretionary part of the state's general fund. We shouldn't allow that to be stated. We are caught in the same short-term funding cycle if we do.

### Bill Grinstein
Have we defined a return on investment? We made a good start with the Strategic Master Plan. We were asked by the legislature to refine and justify degree goals. Whether there is full acceptance of the idea of public good may be linked to how we define return on investment in the context and framework. You get what you pay for.

### Charley Bingham
Still, I have a different view. We need a massive campaign to educate the state. We have a great strategic master plan, but we never step back and say "What would it cost to make it happen."

### Sam Smith
We have discussed the problem, not the solution.

**Roberta Greene**
We crafted a good strategic master plan. Have we ever said to the four-year institutions "How can you help us?" Is this in the capacity study? Do you feel you have done enough of the work to encourage innovation?

**Sam Smith**
There is no incentive to innovate.

**Jane Sherman, Vice Provost for Academic Policy and Evaluation, WSU**
We are efficient. Every biennium we get nibbled and yet we are still flying the airplane. It is hard to find the dollars to do innovative things. We aren't being asked: How many students could you serve if you had the dollars to do it?"

**Ron Dalla, Vice Provost, Graduate Education, Research, Academic Planning and Evaluation, EWU**
How do we get to where we are moving the blue arrow? Innovation costs money. How can we serve the students we have when we are faced with increasing enrollments and downsized budgets and a desire to maintain quality? We need to be saying: "Here is the money it takes to do this."

**Bill Grinstein**
The purpose of System Design Plan is to raise the money to do this – to focus on independent variables.

**Doug Wadden, Executive Vice Provost, UW**
You can't have accountability without investment. We turned down 2,000 students at the University of Washington we would have accepted last year. We don't know what it means to be a system relative to funding.

**Terry Teale**
I am thinking more about the structural aspect of system design – the notion of flexibility. I don't want duplication. We (four-year institutions and two-year institutions) have structurally very different systems. The two-years are open access; we are restricted. We have to beg to get enrollments. We are not designed to turn on a dime. We need to stop being conflicted about what we want. If we want restrictions – that can be part of the structural conversation we have to have. There are some things the community colleges have added to their mission – more workforce, less transfer – that should be on the table. How do we address this? If they focus more on transfer, will the students be there to accommodate?

**Jesus Hernandez**
How do we create adequate demand at the K-12 level? How do we position higher education to receive stable funding?

**Jan Yoshiwara, Deputy Director, SBCTC**
We (the two-year institutions) are very focused on the question of how to transfer more students. We support the goals of the master plan. One way to accomplish this is to place a greater share of those who are already there – there is tremendous potential if we do this. Increasing capacity at the universities is of high interest for us.

**Ann Daley**
We understand that we need to ensure adequate funding – and that we need to get sharper in stating this case. We addressed stimulating demand extensively in our work last year. We have a significant amount of work ahead us and five months to get it done – designing a system for postsecondary education. We have an opportunity to develop a vision coming from the HECB by the end of this year. Our work involves major studies on tuition and technology.

**Charley Bingham**
It is important that we appreciate the enormity of the problem the Legislature was faced with this year. (But in a larger sense as we consider resource allocation) who is our audience? Is it the public at large?  Is it legislators? The idea that "I can't innovate unless you pay me" is disingenuous. (To make progress in funding, more focused communication is needed about the importance of higher education). Each community needs an advocate. Each community needs a headline. What are the many things higher education contributes to each community: (workforce; leadership; economy; social stability; school programs)?

**Ann Daley**
We need your engagement on the overlapping connections of the work ahead of us. We need to assess what the larger vision is if we take all of them together. Help us think about these overlapping questions: funding; innovation; meeting community needs; meeting individual needs.

**Earl Hale**
Price counts. If we're talking about system access we need to take a look at how much tuition will be needed to get capacity up at the branch campuses. When we are looking at demographics in the master plan, we look at the emergence of low-income students.

**Ann Daley**
The work we are doing on differentiated tuition significantly overlaps with the system design study -- branches versus main campuses.

**Nita Rinehart**
The foundation of our work – our vision - has to be student centered.  Students are affected by all aspects of the decisions we make: financial aid, price, access, technology. In terms of students who are not served we need to be very careful…instead of looking at tuition from a marketplace view we need to consider how rising tuition affects someone's career decision or life. In every single one of these areas, we should always think about the impact to students and individual decisions.

**Terry Teale**
Does price matter everywhere? Should we try to make one standard price? Price matters less now that we have the student promise programs.

**Doug Wadden**
At the University of Washington we know for a fact that when we raise tuition in certain programs, enrollment *increases*. Pricing is a fluid strategy. We need to look at what other states are dong about revenue and tuition. Differentiated tuition by geography, by institution, by income?  Is price differentiation an indicator of quality?  I don't believe it should be, but perceptions about this are strong.

**Bill Grinstein**
Sixty percent of bachelor's enrollments are at WSU and UW. There are those who say these campuses will play a part in educating the increased numbers of students we'll have to accommodate to meet master plan goals. This is not true. We say growth will be *primarily* at branch campuses and centers. Capacity, technology, tuition, market demand all need to be integrated.

**Jan Yoshiwara**
About half of the students at the community and technical colleges go part time and have been paying as much as 50 percent more for a degree than their full-time counterparts.  We have been attempting to close the gap between full-time and part-time. It is about 25 percent now.  We are moving it slowly over time. Part time students will grow as a percentage of all students. It's a fairness issue – especially for those students who are working and trying to pay their way.

With respect to the pricing of online courses, it is not less expensive to produce these courses. From a time perspective, the instructors often find themselves having to be available 24/7 to answer questions – because they have a relationship based on access. If pricing sends a message about value, perhaps online courses should cost more!

**Sam Smith**
Online courses are less expensive to deliver but more expensive to develop. Development is a key component of cost.

**Nita Rinehart**
State tuition policy as it exists does not work to encourage the state's funding of operations.

**Ann Daley**
Tuition is set by the Legislature. Prior to this year, the law stated that tuition should not go up more than seven percent annually. It doesn't matter who sets tuition when we face serious shortfalls. Higher education is looked at as having a 'revenue source' to solve the problem. There is a connection between state funding and tuition. The Legislature established the 7 percent ceiling on increases as part of a broader strategy to raise operations funding to the average level of comparable Global Challenge States.

**Nita Rinehart**
Some work needs to be done to counteract the idea that higher education has its own source of revenue. It's the students and families who are the ones paying. The Legislature is free to use its discretion on tuition because there is no unified voice. We need to recognize that a common voice for higher education is not going to happen unless everyone gives up a little to get a little.

**Ann Daley**
The tuition bill passed this session (14 and 14) was one of the closest votes in the session. One can conclude from this that the Legislature will not want to do this again soon. There is a natural dampening of the desire to use tuition in a recession and we won't probably see big jumps in the future. We also have the basic education funding lawsuit to resolve. There are a lot of pressures – most on the downside.

**Terry Teale**
If the state is saying there is not enough money to fund higher education as it has in the past, what does this mean? Less educational opportunity than in the past….or public/private funding models? UW is of a size and nature to do something else (regarding funding). This is exactly the conversation we should be having.

**Jan Yoshiwara**
Pennsylvania and Virginia have worked out systems in which there is a public-private mix. As state support declined it became a mix. The Health Science Center was operated privately and the rest of the programs publicly.

**Ann Daley**
There is a huge overlap between system design and funding.  What type of overlap issues exist between tuition and technology?

**Jan Yoshiwara**
Student demand for online learning (in the community college system) is more about time than location. It is bi-modal, driven primarily by the time constraints placed on working adults. There are younger students who also are flocking to online courses because they are digital natives.

**Jane Sherman**
At WSU we think of online education as an integral delivery mode, not supplemental.  We think of it as part of our infrastructure and now include online instruction/services (as part of the budget) so students can get all of it without coming to campus.  There is about 20 to 30 percent growth in online course enrollment per year, with 15 percent of our total FTE online (20,000 FTE).  In hiring new faculty it is understood that they will be required to teach online. There is a great deal of faculty development/faculty learning involved in growing an online program.

**Sam Smith**
How do we take advantage of it? How do we harness it?

**Jane Sherman**
So many different approaches are possible. Each institution serves different population.  WSU is driven not by time, as Jan Yoshiwara noted, but by distance. A high proportion of our online

learners are far away . . . many are women, most in their 30s. At the University of Washington, however, the profile of online learners is completely different.

**Earl Hale**
Technology is changing in ways we can't get our heads around.  It is now old-fashioned to sit in front of a laptop.

**Bill Grinstein**
Getting timely information quickly is necessary.  In terms of the options we have – how we gather this, animate it, analyze, and integrate it. Time is of the essence.

**Nita Rinehart**
The public perception is probably 'sitting at laptops." We should be saying: "Here's a great opportunity to use technology in a valid way…"

**Roberta Greene**
Is it necessary to spend money to enlarge online programs? (Isn't the material out there already and can't it be obtained through cooperation or sharing)?

**Sam Smith**
UW is doing well cooperating.  Many elements can be contracted out. (Sam provided examples drawn from Wacovia, which offers ready-made courses in core subjects).

**Ann Daley**
We have a lot of work to do in a short time and complex issues to address. We haven't talked about accountability. I'd like to suggest we end by stepping back and posing this challenge: write three to five key recommendations to assert we are leaders in the conversation. With respect to the performance agreement piece, the HECB is represented on a committee and later this year we will report back to the Legislature on what we have learned. This is another opportunity for us to do more than what is in the statute – to address state resources in the context of expectations.

**Roberta Greene**
1. Public higher education is essential. We need to address this at the community level. (When Roberta talks with her counterparts in Spokane she finds that too few people know how higher education benefits the community). People say: "No one has told me about this."  We need to make them own the problem.  Our neighbors need to own it.

2. Tuition differentiation.

3. Applied baccalaureate degrees at the community and technical colleges.

4. Better use of space. Sharing agreements with private institutions – we have public space available if you want to use it at these times.

**Charley Bingham**
1. We need a system design that's (responsive) to population growth. We have spent a lot of time on this – how we visualize the system being redesigned. We need, however, to integrate the technology as we implement the plan. The technology effort is very important. We need to merge as much of that work into the system design plan as possible.

**Sam Smith**

We have outlined about seven stages of development leading to a new campus. These are online learning, centers, 2 + 2, etc. We are incorporating these into rational rules for growth. We will integrate this work with our recommendations on tuition policy and performance contracts.

**Nita Rinehart**

Public policy making isn't rational – if our real goal is to impact the development of higher education – to create a vision – the message needs to be persuasive. This must start at the community level. How can we help the Legislature to acknowledge the public good in higher education?

**Bill Grinstein**
1. Identifying student needs – current and future – the same as in the master plan except this plan will have an allocation model.

2. Rational rules for growth. As we grow we add facilities or programs.

3. Outcomes. There needs to be flexibility to make decisions about resource allocations. The system has to be able to govern itself.

4. Advocacy for this. I would like to see a campaign with spokespeople. The campaign needs to be integrated with the work. We need to identify who the advocates are/who and what will be persuasive to the Legislature.

**Earl Hale**

Ann you have 120 percent of what you need. All of these things need to be thought about and talked about (with the study group and others). We need to ask ourselves if the benchmarks in the master plan are still realistic. We could serve as a convener of a meeting for Legislators on how to get them through the next six to eight years. It could be low-key in Olympia.

**Ann Daley**

We are at a point in our fiscal situation in our aspirations where leadership is essential – let's not squander this opportunity. When the day is done, we'll have more ongoing conversations. But by December we have to roll up these conversations into a vision that will move the needle forward for higher education.

**Jesus Hernandez**

If we knew the full relationship between differentiated tuition and the cost of producing degrees, then we could help the state develop an accountability framework, and this could lead the institutions to be creative in the use of technology – because there would be an outcome-based model. This process could end up with some informed decisions about how the system could grow and be designed. Would differentiated tuition provide enough of an investment?  It is likely in the next biennium (funding potential) will be worse (and therefore we need to act now – analytically and forcefully).

**Roberta Greene**

We should have community discussions about the resources available and have a conversation about what is possible.

**Nita Rinehart**

One thing to look for – stabilizing funding is the long-term challenge. We don't want or need to look for a wedge that's attractive and persuasive.  An important first step is how we increase access by using technology. It seems to me this is a wedge issue to capture legislators – one that would not require large amounts of money.

**Work session adjourned**.

**WASHINGTON**

# HIGHER
# EDUCATION

**COORDINATING BOARD**

July 2009

# DRAFT:  Bachelor of Applied Arts in Interior Design – Bellevue College

## Introduction

Bellevue College (BC) is seeking Higher Education Coordinating Board approval to offer a Bachelor of Applied Arts in Interior Design.  Bellevue College is one of seven Community and Technical colleges in Washington to offer a bachelor's degree.  Bellevue College was authorized under ESHB 1244 to offer an additional bachelor's degree in interior design.

The Interior Design program is being proposed in response to changes in the accreditation requirements for interior design programs.  Currently, Bellevue College is one of only a few colleges nationally to offer a CIDA (Council for Interior Design Accreditation) accredited interior design program at the associate level.  However, effective January 2010, CIDA will no longer accredit programs that award degrees below the baccalaureate level.

Development of the bachelor's program will allow more time in the curriculum to address emerging issues important to employers and students, including changes in the field and client expectations.  For example, understanding changes in regulations and technology are essential to success in the field.  Additionally, clients are looking for designers with expertise to fit particular needs like sustainability or other emerging issues.  The additional time allowed in the baccalaureate curriculum will allow students to cover more material that will better prepare them for work in this environment.

The new program would essentially split the current three-year associate degree programs into a 2 + 2 program consisting of a two-year associate degree program similar in structure and content to that provided at other community and technical colleges around the state.  It also will offer an upper division two-year program culminating in a bachelor's degree.  The curriculum is largely adapted from the courses currently offered in the three-year associate degree program.  The program planners anticipate little or no net increase in the number of prepared workers entering the market; rather, the primary purpose of the program is to provide more in depth training than is possible in the current program, and to provide professional development opportunities for working designers.

The new program would respond to the needs of local and regional employers for a skilled interior design workforce and address the changing nature of the field.  The program would also respond to demand for students enrolled in associate degree interior design programs who wish to develop more advanced skills.

## Relationship to Institutional Role and Mission and the Strategic Master Plan

The primary mission of Bellevue College is to provide high quality and flexible education programs that are consistent with the needs of students and support the economic, social, and cultural needs of the community.  The program is responsive to this mission by providing an educational pathway to support initial career preparation and professional development opportunities close to a large number of potential students as well as firms that employ interns and graduates.  Applied baccalaureate programs including the proposed BAA in Interior Design are designed to meet specific local and regional needs for baccalaureate degrees that build on technical associate degree programs and provide training relevant to a specified occupational field consistent with the community college workforce mission.

Bellevue College is in the final stages of a change to its accreditation status, resulting from the addition of the first bachelor's degree program in 2007; that process is expected to be completed this fall.  Because Interior Design would be the first Bachelor of Applied Arts, Bellevue College will apply to the NWCCU to add the new degree designation.  The NWCCU visiting committee will evaluate the college's preparation to offer the degree within the context of the college's application to offer baccalaureate degrees.

The program goals are consistent with those of the *2008 Strategic Master Plan* in that they provide opportunities for students to earn degrees and respond to the state's economic needs. The proposed degree program would respond to changing expectations within the interior design industry.  Specifically, the program would meet the individual needs of students by providing access to a degree program that would enhance their skills and provide opportunities for career advancement.  More broadly, the program responds to the economic needs of the state by providing a trained workforce for a growing and increasingly complex industry.

## Diversity

The Bellevue College Interior Design program has a good track record attracting a diverse student body.  Nearly one quarter of the students (23 percent) admitted in 2007-08 are minority students.  The proposal identifies specific steps to build on the strategies implemented at the associate level and the success of other programs at Bellevue College to attract and retain a diverse student body.  Specifically, the program would draw on the support of their alumni of color to act as mentors to current and future students and encourage students to continue in their studies; develop a targeted marketing campaign to reach potential students of color; coordinate with institution-wide diversity recruitment efforts; work to hire a diverse faculty and staff; connect with professional organizations to develop strategies to attract a diverse student body; and regularly assess both recruitment and retention data to monitor and improve the success of students from underrepresented minority groups. It should also be noted that the program serves mostly women (92 percent).  Coupled with diversity outreach efforts the program staff may want to consider ways to attract more men to the field.

## Program Need

The proposed program would represent a change in the training level of graduates; it is not designed to add significantly to the number of graduates trained in the field. While the impetus for this change is a change in the CIDA accreditation requirements, it is clear from the materials presented in the proposal that the change mandated by CIDA is consistent with the changes in the expectations of employers and the needs of students and current workers.

The proposal presents compelling evidence of employer, community, and student demand. "A Skilled and Educated Workforce" (2009 HECB, SBCTC, WTECB) finds a gap between the supply and demand of graduates prepared to enter occupations that fall into the "editors, writers, and performers category" which includes interior designers. Bellevue College conducted a more detailed analysis of demand that specifically looks at the needs in interior design.

The number of job openings in interior design occupations is increasing faster than average. Washington employed 1,200 interior designers in 2006. The number of positions is expected to grow by 28 percent by 2016, nearly twice as fast as the growth rate for all occupations in Washington. Employment security estimates that there will be approximately 70 openings per year to meet the needs for growth and replacement of the current workforce. Forty-five of these opening annually are in the King County area. Over half the current workforce (54 percent) has a bachelor's degree or higher.

In a survey of employers conducted by BC in 2007, the majority of respondents (56 percent) reported difficulty hiring baccalaureate trained designers "sometimes" or "frequently" – 24 percent of the respondents viewed this as a critical problem – 94 percent saw a benefit to the addition of an accredited baccalaureate program in Western Washington.

The proposal has drawn strong support from the Bellevue College Interior Design Advisory Committee. Committee members cite the importance of CIDA accreditation as a distinguishing factor that is important to the reputation and quality of the program. A baccalaureate-level credential is greatly preferred by employers who view the training level of their staff as a strategic advantage when bidding for jobs. The program has also drawn considerable support from employers and alumni as demonstrated in numerous letters of support submitted with the proposal.

Bellevue College conducted a survey of interior design firms in 2007. Sixty-three firms responded to the survey, and of those, 82 percent were in the Puget Sound Region. Nearly half (45 percent) indicated that they hire exclusively at the baccalaureate level. Another 38 percent indicated that they hire significantly more baccalaureate-level graduates than associate-level graduates.

Employers cite several reasons that they prefer to hire baccalaureate trained workers including: broader knowledge base; more adaptable and able to grow as needs change; baccalaureate graduates command more respect from their peers, architects, and clients; greater exposure to a variety of design problems; and greater ability to deal effectively with clients – especially when problems arise.

Student demand for the program is based on surveys of current students. In spring 2008, BC surveyed students in the interior design program – 149 students responded to the survey. Of those, 90 percent indicated an interest in completing a bachelor's degree. Of those who indicated they were not interested, three-fourths already had a bachelor's degree.

Students were interested in the baccalaureate program for three key reasons:
1. Career advancement (88 percent)
2. CIDA accreditation (80 percent)
3. Personal satisfaction (67 percent)

Students also cited a number of benefits to a bachelor's program including: better employment prospects; greater opportunity for career advancement; improved portability and recognition if they wanted to work outside the region; and higher pay plus other benefits.

The program planners assume stable enrollment similar to the current associate degree program with many students continuing from the associate to the bachelor's level. In addition, three other community or technical colleges offer interior design associate degree programs in Washington. Graduates of those programs also would be able to complete a bachelor's degree at BC.

Finally, the program would provide a pathway for graduates of the current three-year program to complete the requirements for the bachelor's degree without duplicating work they've already completed.

The community benefits in a number of ways from a program that would provide for greater depth and breadth in the interior design curriculum. For example, the public benefits from more attractive and useable public spaces; designers who are able to incorporate sustainable materials and products; and designers who ensure spaces are safe and meet all current codes and regulations.

While there are a number of competing programs in the state, the proposed program does not appear to unnecessarily duplicate other offerings. The program is one of only two CIDA accredited programs in Washington. In addition, the change to the current program would not represent a net add in the number of newly-prepared graduates entering the workforce; rather, the program would provide a professional development pathway for recent graduates as well as incumbent workers.


## Program Description

The proposed BAA in Interior Design would prepare students for careers with firms specializing in interior design services, architectural firms, office and interior space planning, furniture-related design, and green building and space design. The program would be attractive to students transferring directly from associate degree programs as well as incumbent workers wishing to upgrade their skills.

The new degree program is the result of a change in the structure of the current three-year associate degree program. The associate level program would be reconfigured as a 97 credit, two-year degree program that would be similar to programs offered at other community and technical colleges. All but one of the courses in the associate level program are part of the existing curriculum. The upper division bachelor's curriculum consists of 94 credits and is adapted from 12 existing courses and 6 new courses.

The end result is a baccalaureate degree program based on a 2 + 2 model that would draw students from Bellevue College. Additionally, it would accommodate transfer students from Clover Park Technical College, Highline Community College, Spokane Falls Community College, and other associate-level interior design programs offered at regionally accredited institutions.

The application process is expected to be selective. In addition to an associate degree in interior design or equivalent, students would need a cumulative GPA of 2.0 or higher to be considered for admission to the program. Students also would need to present an application that includes a personal essay that talks about their interests, background, professional goals, and any special considerations related to their admission to the program. Finally, students would be required to present a portfolio of their work in interior design and two letters of reference from persons familiar with their studio experience.

Once admitted to the program, students would complete a total of 94 credits including 69 credits of core coursework in interior design. Through the combination of the AA and BAA requirements, a student would complete a total of at least 191 credits including 75 credits of general education coursework to meet the requirements for the degree. The associate degree curriculum is more heavily weighted to the interior design coursework with only 25 credits of general education; students would complete another 50 credits of general education in the baccalaureate curriculum, some of which overlaps with program requirements (particularly in Fine Arts). The general education requirements include: 10 credits in communication; 5 credits of quantitative reasoning; 10 credits in science (including one lab); 10 credits in social science (includes 5 in cultural diversity); and 40 credits in humanities (including 35 in the arts).

Within the core curriculum students would take courses in systems design, lighting, and furniture design. The curriculum includes eight credits of electives in which students get more in-depth exposure to specific aspects of design such as sustainability issues. Finally, students would complete a practicum course (150-hour internship) and a two-quarter capstone course in which they would apply their research skills to address interior design problems.

Program graduates would develop a strong background in the technical aspects of interior design, including application of design principles and practices, lighting, acoustics, thermal comfort, and air quality principals, selection of furniture and interior materials, and knowledge of codes and other regulations relevant to the field. In addition, students would demonstrate a broader set of skills and knowledge including an understanding of the implications of globalization on design practices, how social, political, and physical influences shape the built environment, leadership and communication skills, and application of ethical standards for project management.

In the first year, the program would accommodate 44 FTE (63 headcount) students. The program would grow to approximately 83 FTE (120 headcount) students by the fourth year. Students in the current three-year program would have the option to complete the current curriculum and continue on to an abbreviated version of bachelor's program, or if they are early in the program they would have the option to complete the newly designed two-year associate degree and move on to the bachelor's through the 2 + 2 model. No new students are being admitted to the three- year program but all current students in the three-year program would have the option to complete that curriculum. Graduates who completed the three-year program in the past would also have an abbreviated option to complete the bachelor's program based on an advising plan that reflects the student's prior coursework.

The program proposal includes clearly defined student learning objectives for both the general education component of the program and the program as a whole. The program is competency-based; students would be required to demonstrate their abilities and knowledge in a variety of individual and team activities including hands-on practices, case studies, research and presentations, and knowledge based assessments. Industry members would be part of the assessment team reviewing student projects and portfolios. The program and students will be assessed as part of Bellevue College's Authentic Assessment of General Education as applied to the baccalaureate degree level.

Program assessment is identified as a priority of the program. The program goals are clearly defined and aligned with student learning outcomes. The assessment system builds on the current student and program assessment system in place at Bellevue College. Program outcomes are clearly defined and are inclusive of, but not limited to, those required under CIDA. The program would be assessed through a number of approaches, including typical strategies such as course evaluations, student surveys, employer evaluations, graduate follow-up, advisory committee feedback, analysis of retention and completion data, and faculty feedback and evaluation.

## External Review

The program was reviewed by two external experts: Tim Cozzens, IDEC Art+ Design Department at Columbia College Chicago, IL; and Diane Tsukamoto Hurd, Applied Arts and Science Division Chair, West Valley College, Saratoga California.

Both reviewers expressed support for the program. Mr. Cozzen notes "the logic of moving to a four-year program is inarguable." In addition, both reviewers included a number of recommendations to help further the development of the program. Bellevue College responded to each suggestion and made a number of modifications to the program. For example, two key recommendations held in common between the reviewers were a need to consider the space requirements for the program and a need to more explicitly address sustainability in the coursework and required student outcomes. Both reviewers felt that the space assigned to the program presented a weakness.

BC has appointed a faculty group to review space needs and make recommendations as the program is implemented. In addition, both reviewers indicated a need to ensure that issues such as sustainability are addressed more fully in the curriculum. In response, the learning outcomes developed from BC's existing sustainable design certificate will be integrated into the curriculum.

## Program Costs

The program would be self-sustaining. Tuition would be equivalent to that charged at the regional comprehensive universities at $198 per credit hour. In the first year of the program with an entering class of 44 FTE students, costs are estimated to be $9,083 per FTE. At full enrollment in the fourth year (83 FTE students), the cost would be $8,513 per FTE.

The program would draw on four current full-time tenured/tenure track faculty and 12 part-time faculty. The faculty have a rich combination of education, professional experience, and professional certifications. All full-time faculty have master's degrees. The program estimates a contribution of faculty time equivalent to 3.34 FTE faculty in the first year, and 5.69 FTE faculty in the fourth year. Administrative and clerical costs are based on 1.5 FTE staff including a half time administrative assistant, a half-time admissions staff person, and a half-time resource coordinator. The program would also employ a program director who would also have teaching responsibilities.

The program builds on existing campus resources. In 2006, the library received an additional $100,000 to improve the collection and services. During the CIDA accreditation visit in 2006, the team commended BC on the library and cited it as "a program strength." Space is currently available for the program; however, as the program is implemented, the space and facility needs will continue to be reviewed in response to reviewer concerns.

## Staff Analysis

The proposed program would support the unique role and mission of the institution. The program builds upon a successful program that has been accredited at the associate level and has developed a strong reputation in the community. The proposed program is responsive to changes in the industry, accreditation requirements, and the needs of employers and students by providing a pathway that would allow students to continue to build their skills and prepare for higher levels of expertise and responsibility.

The program also responds to the *Strategic Master Plan* goals of providing opportunities for students to earn degrees and respond to the economic needs of the state by providing trained workers who are able to respond to change within the industry. The program would provide a public option on the west side of the state for students who wish to complete a bachelor's degree in interior design, and the change would also ensure a CIDA accredited design program remains available in Western Washington. In addition, development of the bachelor's program provides greater opportunity for students to continue on to graduate study in interior design or related fields.

The proposed degree program includes an assessment approach with well-defined student learning outcomes and multiple measures of student achievement.  The program would be subject to a well-defined review process that promotes feedback from various constituents.

The program responds to demonstrated student, employer, and community needs and is consistent with the *State and Regional Needs Assessment* and the institution's own assessment of need.  Bellevue College has identified a set of proactive strategies to attract a diverse student body to the program and will monitor the success of students in the program.

The program would not duplicate existing programs and would be offered at a reasonable cost.


## Recommendation

Based on careful review of Bellevue College's program proposal and supplemental sources, HECB staff recommend approval of the program.

# RESOLUTION 09-08

**WHEREAS,** Bellevue College proposes to offer a Bachelor of Applied Arts in Interior Design; and

**WHEREAS,** The program is consistent with the purpose of ESHB 1244 and would provide students in the Puget Sound area a bachelor's degree pathway in Interior Design; and

**WHEREAS,** Approval of the program would allow Bellevue College to continue to offer a CIDA accredited program that is responsive to the needs of students and employers; and

**WHEREAS,** The program responds to demonstrated student, employer, and community needs and is consistent with the State and Regional Needs Assessment and the institution's own assessment of need; and

**WHEREAS,** The proposed degree program includes an assessment approach with well-defined student learning outcomes and multiple measures of student achievement; and

**WHEREAS,** The recruitment and diversity plan are appropriate to the program; and

**WHEREAS,** The program has undergone an extensive development and review process, which included input from the community and technical colleges, employers, and external content experts; and

**WHEREAS,** The costs are reasonable and the program would not unnecessarily duplicate other programs;

**THEREFORE, BE IT RESOLVED,** That the Higher Education Coordinating Board approves the Bachelor of Applied Arts (BAA) in Interior Design.

Adopted:

July 28, 2009

Attest:

_____
Jesus Hernandez, Chair

_____
Roberta Greene, Secretary

# WASHINGTON HIGHER EDUCATION COORDINATING BOARD

July 2009

## DRAFT:  Bachelor of Paramedicine
## University of Washington

### Introduction

The University of Washington (UW) seeks approval to establish a Bachelor of Paramedicine degree program.  The program would evolve from the University of Washington/Harborview Medical Center paramedic training program, which has certified a total of 576 paramedics for pre-hospital emergency medical services since 1969.  The proposed 5-quarter, 88-credit program would enroll 24 students (24 FTE) each year, beginning fall 2009.  Program candidates will typically be admitted as juniors and will have completed most of the additional 92 credits of their pre-professional academic coursework (most often at colleges and universities other than the University of Washington) prior to admission.  Typically, applicants will be employed and pre-screened by Western Washington fire departments and EMS organizations.  As has been the case for the existing certificate program, most program instructional costs, including student tuition and fees, are paid for by the Medic One Foundation.

The UW intends to continue to award the paramedic certificate to successful certificate program completers.  In addition, UW would award the Bachelor of Paramedicine degree to those certificate holders who have also completed the remaining UW baccalaureate degree requirements.  Attainment of the degree is not a condition to award paramedic certification.  It is the intention of UW to eventually achieve 100 percent degree attainment for all program students.  A major impetus for this change is the recommendation of the program's accrediting body (Commission on Accreditation of Allied Health Education Programs) to award credits toward a degree for program participants, observing, "students who commit to the time and academic rigor of this program should receive the academic recognition they deserve."

### Relationship to Institutional Role and Mission and the Strategic Master Plan for Higher Education in Washington

The UW's Role and Mission Statement notes the University of Washington's primary mission is the preservation, advancement, and dissemination of knowledge.  The proposed program would support this mission through research activities in the EMS system, its service and commitment to the local Western Washington communities, and by the addition of a new discipline to its degree offerings.

The proposed program also would support goals articulated in the *Strategic Master Plan for Higher Education* by expanding bachelor-level degree programs in health sciences.  In addition, the degree may be used as a foundation for pursuing additional education and training in health related fields, meeting the state's need to expand the number of degreed professionals in health sciences and services.

## Diversity

According to the program proposal submitted by the UW, "20 percent of the current paramedic certificate program class is comprised of minorities, women, and educationally and/or economically disadvantaged."  Program applicants are firefighters working for fire departments that typically have equal employment opportunity guidelines in place.

## Program Need

The UW/Harborview paramedic certificate program was created in 1969, serving 15 students from Seattle.  It has since expanded to 24 students from seven Western Washington counties and Yakima County.  Only Central Washington University also offers a bachelor's degree of this type; that program is focused on meeting the needs of Eastern Washington, and also accepts 24 students per year.  Bellingham Technical College accepts 16 students per year in its paramedic certificate program.  The Spokane District offers paramedic certificate programs, and several other colleges offer EMT-Basic certifications (a lower skill level certification) including Clark College, Peninsula College, Pierce College, Tacoma Community College, and Wenatchee Valley Community College.

Nationally, demand for EMTs of all types is expected to grow 19 percent between 2006 and 2016.  King County is expecting 25 percent of its EMTs to leave service in the next five years.  Data from EMSI, Inc. gathered by the HECB staff, predict nearly 400 new and replacement EMT/paramedic jobs in Western Washington over the next five years (2009-2014) or about 80 jobs per year, slightly above current total production levels.

As stated, a primary driver for the creation of this program is the twice-repeated recommendation by the accrediting body to begin offering college credit to students going through the rigorous certificate program.  Students will also benefit from earning the degree credential. Given the extensive time requirements of the existing certificate program, it makes sense to create a degree program of this type.

## Program Description

This is a competency-based program requiring 88 credit hours over five academic quarters. It requires significantly more instructional hours per credit than a traditional undergraduate program. Program contact hours include 375 lecture hours, 235 lab hours, 288 clinic hours, 1,470 field internship hours, and 85 written exam hours for about 2,500 total hours of instruction. Testing and evaluation has a minimum passing requirement of 80 percent. Retake examinations have a minimum passing requirement of 90 percent. Clinical practicum courses are graded pass/fail, since either the student meets the acceptable standard for mastering hands-on skills or fails and must repeat until mastery is attained.

For admission, paramedic students are pre-screened by their sponsoring fire department. This usually consists of a written examination, oral interview, practical assessment, and psychological evaluation. They must have an EMT-Basic certification and three years of field experience, a high school diploma, and have completed freshman level courses (English composition, Intermediate Algebra, and a five-credit science course).

## Program Costs

The proposed program would enroll 24 students in each five-quarter cohort with each cohort overlapping the next in the fourth quarter. Program costs, including tuition, would be about $14,000 per FTE in the first year rising to a projected $16,000 in the fourth year, comparable with other baccalaureate programs. Program instructional costs would be supported by the Medic One Foundation, including tuition. As UW students, financial aid is available based on individual need and circumstances.

Additional credits and courses needed to meet UW degree requirements beyond the 88 credits offered through the paramedic program are the responsibility of the student. Some students may receive financial support from their employers. Typically, the student will already have taken most of these courses prior to program admission.

## External Review and Comments

Letters of support were provided from Dr. Hugh Foy, a surgeon and former program instructor, Dean Theresa Williams from Bellingham Technical College, and Emergency Service Director, Dr. Michael Copass, from Harborview Medical Center.

External reviewer Douglas York from the University of Iowa Hospitals and Clinics, noted the high number of physicians involved in the training and clear learning objectives for each class. He also noted the reputation of the program within the communities of interest and administrative support from the University. He noted that only "fire-based students" were permitted to enroll and questioned whether that was necessary/appropriate.

External reviewer Dr. Keith Monosky, Director of Central Washington University's Paramedic program, wrote a glowing and detailed program review with many helpful suggestions for program improvement, none of which were major issues or problems.

External reviewer Dr. Sabina Braithwaite, Professor of Emergency Medicine at the University of Virginia, commended the UW for taking the initiative to create a bachelor's program and contribute to "the national trend [which] supports professionalism of EMS by creating precisely such programs." She noted that the program reflected national standards and responded to current trends in the field. She did raise some concerns about a lack of specificity in student assessment and grading rubrics, especially for the clinical practicum. This issue was addressed in a follow-up memo to Robert Corbett from Program Assistant Director Dean Brook, and included in the materials.

## Staff Analysis

The proposed program would support the university's mission and continue to provide a much needed education and training service to communities throughout Western Washington. It would also provide a new degree program in the high demand field of health sciences and services, consistent with the economic vitality goals in the HECB *Strategic Master Plan*.

Student need for the program is evident, since all program participants are employed by area fire departments prior to program admission, and are pre-screened by their fire departments. Economic analysis supports the continued need for new and replacement EMS workers throughout Western Washington for the foreseeable future. In fact, there is data indicating that demand for paramedics may exceed planned program capacity.

One external reviewer noted that the program is entirely "fire-based" since all program applicants must be firefighters who are pre-screened for paramedic training by their fire departments. No doubt, this arrangement comes from pattern and practice and the longstanding support for the program by the Medic One Foundation. Given that there may be demand for paramedic training not being met by the program, and that (according to the statistics provided) 80 percent of program students are white males who are not educationally or economically disadvantaged, it may be worth exploring if another pathway to program entry could be developed allowing students to receive paramedic training first, and then seeking employment with fire departments upon program graduation (alternatively, a coop arrangement with fire departments could be developed). This alternative pathway may open up the field to a more diverse group of students.

Students would study a curriculum that meets program accreditation guidelines, has a proven track record of success, and appears very rigorous and comprehensive.

The proposed program would not duplicate existing programs and would be offered to students at low cost primarily as a result of support the program receives from the Medic One Foundation.

One additional observation is that it is anticipated that most program participants would undertake their lower division coursework at other institutions before applying for admission to the program as juniors. This model makes it vitally important that transfer pathways be clearly articulated between the Community Technical College (CTC) system and the program. Work should be undertaken by program administrators as soon as possible to document those pathways through articulation agreements and other transfer pathway mechanisms.

## Staff Recommendation

After careful review of the proposal and supporting materials, staff recommends approval of the Bachelor of Paramedicine at the University of Washington. The HECB's Education Committee discussed the proposal during its July 9, 2009 meeting and recommended approval by the full Board.



Seattle's first Medic One van arrived on scene in 1969.
(Photo Courtesy of Medic One Van Preservation Fund)

# <u>RESOLUTION 09-09</u>

**WHEREAS**, The University of Washington proposes to offer a Bachelor of Paramedicine; and

**WHEREAS**, The program would respond to student, employer, and community need and would provide paramedics with college credit and a degree in health sciences, in addition to an EMT-Paramedic certificate; and

**WHEREAS**, The program's students would study a curriculum renowned for its comprehensiveness and rigor, taught by faculty whose scholarship and teaching is well known and respected internationally; and

**WHEREAS**, The program has support from external reviewers; and

**WHEREAS**, The program would not unnecessarily duplicate existing programs; and

**WHEREAS**, The program would be offered at a reasonable cost;

**THEREFORE, BE IT RESOLVED**, That the Higher Education Coordinating Board approves the Bachelor of Paramedicine at the University of Washington, effective July 28, 2009.

Adopted:

July 28, 2009

Attest:

_____
Jesus Hernandez, Chair

_____
Roberta Green, Secretary

# DRAFT: Bachelor of Science in Information Technology and Systems
# University of Washington Tacoma

## Introduction

The University of Washington Tacoma (UWT) seeks approval to establish a Bachelor of Science in Information Technology and Systems (ITS) degree program. Housed within the Institute of Technology, the ITS program would complement[1] existing programs in Computing and Software Systems (CSS) and Computer Engineering and Systems (CES). It would enroll 20 FTE students in fall 2009 and achieve full enrollment of 80 FTE by 2013. At full enrollment, it would graduate 32 students per year, who would be prepared for graduate studies or careers such as systems analysis, database administration, and security and information assurance. The ITS program would seek ABET[2] Computing Accreditation Commission (ABET-CAC) accreditation.

## Relationship to Institutional Role and Mission and the Strategic Master Plan for Higher Education in Washington

According to its mission statement, UWT educates diverse learners and transforms communities by expanding the boundaries of knowledge and discovery. The ITS program would support this mission by expanding the types of technical education available in South Puget Sound region in a way that integrates the disciplines of Information Technology (IT) and Information Systems (IS).

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[1] The ITS program would complement the CSS and CES programs by serving students more interested in using technology (including emerging technology) to solve problems than in designing the technology. CSS students learn how to use computer hardware and software to solve specific problems and typically work as computer programmers. CES students focus on how to present a problem to a computer and typically work as software or hardware design engineers. ITS students would typically work in positions that use existing systems and tools to gather, manipulate, store, retrieve, and manage information. In other words, ITS graduates would have a different set of skills that would be more tools oriented than design oriented. Their employment would focus on jobs involving deploying and managing complex IT and IS systems and keeping them operational.

[2] ABET, Inc. accredits programs in applied science, computing, engineering, and technology.

In addition, the ITS program would support the *Strategic Master Plan for Higher Education* by providing an opportunity for more high-technology degrees. In particular, the ITS program would respond to the *Master Plan* policy goal of expanding ". . . programs in science, technology, engineering, mathematics . . . ."


## Diversity

To supplement campus and system-wide services, the Institute of Technology would develop and implement multiple departmental level diversity-enhancing strategies, including:

- Establishing an Institute Diversity Committee with diversity issue oversight responsibility;
- Offering scholarship funds to underrepresented students;
- Ensuring that the program's material is attractive and helpful to diverse applicants;
- Inviting diverse speakers to the Institute's colloquia;
- Enhancing the internship program to encourage diverse students;
- Increasing the number of tenured female faculty; and
- Enhancing a mentoring program for diverse faculty and staff.


## Program Need

The ITS program would respond to the needs of students, employers, and community stakeholders and would not unnecessarily duplicate existing programs in the state.

Community and technical college (CTC) students would benefit because the program would broaden baccalaureate degree access for students who hold IT-related two-year degrees, most of whom cannot directly transfer to existing upper division programs. Out of 371 students responding to a June 2007 community college survey, 94 indicated an interest in the ITS program. In order to get a rough idea of how many would actually apply, program planners noted that for the existing CSS program, 63 out of 312 prospective students who inquired about the program (20 percent) enrolled. Assuming a similar ratio for ITS, about 19 of the 94 survey respondents would enroll, which is consistent with the program's estimated size at start-up.

More recently, in April 2009, program planners surveyed current UWT CSS and CES students to determine whether any of them would have preferred an ITS major. Forty-three students responded: 60 percent agreed or strongly agreed with the statement "A degree in Information Technology and Systems is of interest to me", and 28 percent agreed or strongly agreed with the statement "I am more interested in an ITS degree than a CSS or CES degree." In addition, program planners surveyed pre-major UWT students to determine interest in the ITS program. Of the 33 students who responded, 30 percent responded "yes" and 33 percent responded "maybe" when asked if they were interested in pursuing an ITS degree.

As evidence of employer need, program planners cite an April 2008 *Communications of the Association for Computing Machinery* article,[3] which indicates that the domestic IT job market has more than quadrupled from its low point in early 2002.  In addition, the Bureau of Labor Statistics' *2008-09 Occupational Outlook Handbook* indicates that employment of computer support specialists, computer systems administrators, computer systems analysts, and database administrators is expected to grow much faster than average between 2006-2016.  Furthermore, the Employment Security Department's employment projections for 2012-2017 indicate 2,607 average annual openings for occupations[4]  relevant to the ITS program, with an average annual growth rate significantly higher than the statewide average across all occupations.

As evidence of community need, program planners cite a Seattle Times editorial[5] which points out the gap between Washington's per-capita employment and per-capita production of bachelor's degrees in engineering, computer science, and other advanced fields.  The HECB's *State and Regional Needs Assessment* confirms this gap, noting that although Washington is a leader in innovation and technology-based industries, it needs more highly trained workers than it produces.  The ITS program would respond to the community need expressed in the *Needs Assessment* by providing an opportunity for the state to grow more of its own information technology and systems workers.

Although a handful of other institutions in the state offer IT-related degrees, each has a different focus than that of the ITS program, and none is accredited by the ABET-CAC.  Currently, students looking for a degree similar to the ITS degree have to go out of state.

## Program Description

The ITS program aims to educate students to analyze, design, integrate, and manage information systems using information technology.  The program's target audience includes students looking for an alternative to the strong emphasis on learning programming and mathematics in the abstract typically found in traditional computer science-focused programs.  It would draw from lower-division UWT students, transfer students, and associate degree holders.  It would be delivered primarily on site at the Tacoma campus but may include some online elements.

To be admitted to the program, students must have completed at least 90 credits with an overall GPA of at least 2.5; satisfied general education requirements and courses in English composition, basic programming skills, fluency in technology, and mathematics.  To facilitate access for transfer students, program planners plan to articulate with community and technical colleges throughout the state and to include the use of Major Related Programs (MRPs) to ensure

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[3] Litecky, C., Prabhakar, B., and Arnett, K. 2008. The Size of the IT Job Market.  Communications of ACM 51, 4 (Apr. 2008), 107-109.

[4] These occupations in alphabetical order are: computer support specialists; computer systems analysts; database administrators; network and computer systems administrators; and network systems and data communications analysts.  The projected statewide average annual growth rate for 2012-2017 across these occupations is 2.5 percent, which is much higher than the statewide average across all occupations of 1.4 percent.

[5] *High-demand Employment Requires High-caliber Education* by Rick Bender, David Tang and Susannah Malarkey, Seattle Times, October 31, 2006.

the program will articulate well. UWT has already prepared ITS course equivalency guides between courses at University of Washington Tacoma, Green River Community College, Olympic College, and Bates Technical College. Furthermore, the University of Washington Tacoma has articulation agreements in place with Olympic College and Green River Community College.

Once admitted, students would take 90 credits, including 40 credits of required core courses.[6] Students would take an additional 30 credits of ITS electives within either an IS or an IT track, which would allow students to specialize in their area of interest.[7] In consultation with their advisor, students would be encouraged to declare their track at the end of their junior year. In addition to the ITS electives, students would choose 10 credits of free electives. The program would culminate in a five-credit internship and a five-credit senior project, providing students with guided experience of what to expect when they join the workforce. All of the ITS courses would be new and would be taught by a mix of full-time tenure-track faculty and lecturers.[8]

Students would normally complete the program in two years (full-time), or up to four years (part-time) and achieve the following learning outcomes:

- Fundamental knowledge regarding technical concepts and practices in information technology and systems;
- A broad background across fundamental areas of information technology along with a depth of understanding in a particular area of interest within the domain of information systems;
- Independent critical thinking and problem solving skills, and the ability to analyze the impact of technology on individuals, organizations, and society including ethical, legal, and public policy issues;
- Experience working in teams to accomplish a common goal by integrating personal initiative and group cooperation;
- Skills to communicate efficiently with technical and nontechnical people in the information technology field, and effectively with clients, users, coworkers, and managers using written and oral communication and strategies for facilitating group projects and activities in collaboration with peers;
- The ability to identify and evaluate current and emerging technologies and assess their applicability to address the users' needs and recognize the need for continued learning throughout their career;

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[6] Including coursework in programming; information management; hardware and software systems; web design and programming; information assurance; information networking; systems analysis and design; and business for information professionals.

[7] Program planners are taking a phased approach to program development. Initially, they plan to limit resource requirements by starting with only two tracks (IT and IS), but eventually, they plan to add more tracks in related fields such as health information technology and multimedia development.

[8] At full enrollment, 4.0 out of 7.33 faculty FTE would be tenured or tenure-track faculty holding Ph.D.s.

- The ability to determine how information is inferred from data, and how rational decisions are made on the basis of that information and ensure that data integrity and privacy is maintained as the organization processes information and acts on it; and
- Preparation for graduate studies in information security, information systems, telecommunications, and other related information technology areas.

These student learning outcomes would be measured through problem solving using real-world datasets; practical programming assignments; hands-on laboratory exercises; case study analysis; term papers; individual and team projects; exercises; tests; quizzes, and preparation of business plans. In addition to traditional course work, students would complete a senior project in consultation with an advisor from the industry. The senior project plan would include project definition, project requirements, preliminary design, and work schedule. The project would require a final report, to be publicly presented as part of the Institute of Technology's ongoing colloquium series.

Program assessment approaches would include:

- Student course evaluations, which would be reviewed by program coordinators annually;
- Faculty course assessments;
- Peer review of teaching and curricular offerings;
- Assessment of the information technology body of knowledge covered in each course and the skill competency that students earned from each course;
- Informal quarterly meetings with students;
- Surveys and/or interviews with employers of student interns and/or program graduates;
- Follow-up with students who withdraw from the program to determine reasons for dropping out and identify plans for returning for further study;
- Senior exit surveys to assess student satisfaction with the program, determine the degree to which the program met student expectations and goals, and identify future plans and job prospects; and
- Surveys of graduates to assess employment and career impact.

Data from all of the above approaches would be used to assess and improve the content and curriculum of the ITS program. During the start-up period, an Industrial Advisory Board would be consulted before making changes.


## Program Costs

The ITS program would enroll 20 FTE students in the first year, growing to full enrollment of 80 FTE students by the fifth year. To implement the program, ITS planners intend to deploy 3.8 FTE administrative staff and 7.33 FTE faculty at full enrollment. The program would require 5.33 new faculty FTE, as well as 3.5 new administrative FTE.

The program would be funded by general fund state support, tuition, lab fees, and internal reallocation. In the worst case, the internal reallocation would impact the existing CSS program by borrowing faculty from it and either increasing class size or reducing the number of electives offered. There still would be enough electives available to CSS students to satisfy degree requirements. As faculty are hired for the ITS program, the impact on CSS would be mitigated.

At full enrollment of 80 student FTE in 2013, the direct cost of instruction would be $1,027,711, or $12,846 per FTE. In comparison, according to the HECB's *2005-06 Education Cost Study (July 2007)*, the direct cost of instruction per average annual upper division undergraduate computer science student FTE ranges from $6,257 at CWU to $12,496 at UW Seattle. If the cost study figures were adjusted for inflation, then the cost of the ITS program would lie within the range and would be less than the computer science cost at UW Seattle.

The cost comparison above does not take into account start-up lab facility and equipment upgrades, which are omitted because they are not expected to be ongoing. Although the program would leverage existing CSS laboratories and equipment as much as possible, it would require about $330,000 worth of lab and equipment upgrades in the third year and another $340,000 worth in the fifth year. The budget initially relied heavily on external donations to finance lab facility and equipment upgrades. Program planners have subsequently revised the budget and reallocated resources to eliminate that reliance.


## External Review

Two reviewers evaluated the proposal: Dr. Luther Troell, Professor and Chair, Department of Networking, Security, and System Administration, Rochester Institute of Technology; and Dr. Barry Lunt, Professor of Information Technology, School of Technology, Brigham Young University. Both reviewers strongly endorsed the ITS program.

Dr. Troell remarked that the proposal was one of the best he had seen, noting that UWT had invested a lot of time and study in program planning and that the program compared favorably with all of the programs familiar to him. He commended UWT for the sequence of courses and remarked on the quality of the program assessment and student assessment plans. He also noted that the faculty was well qualified. He made minor suggestions regarding particular courses and topics, which UWT responded to satisfactorily. He closed by saying "I really see no weaknesses."

Dr. Lunt was impressed with the proposal's clarity, organization, and content. He noted that the program would have appropriate depth, breadth, curriculum, sequencing, synthesis, and assessment. He noted that, although it was somewhat unusual to cover both IT and IS curricula, the compromise that the program reached was appropriate. He expressed the opinion that the faculty would be able to create an excellent ITS program. However, he raised a concern about budget deficits during the first four years of the program, which program planners subsequently addressed satisfactorily by revising the budget.

## Public Comment

Ms. Violet Boyer, President and CEO of Independent Colleges of Washington, submitted a comment letter, pointing out that there are at least nine computer-related majors, including information systems majors, offered in the central Puget Sound area outside of UW programs. She further noted that most of the nine programs have strong articulation agreements with area community colleges. She concluded by questioning whether the ITS program would be the best use of new higher education funding.

UWT responded that, while there are other computer-related majors offered in central Puget Sound, the ITS program would be significantly different from the other majors. UWT searched for similar programs not only in Washington State, but also nationwide and found no comparable four-year programs that offer a degree that amalgamates IT skills with IS skills and offers students the flexibility to be skilled in one or both areas. Furthermore, there is not a single ITS-like program in Washington, Oregon or Idaho that is ABET-CAC-accredited.

Dr. Dennis Murphy, Provost and Vice President for Academic Affairs, Western Washington University (WWU), also submitted a comment letter. In it, Dr. David Bover, Chair of WWU's Computer Science Department, noted that the program appeared to be sensible.

## Staff Analysis

The ITS program would support UWT's mission and the *Strategic Master Plan for Higher Education*. It would also employ multiple strategies to enhance diversity.

Program planners provided sufficient evidence of student, employer, and community need for the ITS program. Several surveys indicated student need, and the Bureau of Labor Statistics and Employment Security Data indicated employer need. The ITS program would support the HECB State and Regional Needs assessment by responding to community need for Washington to rely less heavily on importing workers in technical fields. Program planners provided sufficient evidence that the program would not duplicate existing programs in the state.

The ITS program would be different from, yet synergistic with other programs at UWT. As such, it would nicely complement current UWT offerings in CSS and CES. It would provide new opportunities for community and technical college students who seek a transition beyond their two-year technical education into a four-year college degree in the IT and IS areas. In fact, its articulation plan is exemplary.

The program reflects extremely thoughtful and thorough planning throughout, with a curriculum that has been designed with ABET-CAC accreditation in mind and whose quality was noted by both reviewers. Students would be assessed in a variety of ways that would include an internship and capstone project. Program assessment would employ multiple measures as well.

The program is somewhat expensive, but the cost is reasonable given the program's technical nature.  The proposed budget initially relied heavily on external fundraising, but program planners have subsequently reallocated resources and revised the budget to eliminate that reliance.

## Staff Recommendation

After careful review of the proposal and supporting materials, staff recommends approval of the Bachelor of Science in Information Technology and Systems at University of Washington Tacoma.  The HECB's Education Committee discussed the proposal during its July 9, 2009 meeting and recommended approval by the full Board.

# RESOLUTION 09-10

**WHEREAS**, The University of Washington Tacoma proposes to offer a Bachelor of Science in Information Technology and Systems; and

**WHEREAS**, The program would support University of Washington Tacoma's mission and the Strategic Master Plan for Higher Education; and

**WHEREAS**, The program would respond to student, employer and community need and would not duplicate existing programs; and

**WHEREAS**, The program would have strong diversity and articulation plans; and

**WHEREAS**, The program's students would study a high quality curriculum carefully designed with program-specific accreditation in mind; and

**WHEREAS**, The program has strong support from external reviewers; and

**WHEREAS**, The program would be offered at a reasonable cost;

**THEREFORE, BE IT RESOLVED**, That the Higher Education Coordinating Board approves the Bachelor of Science in Information Technology and Systems at the University of Washington Tacoma, effective July 28, 2009.

Adopted:

July 28, 2009

Attest:

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Jesus Hernandez, Chair

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Roberta Greene, Secretary

# WASHINGTON HIGHER EDUCATION COORDINATING BOARD

**July 2009**

# DRAFT: Master of Science in Computing and Software Systems
# University of Washington Bothell

## Introduction

The University of Washington Bothell (UWB) seeks approval to establish a Master of Science in Computing and Software Systems (MSCSS) degree program within UWB's Computing and Software Systems[1] unit, which now offers a Bachelor of Science in Computing and Software Systems (BSCSS) and a Bachelor of Arts in Applied Computing (BAAC). The proposed program would enroll 16 FTE in fall 2009, building to full enrollment of 45 FTE by 2011with the capacity to graduate 29 students annually. Graduates would be prepared for careers in software engineering, systems analysis, computer programming, software project management, and related occupations.[2]

The MSCSS program was approved by HECB Resolution No. 03-07 on April 23, 2003, but the program was not implemented due to lack of state funding. According to HECB *Program and Approval Policies and Procedures*, programs not implemented within three years of their approval date are subject to further HECB review. Therefore, UWB has re-submitted its original proposal, along with a new needs assessment, comments from two external reviewers, and a revised budget based on self-support funding.

## Program Need

The original proposal used data from a variety of sources to build a convincing case for student and employer need for the program. When UWB re-submitted the proposal in May 2009, it also submitted updated evidence of student and employer need. To obtain evidence of student need, the UWB submitted a survey soliciting interest in the program in May 2007. Forty-seven inquiries were received from potential students, including 24 from students whose companies[3] indicated they would pay tuition. University of Washington Tacoma's MSCSS program has

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[1] Conceptually, Computing and Software Systems represents a cross between computer science and software engineering.

[2] The MSCSS program would also enable workers in fields, such as aerospace, architecture, and management consulting, to apply computing and software skills to advance their careers.

[3] Including Microsoft, Boeing, Amazon.com, and Siemens Medical Solutions.

experienced high enrollments, and it is expected this level of demand also will be present for an MSCSS program offered in Bothell, a high-technology corridor.  Furthermore, enrollment in computer science and computer engineering is experiencing a national surge.  A March 2009 Computing Research Association survey found that for 2007-2008, total enrollment for computer science and computer engineering departments had increased 6.2 percent over the previous year, and total enrollment (considering only majors) had increased  8.2 percent.  This was the first increase in total enrollment in six years, which may indicate a recovery from the dot-com collapse.

Data analyzed by the Association of Computing Machinery show more computer-related jobs being created now than before the dot-com collapse.  In addition, the U.S. Department of Labor projects that computer related jobs will account for 5 of the 27 fastest-growing job categories in the nation (including two of the top four) during 2006-2016.  The *2007 Washington State Labor Market and Economic Report* also projects annual growth in computer-related jobs of approximately 2.8 percent, much higher than the statewide average projected job growth.  Finally, the March 2009 joint report *A Skilled and Educated Workforce,* indicates an average annual gap between supply and demand for computer science degrees of 921 degrees.

## Program Description

The program's target audience, objectives, and curriculum[4] remain the same as they were in the original proposal.  The program would serve a variety of students, ranging from computing professionals who hold BSCSS degrees to students seeking career transitions who hold bachelor's degrees unrelated to computing.  The program would offer evening classes to accommodate working people, who could enroll part-time.

The program would prepare students to:

- Be proficient in identifying appropriate technological solutions to computing and software problems from their chosen application domain;[5]
- Apply critical thinking skills and cross-disciplinary knowledge to problems whose solutions require computing/software and application domain synthesis; and
- Develop effective oral and written communication skills and team membership skills.

The MSCSS program would consist of 45 credits.  The curriculum would include 3-5 required core courses (15-25 credits), 2-4 specialized electives (10-20 credits), and a 10-credit thesis or capstone project.  The core courses would be chosen from among four groups:

- Programming (5 credits)
- Design (5 credits)

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[4] However, individual classes would be updated as necessary.
[5] A field, such as aerospace, would be an example of an application domain.

- Foundations (5 credits)
- Systems (0-10 credits, depending on student's background—more advanced students would substitute specialized electives instead)

## Program Costs

The MSCSS program would enroll 16 FTE students in the first year, growing to full enrollment of 45 FTE students by the third year. The program would be self-supporting rather than state-funded. The revised budget projects a deficit of $61,484 prior to the program's first year, followed by a deficit of $67,821 during the first year of enrollment. After the first year, the program would become profitable, with a projected surplus of $60,250 in the second and $381,742 by the third year. The degree would cost students $29,250.

## External Review

Two reviewers assessed the proposal: Dr. el-Hadi Aggoune, Roy C. Anderson Chair Professor and Director of Engineering Programs, Henry Cogswell Polytechnical University; and Dr. Peter Shirley,[6] Senior Research Scientist, NVIDIA Corporation and Adjunct Full Professor of Computer Science, University of Utah. Both reviewers were asked to comment on the appropriateness of the curriculum in the original proposal, given the time that has passed since the program was approved. Both reviewers had only positive comments about the MSCSS program.

Dr. Aggoune noted the program has several unique features; and the goals, objectives, and learning outcomes are clearly articulated and measurable. He also suggested it is reasonable to conclude that the MSCSS will reach or exceed the budgeted enrollment figures. He stated that the ". . . program as presented is still appropriate despite the time elapsed since 2003 . . ." and furthermore, UWB's updated documentation convincingly demonstrates that the program would have the resources necessary for successful operation.

Dr. Shirley noted that the program's short-term and long-term prospects are good. He said, "I want to emphasize that I believe the program is still appropriate despite the time elapsed since 2003. In fact, I think if anything, it is more appropriate as the basic economic issues in favor of the opportunity for entering this program have increased, while the educational issues of how to deliver this program have changed little."

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[6] Prior to his appointment as Senior Research Scientist at NVIDIA, Dr. Shirley was a tenured full professor at the University of Utah. He was one of the reviewers who reviewed the original proposal back in 2003, but Dr. Aggoune was not.

## Public Comment

Dr. Dennis Murphy, Provost and Vice President of Academic Affairs at Western Washington University (WWU), submitted a letter containing comments from WWU's Computer Science Department regarding the MSCSS program. The letter noted some positive features, but it also raised concerns regarding whether the program content was undergraduate or graduate level.

Program planners responded that courses would not be composed of undergraduate material; rather, they would build on either undergraduate preparation or prerequisite courses taken by career transition students. "Moreover, as in all of our graduate courses, master's students will be required to perform at a higher level of maturity and independence than undergraduates, and course deliverables will typically include projects and papers that analyze and implement advanced algorithms and techniques that they have learned. Students will also be required to read and understand current technical literature and present their findings during class and at program research seminars."

## Staff Analysis

The program was approved by the HECB in 2003 but was not implemented due to lack of funding. UWB has provided sufficient evidence of student and employer need for the program, and responsiveness to need was confirmed by reviewer comments that the program is still appropriate, despite the time elapsed since 2003. Given the level of detail in the original proposal, the concerns raised by WWU about the curriculum were reasonable, but UWB responded sufficiently to those concerns. The budget appears adequate to support the program, which after some initial losses, would more than pay for itself.

## Staff Recommendation

After careful review of the proposal and supporting materials, staff recommends approval of the Master of Science in Computing and Software Systems at the University of Washington Bothell. The HECB's Education Committee discussed the proposal during its July 9, 2009 meeting and recommended approval by the full Board.

# RESOLUTION 09-11

**WHEREAS**, The University of Washington Bothell proposes to offer a Master of Science in Computing and Software Systems; and

**WHEREAS**, The program was previously approved by HECB Resolution 03-07 on April 23, 2003; and

**WHEREAS**, The program was never implemented due to lack of state funding; and

**WHEREAS**, The University of Washington Bothell has submitted sufficient evidence to indicate that the program's self-support budget would provide adequate funding; and

**WHEREAS**, The University of Washington Bothell has submitted sufficient evidence to indicate continuing need for the program; and

**WHEREAS**, The University of Washington Bothell has submitted sufficient evidence to indicate that the program is still appropriate, despite the time elapsed since it was originally approved; and

**WHEREAS**, The program has support from external reviewers;

**THEREFORE, BE IT RESOLVED**, That the Higher Education Coordinating Board approves the Master of Science in Computing and Software Systems at the University of Washington Bothell effective July 28, 2009.

Adopted:

July 28, 2009

Attest:

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Jesus Hernandez, Chair

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Roberta Greene, Secretary

**WASHINGTON**
**HIGHER**
**EDUCATION**
**COORDINATING BOARD**

July 2009

# DRAFT: Bachelor of Science in Athletic Training
# Moderate Degree Change Proposal
# Washington State University

## Introduction

Washington State University (WSU) has submitted a Moderate Degree Change proposal to convert an existing Athletic Training option[1] into a Bachelor of Science in Athletic Training degree beginning in fall 2009.

## Proposed Change Description

The proposed change (i.e. the conversion) is essentially a change in name only. WSU would make the change in response to a requirement from an external accrediting body, the Commission on Accreditation of Athletic Training Education (CAATE). CAATE requires that by academic year 2014-2015, individuals completing entry-level programs in athletic training must be awarded a degree in athletic training.

## Staff Analysis

WSU has certified the following:

- The proposed change is mandated by an external accrediting body;
- The proposed change will not affect the program's degree level, curriculum, or faculty; and
- The proposed change will not have an adverse impact on any student's learning experience.

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[1] The Athletic Training Option exists within a Bachelor of Science in Kinesiology degree.

WSU has supplied sufficient evidence that the proposed change is required by an external accrediting body and meets all moderate degree change eligibility criteria.[2]


## Staff Recommendation

After careful review of the moderate degree change proposal and supporting materials, staff recommends approval of the Bachelor of Science in Athletic Training at Washington State University. The HECB's Education Committee discussed the proposal during its July 9, 2009 meeting and recommended approval by the full Board.

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[2] The staff analysis is brief because the external mandate coupled with WSU's certifications entitled WSU to file a short form moderate degree change proposal.

# RESOLUTION 09-12

**WHEREAS**, Washington State University proposes to offer a Bachelor of Science in Athletic Training; and

**WHEREAS**, The Bachelor of Science in Athletic Training would be converted from an existing Athletic Training option within Washington State University's Bachelor of Science in Kinesiology degree; and

**WHEREAS**, Washington State University has certified that the conversion is mandated by an external accrediting body; would not affect the program's degree level, curriculum or faculty; and would not have an adverse impact on any student's learning experience;

**THEREFORE, BE IT RESOLVED**, That the Higher Education Coordinating Board approves the Bachelor of Science in Athletic Training effective July 28, 2009.

Adopted:

July 28, 2009

Attest:

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Jesus Hernandez, Chair

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Roberta Greene, Secretary

![Washington Higher Education Coordinating Board logo]

**July 2009**

## DRAFT: Bachelor of Science in Economic Sciences
## Moderate Degree Change Proposal
## Washington State University

### Introduction

Washington State University (WSU) has submitted a Moderate Degree Change proposal to consolidate four existing economics degrees into a single Bachelor of Science in Economic Sciences degree with seven options[1] beginning in fall 2009. The four existing pre-consolidation economics degrees are:

- BA in Economics[2]
- BS in Agricultural Economics and Management
- BS in Agribusiness Economics and Management
- BS in Environmental and Resource Economics and Management

Like the existing degrees, the proposed degree would be housed within WSU's School of Economic Sciences (SES), and would serve 140 FTE students with about 50 graduates per year.

### Proposed Change Description

The proposed change would consolidate the four degree programs currently offered by the SES into a single major, reducing the number of study emphases within SES majors from 10 to 7. The proposed change has been approved by the SES faculty, the College of Agricultural, Human, and Natural Resource Sciences dean, the provost, the Academic Affairs Committee, and the Faculty Senate.

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[1] The proposed BS in Economic Sciences would offer seven options: Business Economics; Financial Markets; Graduate School Preparation; International Trade and Development; Economic Analysis and Policy; Agricultural Economics; and Environmental and Resource Economics.

[2] The existing BA in Economics currently offers seven options: Business Economics; Financial Markets; Graduate Study Preparation; International Development and Regulation; Public Policy; Labor; and Industrial Organization and Law. The other three pre-consolidation degrees do not offer options.

Prior to a merger four years ago, the BA in Economics was housed in the College of Business, and the other three existing pre-consolidation degrees were housed in the College of Agricultural, Human, and Natural Resource Sciences. The merger moved the four degrees to a single academic unit: the School of Economic Sciences.

During the four years following the merger, the SES changed course requirements and learning objectives to reflect commonalties among the four programs. As a result, the majority of required course work is now identical for all four programs. For example, a current student graduating with a BS in Agricultural Economics and Management can meet the requirements for a BA in Economics with the same set of courses. Because of this, the proposed change is substantively a relabeling to more accurately describe what the SES already delivers. In other words, it reflects post-merger curricular changes that are already in place.

The proposed change would accomplish the following:

- Increase transparency and remove false distinctions;
- Benefit students and employers by ensuring the degree title accurately portrays the knowledge and skills represented by the degree and accurately reflects the substantial quantitative and theoretical training that is common to all SES undergraduate economics programs;
- Benefit the community by improving efficiency at WSU, since a single Economics degree program would require less heterogeneous advising, tracking, and overall record keeping regarding student progress toward degree completion; and
- Align with the *Strategic Master Plan for Higher Education* by preparing work-ready students with degrees that are readily recognized.

The proposed change would not alter the target student audience; admission requirements; required core courses; learning objectives; location, delivery mode, or scheduling; faculty; or facility use. The proposed change also would not rely on increased enrollments or teaching loads, nor require any non-trivial start-up or ongoing expenditures.

## Staff Analysis

The consolidation proposed by WSU meets the eligibility criteria for a moderate degree change, and WSU submitted information in the proposal sufficient to justify the change. In particular, the proposal contained credible information indicating that:

- The proposed change has undergone multiple levels of internal review within WSU;
- The proposed change is aligned with the *Strategic Master Plan for Higher Education* and the *State and Regional Needs Assessment*;
- The core curriculum and faculty would not change; and
- The start-up and ongoing costs of the proposed change would be negligible.

Normally, WSU also would have needed to include in its proposal a statement or report from an external expert indicating whether the proposed change is consistent with trends in the field and would result in a program that:

- Has an appropriate degree title and degree level; and
- Demonstrates a coherent design, with depth, breadth, and curriculum appropriate for the degree title and level.

WSU requested an exception to the external expert requirement, which staff granted on the grounds that the proposed consolidation involves previously approved degrees that are very similar to each other and have an established track record of producing graduates who either pursue graduate studies or obtain employment appropriate to their training. Furthermore, the consolidation would not alter the level or basic structure of the degree, or alter the faculty or other resources required.

## Staff Recommendation

After careful review of the proposal and supporting materials, staff recommends approval of the Bachelor of Science in Economic Sciences at Washington State University. The HECB's Education Committee discussed the proposal during its July 9, 2009 meeting and recommended approval by the full Board.

# **RESOLUTION 09-13**

**WHEREAS**, Washington State University proposes to offer a Bachelor of Science in Economic Sciences; and

**WHEREAS**, The Bachelor of Science in Economic Sciences would result from a consolidation of existing Bachelor of Arts in Economics; Bachelor of Science in Agricultural Economics and Management; Bachelor of Science in Agribusiness Economics and Management; and Bachelor of Science in Environmental and Resource Economics and Management degrees; and

**WHEREAS**, The consolidation meets the eligibility criteria for a moderate degree change; and

**WHEREAS**, The consolidation would not affect the program's degree level, core curriculum, or faculty; and

**WHEREAS**, The consolidation would benefit students and employers by ensuring that the degree title accurately portrays the knowledge and skills provided by the degree and accurately reflects the substantial quantitative and theoretical training that is common to all undergraduate economics programs in Washington State University's School of Economic Sciences; and

**WHEREAS**, The consolidation would benefit the community by improving efficiency at Washington State University; and

**WHEREAS**, The consolidation would align with the *Strategic Master Plan for Higher Education* by preparing work-ready students with degrees that are readily recognized;

**THEREFORE, BE IT RESOLVED**, That the Higher Education Coordinating Board approves the Bachelor of Science in Economic Sciences effective July 28, 2009.

Adopted:

July 28, 2009

Attest:

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Jesus Hernandez, Chair

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Roberta Greene, Secretary

**WASHINGTON**
# HIGHER
# EDUCATION
**COORDINATING BOARD**

**July 2009**

# DRAFT:  Bachelor of Science in Electrical Engineering
# University of Washington Bothell

## Introduction

The University of Washington Bothell (UWB) seeks approval to establish a Bachelor of Science in Electrical Engineering (BSEE) degree program.  Housed within UWB's Science and Technology unit, the BSEE would be UWB's first engineering program and first program with a significant online component.  The BSEE program would enroll 17 FTE students in winter 2010 and would achieve full enrollment of 60 FTE by 2014.  At full enrollment, it would graduate 24 students per year who would be prepared for graduate studies or careers in electrical engineering (EE) and related occupations.  UWB would seek ABET[1] accreditation for the program, independent of University of Washington Seattle's existing ABET accreditation.

In 2005, the University of Washington obtained a Sloan Foundation grant intended to fund development of the necessary coursework for offering a University of Washington Seattle (UWS) BSEE degree online.  UWS decided not to follow through, and UWB used the Sloan Foundation grant instead.  The resulting 70-credit UWB BSEE program would be a hybrid program including online and on-site components.  Students would initially be able to complete 50 out of 70 credits online.[2]  Although the BSEE is initially a hybrid rather than an online program, UWB intends for students ultimately to have the option of taking the program entirely through distance learning.  Distance learning components include online learning and may include other forms such as remote delivery to community and technical college campuses or other sites.

## Relationship to Institutional Role and Mission and the Strategic Master Plan for Higher Education in Washington

According to its mission statement, UWB provides access to excellence in higher education through innovative and creative curricula, interdisciplinary teaching and research, and a dynamic community of multicultural learning.  Its mission goals include serving college-age and established adult students, and the community at large; and providing quality curricula by making use of the best of educational technology to support teaching and learning.  The BSEE program would support

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[1] ABET, Inc. accredits college and university programs in applied science, computing, engineering, and technology.
[2] Content would be delivered online, however students may be required to come to campus to take exams.

UWB's mission by using educational technology to increase access to an engineering field for students whose work, family, and other commitments make it difficult for them to enroll in traditional programs. Furthermore, the BSEE would be extremely important to UWB's future growth and direction because it would spearhead UWB's efforts to increase its distance learning and science, technology, engineering, and mathematics (STEM) offerings.

In addition, the BSEE program would support the *Strategic Master Plan for Higher Education* policy goal of expanding STEM degree programs. Furthermore, it would do so in a way that would expand access for nontraditional students.

## Diversity

To supplement system- and campus-wide initiatives, UWB's Science and Technology unit would develop and implement departmental level diversity-enhancing strategies, including:

- Recruiting diverse faculty;

- Enlisting the help of Dr. Warren Buck, who successfully wrote a Lewis Stokes Alliance for Minority Participation grant, to provide leadership in diversity-enhancing efforts;

- Expanding UWB's relationship with the Tulalip tribes to enhance recruitment of qualified Native American students into the program;

- Creating Spanish language advertisements to target audiences who listen to Hispanic radio stations across the state;

- Sending diverse student ambassadors from the program to middle and high schools; and

- Creating capstone projects that have relevance to diverse communities as part of the curriculum.

## Program Need

The *State and Regional Needs Assessment Report* (HECB 2006) indicates a demand for increased capacity in architecture and engineering, computer science, and health care; however, the *Needs Assessment* does not specifically address the demand for various disciplines within engineering, such as electrical engineering. *A Skilled and Educated Workforce* (HECB, SBCTC, and WTECB, 2009) indicates the current supply of graduates may be sufficient in mechanical, electrical, electronics, and computer engineering; however, as many as half of all engineering graduates enter other occupations, most often business, computer science, and research.[3]

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[3] HECB *State and Regional Needs Assessment Report*, page 144, table G.11.

As evidence of employer demand, program planners noted that Employment Security Department Workforce Explorer Data forecast more than 275 average annual openings for electrical and electronics engineers during 2011-2016. In addition, electrical and electronics engineers have low unemployment and high average wages statewide, which indicates employer demand.

At the national level, the U.S. Department of Labor lists electrical engineering as an energy-related "in demand" occupation; however, the Bureau of Labor Statistics' *Occupational Outlook Handbook* notes that growth for electrical and electronics engineers is projected to be slower than average.

In addition to citing state and federal employer demand information, program planners obtained letters of support from local employers. Michael J. Denton, Vice President of Engineering, Boeing Commercial Airplanes, and Reza Sadri, Director, Medical Division, Cascade Engineering Services both indicated that the hybrid nature of the program would help attract qualified, nontraditional students who otherwise might not be able to attend. Tom Clement, founder and Chairman of the Board of Pathway Medical Technologies, indicated that the program would be a good fit for UWB students, and the online aspect of the program would make it practical for student learning.

Students would benefit from the BSEE program because it would increase access for nontraditional students, initially in King and Snohomish Counties, but with the intent of ultimately increasing access statewide. Since the founding of UWB, admissions staff, program counselors, and faculty have fielded frequent inquiries about engineering programs; and the frequency increased substantially after the admission of UWB's first lower-division students in 2006.

During a two-month period in the fall of 2008, 160 students inquired about the BSEE program. UWB administered a follow-up survey to these students, and 77 percent indicated the hybrid format was important to them. Another survey, administered to 61 potential students who inquired about an electrical engineering program at Bothell or attended community college career days or college fairs during March and April 2009 revealed the following:

- 78 percent of students surveyed were planning to attend UWB;

- 92 percent were interested in an electrical engineering degree;

- 14 percent would attend a private institution if the BSEE program was delayed; and

- 75 percent of the respondents were over 21 years of age (nontraditional students).

Additionally, a survey of UWB freshmen indicated more students were interested in engineering (electrical, civil, and mechanical) than in other majors not currently offered at UWB. This suggests the BSEE program would respond to demand from lower-division UWB students who otherwise would have to transfer to obtain a BSEE degree. Similarly, the program would respond to demand from pre-engineering students at Cascadia Community College, which is co-located with UWB. Students at other community and technical colleges (CTCs) also would benefit because the program would expand access for students in two-year associate of science pre-engineering degree programs. The State Board for Community and Technical Colleges (SBCTC) reported that 28 percent of students who completed the pre-engineering two-year degree went on to earn a BA in Computer Engineering or Electrical Engineering.

Furthermore, the program would help fill a void in service to students in Snohomish County caused by the closing of Cogswell Polytechnical College, which offered a BSEE in Everett until 2006. According to Professor el-Hadi Agguone, who directed Cogswell's Electrical Engineering program in Everett, the program served about 35 students, about half of whom were full-time.

As evidence of community demand, program planners noted that Prosperity Partnership's *Puget Sound Regional Competitiveness Indicators/2008-2009 Update* calls for a major increase in baccalaureate production for high-demand fields such as engineering. Program planners obtained letters of support from executives at Cascadia Community College, Olympic College, the Center for Educational Computing Initiatives at the Massachusetts Institute of Technology, and a trustee of Cogswell Polytechnical College. Program planners also obtained letters of support from the Puget Sound Engineering Council, the Seattle Section of the Institute of Electrical and Electronics Engineers, and the Washington Biotechnology and Biomedical Association. At the national level, the program would respond to community demand because its curriculum includes business and societal courses, reflecting engineering education reform efforts by the National Academy of Engineering and National Science Foundation.

In King County, four other institutions have already responded to the demand for BSEE degrees: Eastern Washington University (EWU),[4] Seattle Pacific University, Seattle University, and the University of Washington Seattle. The University of Washington Bothell's BSEE program, however, would have a significantly greater online component than these programs. In fact, it would be one of the first programs in the nation to offer so much of its curriculum through distance learning. Only the University of North Dakota currently offers an EE degree with a comparable online component, although the State University of New York at Stony Brook (SUNY Stony Brook) is about to begin one. Another distinguishing feature of the program is its emphasis on business and societal topics.

## Program Description

The BSEE program aims to provide students with a rigorous learning experience in the fundamentals and applications of electricity, electronics, and electromagnetism in a multidisciplinary learning environment stressing design, teamwork, ethics, entrepreneurship, and civic responsibility. It is designed to be responsive to engineering education reform efforts by the National Academy of Engineering and National Science Foundation. It is also designed to serve both traditional and nontraditional student populations by providing pathways for students who enter UWB as freshman, and also for transfer students. Ultimately, its objective would be to make use of technology to enable students anywhere in Washington (or the world) to obtain a BSEE degree from UWB.

For the online component of the program, content developers would create interactive learning environments including PowerPoint lecture with voice over, and simultaneous presentation and animation of material. Interactive exercises would challenge the student to assess comprehension

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[4] EWU will offer a BSEE at North Seattle Community College beginning fall 2009. At full enrollment, it will serve 40 FTE students and produce 20 graduates per year.

before moving on.  Online messaging and collaboration would allow students to query faculty, perhaps to a greater extent than asking a question in front of a live classroom.  For labs, students would purchase simulation software, solder-less breadboards for interconnecting components, and an electronic lab package that they would use at home.   Students would communicate with each other and professors via Blackboard and E-mail.

To be admitted to the program, students must have completed 33-35 credits of prerequisite courses, including 3-5 credits of English composition; 15 credits of math (calculus with analytical geometry); 10 credits of physics (mechanics, electromagnetism, and oscillatory motion); and 5 credits of general chemistry.

To facilitate access for transfer students, program planners intend to articulate with community and technical colleges including Cascadia Community College and Olympic College.  Program planners have developed a course equivalency guide and intend to use major related programs (MRPs) to facilitate articulation, and they plan to contact every CTC in the state to evaluate articulation. Program planners also are exploring the idea of developing a pilot project with Olympic College, which may ultimately lead to students being able to complete a BSEE at the Olympic College Campus.  In addition, program planners are exploring potential partnership possibilities with Everett Community College, Yakima Valley Community College, and Lake Washington Technical College.

Once admitted, students would take 70 credits, including:

- Thirty-five credits of required EE core courses, including a capstone design course;

- Twenty-five credits of EE electives;

- Five credits of Business Concepts for Engineers (students choose one five credit course from a list of six, including Management Principles, The Business of Engineering, Project Management for Engineers, Economics and Management of Technological Innovation, Competitive Engineering, and Entrepreneurship Workshop); and

- Five credits of Society and Societal Impact for Engineers (students choose one five-credit course from a list of three, including courses such as Engineering and Society; Engineering Technology and Public Policy; and Science, Technology and Society).

Much of the electronic engineering course development already has been done by UWS EE faculty, paid for by the Sloan Foundation grant.  Courses would be based on UWS courses, with some modifications.  For example, EE 215 is a 4-credit course at UWS but would be modified into a 5-credit course at UWB to include additional curriculum on using simulation software.  All EE core courses would be developed by the University of Washington.  However, program planners hope to broaden the set of elective EE electives by sharing courses with the SUNY campuses at Stony Brook, Binghamton, and Buffalo.

Program planners estimate that during its first five years, the program would be taught by an approximate 50-50 mix of tenured/tenure track faculty and lecturers/senior lecturers.[5] Depending on coursework demand, additional courses may be staffed by adjunct faculty or by computing and software systems faculty with expertise in various areas of electrical engineering. Program planners have taken this approach to spare tenure-track faculty from the conflicting demands of having to do original research at the same time they are "program building."

Students would have access to the same infrastructure resources provided to all UWB programs, including counseling, disabled student services, Library,[6] Media Center, Quantitative Skills Center, and the Writing Center. UWB plans to develop specific support services to meet the needs of engineering and distance learning students as other science and technology programs are developed.

To the extent possible, the EE program would leverage the facilities already in place to support the computing and software systems program. In addition, the legislature approved funding for UWB to build a new science and technology building, which is expected to be completed before 2015. The new building would provide laboratory space and may be used for EE elective subjects such as power system and antenna design.

Students would normally complete the program in two years (full-time) or at their own pace (part-time) and would achieve ABET-based learning outcomes including:

- Ability to:
    - Apply knowledge of mathematics, science, and engineering;
    - Design and conduct experiments, as well as analyze and interpret data;
    - Design a system, component, or process to meet desired needs;
    - Function on multidisciplinary teams;
    - Identify, formulate, and solve engineering problems;
    - Use the techniques, skills, and modern engineering tools necessary for engineering practice; and
    - Communicate effectively;
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- Recognition of demand, and an ability to engage in life-long learning; and
- Knowledge of contemporary issues.

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[5] The lecturers or senior lecturers would have Ph.D. degrees and would work under five-year contracts. In addition, the program would hire a full-time tenured director at the onset, and would add a full-time tenure-track assistant professor during each of years three and four. By year four, the faculty would consist of three full-time tenured or tenure-track professors and two full-time lecturers or senior lecturers.

[6] Students would have access to the campus-wide library system, so the program would not require substantial library acquisitions. The program budget includes about $4,000-6,600 per year for library materials.

These student-learning outcomes would be measured using a variety of assessment tools, including problem sets, labs, written examinations, and papers. Students would be assessed within their individual courses, based on learning outcomes identified for those courses. In addition to traditional student course work evaluation, students would be evaluated via a capstone senior project, which would require them to produce a report describing a development, survey, or small research project in electrical engineering.

For program assessment, UWB would employ multidimensional metrics that draw on different constituencies. Program assessment approaches would include:

- Course evaluations;

- Student focus groups;

- Student exit surveys;

- Employer surveys;

- Program advisory committee input;

- Alumni surveys; and

- Follow-up with students who withdraw from the program to determine reasons for dropping out and identify plans for returning for further study.

## Program Costs

The BSEE program would enroll 17 FTE students in the first year, growing to full enrollment of 60 FTE students by the fifth year. To implement the program, its planners have budgeted 1.25 FTE for administrative staff during the first five years; and 3.0 FTE for faculty during first two years, growing to 5.0 FTE for faculty by the fourth year. The program would be funded by general fund state support and tuition. It would require a $188,053 internal reallocation during the first year. At full enrollment of 60 FTE students, the direct cost of instruction would be $799,886, or $13,331 per FTE. In comparison, according to the HECB's *2005-06 Education Cost Study (July 2007)*, the direct cost of instruction per average annual undergraduate engineering student FTE is $13,336 at UWS, and ranges from $6,090 at EWU to $17,778 at Washington State University Vancouver.[7] UWB has budgeted $3,000 for ABET accreditation fees.

## External Review

Five reviewers reviewed the proposal: Dr. el-Hadi Aggoune, Roy C. Anderson Chair Professor and Director of Engineering Programs, Henry Cogswell Polytechnical University; Dr. Michael Smith, Professor, University of Calgary; Dr. Wendy Tang, Professor, State University of New York at

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[7] The WSU Vancouver figure reflects investment in high-demand programs in engineering and computer science. The next highest average cost is $15,976 at UW Tacoma.

Stony Brook; Mr. Kevin Hall, Engineering Manager, Intel Corporation; and Dr. Michael Steinberger, Lead Architect, Signal Integrity Software, Inc.  All five reviewers expressed support for various aspects of the BSEE program.  Reviewers were asked to specifically comment on the appropriateness of an online lab component, and three out of five supported the idea, one opposed it, and the fifth was non-committal.

Dr. Agguone noted the program has many features that make it unique and attractive to prospective students.  He also noted that the core and elective coursework is rigorous and covers essential electronic engineering topics in sufficient breadth and depth, and the business and societal coursework would contribute to the practice of holistic engineering. He also observed there are many advantages to doing labs at home and added the program assessment plan is comprehensive. He made no recommendations for improvement of the program.

Dr. Smith recommended support for the program, although he opposed online labs.  He suggested the program would be improved by making its "on-lineness" more attractive (i.e. he felt that voice over PowerPoint will not attract and retain students); adding more formal teaching of hardware and software testing; and training instructors to teach online.  Program planners responded they would add testing and debug outcomes to course syllabi and acknowledged the need to consider training instructors to teach online, but pointed out that University of Washington Educational Outreach (UWEO) educational expertise would help.

Working students might find the length of the program to be a barrier to obtaining their degree as part-time students, Dr. Smith indicated.  He suggested adding an "upgrade diploma" to the full degree program whereby an employee would be able to show a certificate to an employer after he or she had completed a suitable course grouping within the program.  Program planners responded they would probably work with UW Educational Outreach to broaden certificate program offerings.

Dr. Tang noted that the proposal was well written, and the elective courses and business and societal courses were program strengths.  She indicated that online labs are still an evolving topic so it is hard to render a decision as to whether the advantages outweigh the disadvantages.  She raised some issues with regard to coursework, and program planners responded by clarifying various aspects of the program.  She also wondered whether the program might be understaffed.  Program planners did not formally respond to Dr. Tang regarding staffing, but the proposal indicates they have considered the issue.

Dr. Steinberger noted the program offers good coverage of the fundamentals with an appropriate level of opportunity for specialization.  He also noted that program and student assessment plans are sound, and the proposal addresses the problems of distance learning intelligently. The program would give students an opportunity to gain experience with remote delivery, which is being used increasingly in industry.  Dr. Steinberger made many specific suggestions regarding online labs, computer simulations, teamwork training, and individual course content.  Program planners indicated they would adhere closely to courses previously developed at University of Washington Seattle's ABET approved program, and ask faculty teaching the classes to reflect on Dr. Steinberger's advice.

Mr. Hall noted the program has good depth and breadth of curriculum, appropriate program assessment, and superior student assessment. The program also has a good grounding in the traditional content of a BSEE program and adds innovative approaches to content delivery and student interaction. He endorsed the program's hybrid approach, noting it would prepare students for how engineering is done in today's global economy. He also noted its distance lab component is a step forward in preparing students for how the real world works. In his opinion, people who feel there is a disadvantage to this approach are out of touch with current trends. Mr. Hall made suggestions regarding coursework and equipment, and program planners responded that the program would use the suggested equipment.

## Public Comment

The HECB received 10 letters of support for the program, submitted at UWB's request by individuals and organizations external to UW. These letters have been noted in the previous discussion of employer and community demand.

Additionally, the HECB has received a public comment letter from Dr. Dennis Murphy, Provost and Vice President for Academic Affairs, Western Washington University (WWU). The comment letter notes that faculty in the Engineering Technology Department at WWU have thoroughly reviewed the proposal and believe the program will achieve ABET accreditation as described. The letter raises no objection to the proposal.

Finally, the HECB received a comment letter from Ms. Violet Boyer, President and CEO of Independent Colleges of Washington, Inc. Ms. Boyer objected to the proposed program, on the grounds that student demand is insufficient to fully enroll current electrical engineering programs, let alone start additional programs. She noted that additional programs put current programs in jeopardy. Ms. Boyer also provided a quote from the dean of a current program indicating that additional competition for a shrinking pool of students interested in electrical engineering could effectively shift the burden of educating EE students from families who now opt for a private education to the taxpayers of the state.

In Ms. Boyer's comment letter, she referred to two letters she had submitted previously during the approval process, objecting to the BSEE program on the grounds of insufficient evidence of need for the program and unnecessary duplication of existing programs. According to these letters:

- The shortage of electrical engineering graduates in the Seattle area is due to lack of interest among students, rather than lack of capacity;

- Seattle University (SU) and Seattle Pacific University (SPU) both have well-respected, ABET accredited electrical engineering programs with sufficient unused capacity to admit 40 additional students per class, per year without requiring additional state resources;

- Seattle Pacific University offers a hybrid online/evening degree program focused on working adults that also has capacity;

- SU and SPU coordinate well with community colleges, with as many as 60-75 percent of EE degrees going to transfer students;

- Lack of student interest in electrical engineering is a national trend, as noted in Engineering Trends Quarterly Newsletter's Summer 2008 issue;

- Following the "build it and they will come" strategy is likely to only shift enrollment away from non-state subsidized programs to state-funded programs; and

- There is clearly limited demand from students for electrical engineering programs at present, and to add a fifth program in the Seattle market would be an unnecessary duplication of existing programs.

## Staff Analysis

The BSEE program would support University of Washington Bothell's mission and the *Strategic Master Plan for Higher Education.* Program planners have made it clear the program would be a fundamental step in UWB's plan to increase offerings in STEM fields. Furthermore, the program's significant online component represents the kind of innovation that the HECB is trying to encourage institutions to do.

Program planners provided evidence of employer, student, and community demand for the program. Employment Security Department data (considered in conjunction with the statistic that approximately one-half of engineering graduates enter other occupations) is consistent with employer demand for the program. This is corroborated by letters of support from employers.

Student inquiries and surveys support student demand for the program, as do State Board for Community and Technical College statistics on enrollments by pre-engineering students. The program has potential to benefit students by eventually increasing access to electronic engineering programs for place-bound students statewide.

Community demand for the program is evidenced by letters of support from executives at Cascadia College; Olympic College; and the Center for Educational and Computing Initiatives at the Massachusetts Institute of Technology. In addition, the Puget Sound Engineering Council; the Seattle Section of the Institute of Electrical and Electronics Engineers; and the Washington Biotechnology and Biomedical Association expressed support for the program.

Program planners presented evidence that the program would be of high quality. Students would study a curriculum designed to satisfy ABET criteria, and they would be assessed in a variety of ways that would include a capstone project. Program assessment would employ multiple measures as well.

Students would be taught by a mix of tenured and tenure-track faculty, and lecturers or senior lecturers who would have Ph.D.s and work under five-year contracts. Program planners justified the reliance on lecturers, on the grounds that it would be unrealistic to expect tenure-track faculty to balance program building with other demands on their time during the program's start-up. HECB

staff accepts this rationale and believes that the use of lecturers holding Ph.D.s under stable long-term contracts would probably benefit students by allowing faculty more time to focus on teaching and program development.

During the review process, HECB staff had several concerns about the program, which are listed below:

1. <u>Program Duplication</u>:  Unless UWB more fully leverages the distance learning component of the BSEE program to make it available to underserved regions outside of King County, the program runs the risk of unnecessarily duplicating existing programs; particularly given that EWU will be starting up a BSEE program this fall featuring two-way distance learning and on-site labs at North Seattle Community College.   Public comment from Independent Colleges of Washington focused mainly on issues of need for the program and duplication of existing programs.  Staff shares those concerns and would not recommend approval of a program that would merely draw students away from other institutions in King County, rather than expand access to students in other areas.  The staff recommendation reflects our understanding that UWB intends to make a distance learning option available for students outside of King County, and that UWB has already done some outreach to Olympic College and Everett Community College with this intent in mind.

2. <u>Best Use of Educational Dollars</u>:  Throughout the review process, HECB staff wondered whether state resources would be better spent on a different program that would similarly leverage UWB's existing strengths, such as Environmental Engineering.  However, the potential to serve underserved regions outside of King County and the intended eventual statewide focus of the program make the UWB BSEE program an appropriate use of state resources.

3. <u>Separate Accreditation</u> - Staff is concerned about vulnerability of early cohorts of students with regard to the possibility that ABET might delay or deny accreditation.  Staff would have preferred that UWB eliminate this vulnerability by starting the program as an extension of UWS's existing BSEE program.  Staff asked program planners why UWB chose separate accreditation.  Program planners responded as follows:

   "The UW Bothell program is not identical to the UW Seattle program and therefore must be accredited separately from UW Seattle.  Many of our courses are derived from corresponding UW Seattle courses because the courses were developed for on-line delivery from UW Seattle EE courses with funding from the Sloan Foundation.  The UW Bothell EE program includes 10 credits of required business and societal topics that are not requirements of the Seattle program.  Also, the Seattle program offers areas of concentration while the UW Bothell program is based upon core topics and electives.  The UW Seattle EE program has its set of priorities and educational outcomes for its students, and UW Bothell has its distinct set of priorities and educational outcomes which are determined by its program mission, which includes the hybrid-learning model.  ABET accreditation includes evaluation of an assessment plan to document student learning and program effectiveness.

> Thus, the plan that Seattle uses would not be appropriate for UW Bothell's program. Separate accreditation came up in our initial discussions with one of the local ABET accreditors, Seattle University Professor Emerita Patricia Daniels, whom we've retained as a consultant to help us with the ABET process."

To sum up the most important points, staff finds that the evidence for demand and non-duplication presented by UWB is sufficient, as long as the program is offered in a way that truly increases access to students outside of King County. Furthermore, UW and UWB have sufficiently addressed staff concerns about accreditation.

## Staff Recommendation

After careful review of the proposal and supporting materials, staff recommends conditional approval of the Bachelor of Science in Electrical Engineering at University of Washington Bothell, with hybrid and distance delivery, subject to the following:

Conditions to be met prior to enrolling students:

- UWB must inform prospective students of its accreditation status and the implications of that status for students.

Conditions to be met prior to the earlier of the program's first five-year program review or expansion of the program's enrollment beyond 42 average annual student FTE:

- UWB will demonstrate that it has expanded distance learning opportunities for students;

- UWB will demonstrate that a substantial proportion of students enrolled in the program are being served outside of King County;

- UWB will report to the HECB on the placement results of the first graduating cohort; and

- UWB will notify the HECB when it has obtained ABET accreditation for the program.

The HECB's Education Committee discussed the proposal during its July 9, 2009 meeting and recommended conditional approval by the full Board. The Education Committee also requested information about institutional commitment and program faculty, and UWB responded by submitting the attached letter (Attachment A) indicating that UWB has committed three newly funded full-time faculty positions to complement five existing faculty with expertise in teaching courses necessary for EE. UWB has conducted national searches for two faculty positions and stands ready to make job offers pending HECB conditional approval of the program.

# **W** UNIVERSITY *of* WASHINGTON | BOTHELL

## OFFICE OF THE CHANCELLOR

July 10, 2009

Ann Daley, Executive Director
Higher Education Coordinating Board
PO Box 43430
Olympia. WA 98504-343

*Re: EE Program Proposal and Faculty Hires*

Dear Ann:

I am writing at the request of one of the board members on the Education Committee who asked me to confirm my absolute commitment to the full funding of our new electrical engineering program. Needless to say, I would not have allowed our campus to move forward on this degree unless it had my full support and an identified funding stream to support the faculty and curriculum requirements. We have proposed and plan to implement a University of Washington quality degree program that the state can be proud to endorse.

The degree proposal has been in development for more than 18 months, with substantial and productive collaboration with the HECB staff to insure that we have been able to address all relevant areas of the proposal. As you know, the HECB staff forwarded the final proposal to the Education Committee with their recommendation for conditional approval subject to specified requirements for the implementation of the degree. One of the reasons for support cited by the staff report is that the proposed degree meets several of the HECB's Strategic Master Plan policy goals, including expansion of STEM degrees and expansion of access for nontraditional students.

A question came up during the discussion as to UWB's commitment to faculty resources for the degree, if approved by the HECB. I am writing to affirm that we have committed three newly funded 100% faculty positions to this program to complement the existing five UWB faculty who have expertise in teaching courses necessary for Electrical Engineering. For two of those positions – an associate professor and a senior lecturer – national searches have already been conducted and formal appointments are awaiting HECB approval of the degree. A third position has been allocated for search for the upcoming academic year to have a faculty member in place by the fall of 2010, when the program will be recruiting its full cohort of students. We have thus committed resources that we believe will enable us to start with a quality program from day one.

We would be happy to share a copy of the resumes of the two pending faculty hires for review if you deem it appropriate but we prefer not to provide them publicly since these are pending personnel matters. I assure you, however, that they meet all the qualifications for a faculty member at any campus of the University of Washington.

I look forward to joining you at the next board meeting.

Sincerely,

*Kenyon S. Chan*

Kenyon S. Chan, Chancellor

Randy Spaulding, Director, Academic Affairs, HECB
Mark Bergeson, Associate Director, Academic Affairs, HECB

# RESOLUTION 09-14

**WHEREAS,** The University of Washington Bothell proposes to offer a Bachelor of Science in Electrical Engineering; and

**WHEREAS,** The program would support University of Washington Bothell's mission and the *Strategic Master Plan for Higher Education*; and

**WHEREAS,** The program would spearhead University of Washington Bothell's efforts to broaden its offerings in science, technology, engineering and mathematics; and

**WHEREAS,** The program's students would study a high quality curriculum carefully designed with program-specific accreditation in mind; and

**WHEREAS,** The program has support from external reviewers; and

**WHEREAS,** The program would be offered at a reasonable cost; and

**WHEREAS,** The program would be established using a hybrid model including a substantial online component with potential to ultimately reach students across the state; and

**WHEREAS,** Program planners have expressed University of Washington Bothell's intent to offer a distance learning option; and

**WHEREAS,** Program planners have presented evidence regarding need for the program and nonduplication of existing programs sufficient to warrant conditional approval of the program;

**THEREFORE, BE IT RESOLVED,** that the Higher Education Coordinating Board conditionally approves the Bachelor of Science in Electrical Engineering at the University of Washington Bothell, with hybrid and/or distance delivery, subject to the following:

Conditions to be met prior to enrolling students:

- University of Washington Bothell must inform prospective students of its accreditation status and the implications of that status for students.

Conditions to be met prior to the earlier of the program's first five-year program review or expansion of the program's enrollment beyond 42 average annual student FTE:

- University of Washington Bothell will demonstrate that it has expanded distance learning opportunities for students;

- University of Washington Bothell will demonstrate that a substantial proportion of students enrolled in the program are being served outside of King County;

- University of Washington Bothell will report to the HECB on the placement results of the first graduating cohort; and

- University of Washington Bothell will notify the HECB that it has obtained ABET accreditation for the program.

Adopted:

July 28, 2009

Attest:


_____
Jesus Hernandez, Chair


_____
Roberta Greene, Secretary

**WASHINGTON**

# HIGHER
# EDUCATION
**COORDINATING BOARD**

**July 2009**

## DRAFT:  Economic Vitality Panel

The Higher Education Coordinating Board (HECB) and Washington's higher education institutions are engaged in many activities to promote economic vitality in our state.  This panel highlights two organizations in state government leading strategic planning and measurement of growth and innovation in our economy—the Washington Economic Development Commission and the Evergreen Jobs Leadership Team.  The HECB also is one of ten agencies contributing to the Governor's Economic Vitality dashboard, part of her Government Management Accountability and Performance program.

## Panelists

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# DRAFT - Policy and Planning Connections
## 15 Key Linkages of 2009 HECB Projects

| | Tuition Flexibility Study | Technology Transformation Study | Financial Aid "Transparency" (*Re-labeling*) | Performance Agreements | Higher Education Reinvestment Policies and 2011-13 Fiscal Priorities |
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| **System Design Plan** | What tuition policy would best support changes in the future size and shape of the system? | How can technology transformation increase the capacity of the system to serve underrepresented regions? | How can "re-labeling" increase the participation of underrepresented groups? | What new systemic outcome measures emerge from the system design plan? | What fiscal priorities are needed for funding the system design plan? |
| **Tuition Flexibility Study** | | Should different tuition levels be considered for non-seat time instruction? | How can "re-labeling" be used to reduce tuition *"sticker shock"*? | Should state & student cost-sharing policy be a consideration of performance agreements? | Should the Board include tuition revenue as part of its biennial budget recommendations? |
| **Technology Transformation Study** | | | How will technology transformation be used to support awareness of financial aid resources? | Should the agreements include targets and incentives for non-seat based instruction? | Should the Board identify technology infrastructure investments as a high fiscal priority? |
| **Financial Aid "Transparency" (*Re-Labeling*)** | | | | Should the agreements include institutional roles, outcomes, and incentives for supporting *re-labeling*? | Should the 2011-13 fiscal priorities include funding financial aid "awareness" and outreach activities? |
| **Performance Agreements** | | | | | How will specific performance outcomes and incentives be integrated into the Board's budget recommendations? |