Vice President Tom Imeson called the meeting to order at 1:30 p.m. On roll call, the following members answered present: Diane Christopher, Gail McAllister, and Phyllis Wustenberg. Board President Herb Aschkenasy was unavailable to participate.

Also present in the Eugene office were Chancellor Cox, Vice Chancellors Anslow and Clark, Associate Vice Chancellor Foute, and Board Secretary Virginia Thompson. Portland office attendees included Interim Vice Chancellor Bob Dryden; Vice Chair of the Engineering and Technology Industry Council Bruce Schafer; OIT Provost Martha Anne Dow; Oregonian Reporter Romel Hernandez; OSSHE Media Relations Specialist Francesca Clifford; and, OSSHE Director of Corporate Relations Lisa Stevens.

The Engineering and Technology Industry Council has forwarded the following set of recommendations for Board approval and advancement to the Legislative Emergency Board.

There are three proposals that have been presented by the Council for approval and allocation of funds specified under SB 504:

1. Master of Engineering Program
2. Additional Graduate and Continuing Education Programs
3. OPT for Co-Op Program
Recommended SB504 Allocation
October 20, 1997

Based on the criteria set out in Senate Bill 504, the Engineering and Technology Industry Council has developed a recommended allocation based on proposals and follow-up work by participating educational institutions.

The criteria set out by SB504 are:

- Portland area graduate-level professional education.
- General capacity and physical facilities for engineering in Portland area.
- Cooperation between OGI and OSSHE.
- Strengthen community college technician programs and link with rest of higher education.
- Strengthen OIT technology programs.

After discussing a wide-variety of proposals, the Industry Council decided to focus its recommendation in three areas (outlined below). Programs have been designed in each of these areas which share the following characteristics:

- Produce measurable results for Oregon and the targeted student population.
- Deliver relevant high-quality courses in the Portland area.
- Have specific milestones which can be monitored.
- Foster collaboration between institutions.
- Deliver the maximum results for the available investment.

The programs will be authorized by outcome-based contracts. The Industry Council will monitor the progress of these programs on a quarterly basis with subcommittees monitoring them on a monthly basis. This oversight will assure that the programs stay on track, problems are resolved quickly, and the targeted results are obtained.

A summary of the programs is as follows:

<table>
<thead>
<tr>
<th></th>
<th>New Courses</th>
<th>Sessions per year</th>
<th>Full-Time * Students</th>
<th>Students ** x sessions per year</th>
<th>Biennium Cost</th>
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<tbody>
<tr>
<td>Master of Software</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Engineering Program</td>
<td>14</td>
<td>14</td>
<td>N/A</td>
<td>360</td>
<td>$2.25M</td>
</tr>
<tr>
<td>Graduate &amp; Continuing</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional Education</td>
<td>19</td>
<td>27</td>
<td>100</td>
<td>405</td>
<td>$2.25M</td>
</tr>
<tr>
<td>OPT for Co-Op Program</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>100</td>
<td>N/A</td>
<td>$0.50M</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$5.00M</td>
</tr>
</tbody>
</table>

* Excludes part-time students which are the primary focus of most of the programs.

** Includes both full-time and part-time students in second year of program. Programs are designed to support substantial growth in following years.
Master of Software Engineering Program
Executive Summary

Vision
- Create high-quality program to educate technical leaders.
- Give Oregon a competitive edge in software innovation and quality.
- Serve both those who want an advanced degree and those who want to upgrade their skills in specific areas.
- Deliver courses at times and places that suit the needs of working professionals.
- Put Oregon on the map in Software Engineering Education.

Goals for a World-Class Program

Industrial Relevance: Meet Oregon industry’s employment needs for year 2000 and beyond.

Academic Excellence: Leverage Oregon faculty areas of excellence and recruit additional faculty.

National Prominence: Nationally unique program focused on advanced, relevant software engineering technology.

Industry Needs

Customer Orientation: Provide students with the skills to meet Oregon industry’s software engineering needs for the year 2000 and beyond.

Disciplined Development: Ability to understand, measure, manage and control an effective, predictable, repeatable software development process.

Product-Centered Development: Ability to adapt and apply a disciplined software engineering process in the context of a complete product development.

Acquisition of Market-Leading Technology: Ability to understand, adopt, adapt, and apply best emerging software engineering practices, methods, and tools to meet changing business needs.

Professional Competency: Ability to lead/work effectively with a software engineering team and other business areas and communicate effectively with management and coworkers.

Business Context Understanding: Understanding of the business context and ability apply skills to address overall business goals.
MSE Educational Goals
Address Oregon industry's skill needs in:
Technical Mastery: mastery of the technical subject
- Software engineering technology
- Management skills
- Communication skills
Context Understanding: ability to understand and use knowledge of the context to make effective SE decisions
- Business and organizational knowledge
- Disciplined software development knowledge
- Critical thinking skills
Strategic Thinking: ability to look beyond today's development to meet future business needs
- Advanced software engineering technology skills
- Apply new technology to meet strategic business goals

Distinguishing Program Themes
Software Engineering in Context
- Focus on useable technology and skills
- Study use of technology in real-world context
- Study business issues affecting development
- Learn personal and teamwork skills
Addresses Oregon industry need for graduates who can make an immediate contribution

Strategic Software Engineering
- Focus on market-leading technology
- Study process and product-family engineering
- Study SE in context of strategic business decisions
Exploit Oregon faculty excellence to address future industry need for software engineering leadership

Milestones
Winter 98
- Set up Board of Directors
- Hire Executive Director
Spring 98
- Hire senior faculty member
- Pilot one to three MSE Courses
Summer 98
- Pilot more courses
- Hire additional faculty
Fall 98
  • Begin offering core courses in Portland area
  • Enroll 30 Part-time students in program

Winter 1999-Fall 1999
  • Pilot distance learning
  • Enroll 30 Student FTEs in program
  • Students x Course Sessions = 360
  • Because most students will be part-time, expect to serve 90 students

Winter 2000-Fall 2001
  • Offer in all four locations via distance learning
  • Enroll 60 Student FTEs in program
  • Students x Course Sessions = 720
  • Serve 180 full and part-time students

Winter 2002-Fall 2002
  • Enroll 100 Student FTEs in program
  • Students x Course Sessions = 1200
  • Serve 300 full and part-time students

Financial Summary
  • Projected average tuition: $300 per credit hour
  • Actual tuition may be higher with discounts available based on need.
  • Investment required in first two years: $2.25M
Graduate and Continuing Professional Education
Investment Program Highlights

- Builds capacity by adding four new faculty in Portland area ($1.5 million).¹
  - Two in electrical engineering at OGI (semiconductor engineering and multimedia engineering).
  - One in computer engineering at PSU.
  - One in electronic materials at OGI.
  - Adds at least 4 new courses and 12-15 additional course sessions in areas directly related to Portland high technology industry.
  - Builds research capabilities in areas important to Portland high technology industry.

- Establishes masters-level intern program with a focus on serving the Portland area ($250k).
  - Initial investment funds start-up (19 months).
  - Requires up-front commitment from participating companies to accept interns who meet their qualifications.
  - Self-sustaining after start-up phase from fees paid by participating companies on a per-intern basis.
  - After start-up, produces approximately 100 M.S. graduates in computer science, computer engineering, electrical engineering, electronic materials science, and manufacturing engineering. It is expected that most of the interns will come from outside the Portland area and upon graduation will take jobs in the Portland metropolitan area with the companies with whom they intern.

- Supports the development and delivery in the Portland metropolitan area of 10 new graduate level courses targeted at the high technology industry in Portland ($250k)
  - Supports courses in computer science, computer engineering, electrical engineering, electronic materials science, and manufacturing engineering.
  - Open to all Oregon institutions (OSU, UO, PSU, OGI, UP) that provide graduate education in the relevant areas.
  - Requires proposing faculty/institutions to document Industry need/demand by "on-the-ground" market research.

- Supports the development of 5 new courses delivered through modern multimedia technology ($250k)
  - Provides asynchronous, on-demand learning opportunities to students from industry.
  - Content areas targeted at industry needs (computer science, computer engineering, electrical engineering, electronic materials science, and manufacturing engineering).
  - Uses Web, CD-ROM, or other appropriate technology.

¹ The difference in the allocation between OGI and PSU is due to the difference in funding models between the two institutions. OGI's model allows a faculty member to become self-supporting through research grants and tuition income while PSU's model requires a commitment to state support in the OSSHE budget in future years.
<table>
<thead>
<tr>
<th>$M</th>
<th>Nature of Investment</th>
<th>Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1,200</td>
<td>Hire three new faculty at Oregon Graduate Institute. Two of these faculty will be hired into OGI's Department of Electrical Engineering and will have specializations in semiconductor engineering and multimedia engineering. The third faculty member will be hired into OGI's Department of Materials Science and Engineering and will specialize in electronic materials.</td>
<td>The new faculty who will be hired by June 98 will develop research programs and teach courses in electronic materials (materials characterization, electronic packaging, etc.), semiconductor engineering (IC and VLSI design and processing, etc.), and multimedia engineering (digital signal processing, digital video, image processing, etc.). After a one year ramp-up period the new faculty will teach approximately 9 new graduate level courses per year. On average these courses will enroll approximately 15 part-time students from industry. All such courses will be available to both matriculated and non-matriculated part-time students from industry. The specific courses to be taught will be targeted at the needs of regional high technology industry as determined through market research by the faculty developing the courses.</td>
</tr>
<tr>
<td>$0.300</td>
<td>Hire a computer engineering faculty person into Portland State University's Department of Electrical and Computer Engineering.</td>
<td>The new faculty person who will be hired by June 98 will establish a research program aligned with regional industry interests and needs and will teach 3-6 graduate level courses in computer engineering per year. On average these courses will enroll approximately 15 part-time students from industry. All such courses will be available to both matriculated and non-matriculated part-time students from industry. The specific courses to be taught will be targeted at the needs of regional high technology industry as determined through market research by the faculty developing the courses.</td>
</tr>
<tr>
<td>$0.250</td>
<td>Establish a robust full-time M.S. Internship program with a focus on serving the Portland area. The funds would be used to hire a director and an assistant and provide them with the necessary resources to recruit (a) the companies to accept the interns and (b) the full-time M.S. students to become the interns. Internships would be available in electrical and computer engineering, computer science, (electronic) materials science, and manufacturing engineering.</td>
<td>A program manager will be hired in January 98. By June 98, fifty intern positions will be established at high tech companies and fifty full-time students will be recruited to fill the positions. By June 99, the number of intern positions will increase to one hundred. At least 75% of the intern positions will be established at Portland area companies. The program will be designed to minimize the amount of commuting or relocating required of students. Typically, a student would spend the first three months at a company, the next nine months on campus (but still at least 10 hours per week at the company), the next 6 months approximately full time at the company, and a final 3-6 months on campus finishing any courses and writing a report on the Industrial experience. Self-sustainability would be achieved by charging the companies a fee (e.g., $5k) for every intern position they have. Students would be responsible for paying their own tuition, but the industrial scale salaries they would receive during the time spent in industry would offset much if not all of the tuition burden. The $0.25 million will cover the period 12/1/97-6/30/99. From 7/1/99 onward the program will be self-supporting.</td>
</tr>
<tr>
<td>$0.250</td>
<td>Create new graduate level courses in computer science, computer engineering, electrical engineering, materials science, manufacturing engineering and deliver in the Portland metro area.</td>
<td>10 new courses in topics directly relevant to the regional high technology industry would be created. A faculty person proposing the course would have to produce credible documentation (derived from &quot;on-the-ground&quot; market research) supporting the industry need/demand for the course. Course proposals would be accepted from any Oregon institution (PSU, OGI, OSU, UO, UP) teaching graduate courses in the respective areas. All courses would be delivered in the Portland metropolitan area. A request for proposals will be made in January 98 with proposals due in March 1998. Awards will be made in April 98. 3 new courses will be delivered in Fall 98, 3 in Winter 99, and 4 in Spring 99.</td>
</tr>
<tr>
<td>$0.250</td>
<td>Create new graduate level courses available asynchronously (i.e., on demand) for students from industry.</td>
<td>5 new graduate level courses using modern multimedia technology (Web, CD-ROM) for asynchronous on-demand learning by students from industry will be created. A request for proposals will be issued in January 98 with proposals due by April 98 and awards made in May 98. The five new courses will be available by Winter 99.</td>
</tr>
</tbody>
</table>

$2,250 Total investment.
OPT For Co-Op Program
Executive Summary

The Oregon Professional Technologist program (OPT for Co-Op) is designed to encourage young people to learn about the career opportunities in Oregon's high tech industry. It is intended to develop career technological professionals who will be able to contribute at any levels within their employing companies, and who will want to grow with the high tech industry. The program will begin with the junior year in high school and end with the bachelor's degree. The options for the students will be to begin full time work at the end of high school, at the end of the community college education or at the end of the four year college education.

The proposal is to begin with a pilot program in the Portland area that will involve two high schools (Benson and Forest Grove), one community college (PCC-Sylvania) and OIT. It is anticipated that a degree program can be designed and implemented that will allow the students to complete their four years of college in four calendar years as the coursework is designed to be not only transferable but completely embeddable. Business and industry will be asked to provide co-op jobs for the students at all of the levels.

The funds will be used to coordinate the program with the high schools, community college and business and industry. The curriculum will be reviewed at all of the levels and designed so the students have a smooth transition. In addition, scholarships will be available to the students to help them with the cost of their education.

The key steps will be:

Jan. 98-Dec. 98 Establish curriculum working group consisting of instructors from the participating schools. Identify detailed curriculum modules for inclusion in existing academic programs and explore development of curricula for programs targeting new industry sectors.

Jan. 98-Dec. 98 Establish Industry Steering Committee consisting of industry representatives from each participating company. Identify and develop cooperative education placements to compliment students career objectives. Identify potential industry internship site for teachers.

February 98 Talk to parents and students in the high schools and get the students signed up for the program.

March 98 Meet with community college students to get them involved in the program.

June 98 50 High school students begin co-op jobs.

Sept 98 Meet with OIT students to get them involved in the program.

Jan 99 Community college students begin co-op jobs.

June 99 50 OIT students begin co-op jobs. Total of 100 students participating.
The goals for the students will be:
- improve learning by reinforcement gained through industrial experience.
- gain an appreciation of the relationship between theory and application.
- learn about new developments in their field of interest.
- timely and extended opportunities for developing communication skills orally and in writing.
- work with professional engineers in actual problem solving situations.
- develop self confidence.
- develop human relations skills through interaction with co-workers.
- establish contacts that will be valuable when seeking employment in the future.
- easing the transition from being a student to full time employment.
- develop financial and time management skills.
- develop high degree of professionalism, job readiness and realistic expectations upon graduation.

OPT FOR CO-OP BUDGET
DECEMBER 1, '97-JUNE 30, '99

<table>
<thead>
<tr>
<th>Personnel</th>
<th>Amount</th>
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<td>Director</td>
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<td>Staff Support</td>
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<td>High School / CC Co-Op Coord (1)</td>
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<td>Travel</td>
<td>10,000.00</td>
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<td>Publications/info dissemination</td>
<td>20,000.00</td>
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<tr>
<td>Scholarships (30 @ 3000.00)</td>
<td>90,000.00</td>
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<tr>
<td><strong>sub total</strong></td>
<td><strong>124,200.00</strong></td>
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**GRAND TOTAL** $500,000.00
Executive Committee Meeting

Staff recommendation to the Board

Staff recommended that the Board approve the allocation of Emergency Board funds as outlined in the proposal from the Engineering and Technology Industry Council.

Executive Committee Discussion

Chancellor Cox provided a brief overview of the rationale for the meeting: at the October Board meeting, the full Board gave authority to the Executive Committee to approve the recommendations of the Engineering and Technology Industry Council, so that they could be taken to the Emergency Board in November. To accomplish that, the final proposal, as approved by the Board, needed to be submitted to the Department of Administrative Services by noon on Monday, October 27.

Senate Bill 504, approved by the 1997 Legislature, established a fund for engineering and technology in Oregon and initiated partnerships between public and private institutions to ensure the state's needs are being met for trained engineering and technology professionals.

The legislation also directed the Chancellor to create an Engineering and Technology Industry Council to receive and review proposals and make recommendations for use of the $5 million allocated by the legislature for this biennium.

Interim Vice Chancellor Dryden reviewed the programs under consideration by the Committee and noted that they are the result of more than two years of discussion and planning.

I. Master of Software Engineering Program

Ms. Wustenberg asked why the software engineering program had not been established under the statewide College of Engineering, adding that she felt these programs should be under the umbrella of the statewide School of Engineering, thus eliminating duplication in administration. Chancellor Cox explained that the program actually preceded the structure. He suggested that Jim Huntzicker of OGI become part of the group thus including both public and private entities in the structure. Mr. Schafer remarked that it would add symmetry. Mr. Imeson and other Board members agreed it would be a wise move.
II. Graduate and Continuing Professional Education

Dr. Dryden provided an overview of the Graduate Continuing Professional Education portion of the proposal. He said that conversations initially revolved around a concentrated investment versus a broadcast or diversified plan. It was ultimately determined by the Council that this program will be initiated in Portland and expanded from there.

Ms. Wustenberg asked when industry would begin to invest resources into the effort as well. Mr. Schafer said that two things would need to happen for this to occur: 1) show industry that this is a worthwhile endeavor, and 2) make it someone’s job in the College of Engineering to raise funds.

Ms. Christopher asked if, at sometime in the future, money could be infused into undergraduate programs as well. Mr. Schafer said that currently in the market, there is an imbalance between opportunities and talent that requires attention. He said that in the future, undergraduate programs would certainly be looked at. He finished by mentioning that what tipped the scale was the fact that thousands of existing engineers are trying to remain competitive, and that is the reason that the initial dollars should go toward graduate and continuing education.

Chancellor Cox said that if the proposal is approved, he would certainly communicate to the Emergency Board that significant contributions to undergraduate education should occur in the future.

Ms. Christopher asked for an explanation of the breakdown of funds of $1.5 million for the graduate program. Chancellor Cox explained that there is a difference in the way faculty are hired at OGI. Because of the way in which the institution is funded, there is no tenure and, because faculty do not have any long-term guarantees, they are compensated in a different way.

Ms. McAllister commented that the $5 million investment is a start in the right direction for engineering in Oregon. She added that she agreed that the Chancellor should send the message to the Emergency Board that an investment in undergraduate education is important as well.
III. OPT for Co-OP

Chancellor Cox noted that both Dr. Dryden and Mr. Schafer deserve credit for highlighting the technology needs of Oregon.

Ms. Christopher asked what might happen without future funding. Dr. Dow said that OIT is struggling with that question, and key administrators are currently developing scholarship incentives. She admitted there are still questions around sustainability, so the programs are being integrated, so that it becomes a part of the infrastructure of the institution.

Ms. Wustenberg re-iterated that it is logical and appropriate for a great deal of coordination and non-duplicative administration to occur in this element of the proposal as well as with others.

IV. Other questions, comments, action

Ms. Christopher asked Mr. Schafer about the actual process of working with the Council. Mr. Schafer said there was some trouble scheduling meetings. He added that there was good campus participation and six-eight executives from the private sector, but that a fair amount of work was accomplished at the subcommittee level. He added that he is open to other means for future meetings such as teleconference, videoconference, meeting in Salem, to ensure increased participation.

Ms. Christopher noted that a number of institutions stand to receive money from these proposals, yet there was only one president included on the Council. Mr. Schafer said that perhaps the institution representatives should be more involved on the staff side. Ms. Christopher said that she thought that should be presented before the Board. Chancellor Cox indicated that was the original plan and he assured the Executive Committee that the process will be smoother in the future.

Mr. Imeson asked for a motion to approve the proposal before the Executive Committee. Ms. Christopher moved and Ms. Wustenberg seconded the motion to approve the recommendations. On roll call the following voted in favor: Directors Christopher, McAllister, Wustenberg, and Imeson. Those voting no: none.

The meeting adjourned at 2:20 p.m.