

**2007-2009 OUS Agency Request Budget  
Policy Package Proposal  
Draft, 5/4/06**

**Title: Oregon Pre-engineering & Applied Sciences – Enhancing Opportunities for Oregonians to Participate in the Growth of Oregon’s Economic Clusters**

**Agency Request 2007-2009:**

General Fund	\$1,100,000
Other Funds Limited	0
Other Funds Non-limited	0
Total	\$1,100,000

**Policy Initiative:** Enhanced access, improved alignment, efficient transfer, enhanced academic excellence, increased number and diversity of Oregonians with advanced skills to participate in the growth of Oregon’s economic clusters.

**Description:** Representatives from all educational sectors, industry, and non-profits have come together to create a statewide initiative for pre-engineering & applied sciences. This work was begun at a statewide summit in September 2005 co-sponsored by OUS, ODE, CCWD, and two foundations. It is being carried forward by a steering committee and a set of subcommittees covering the following areas:

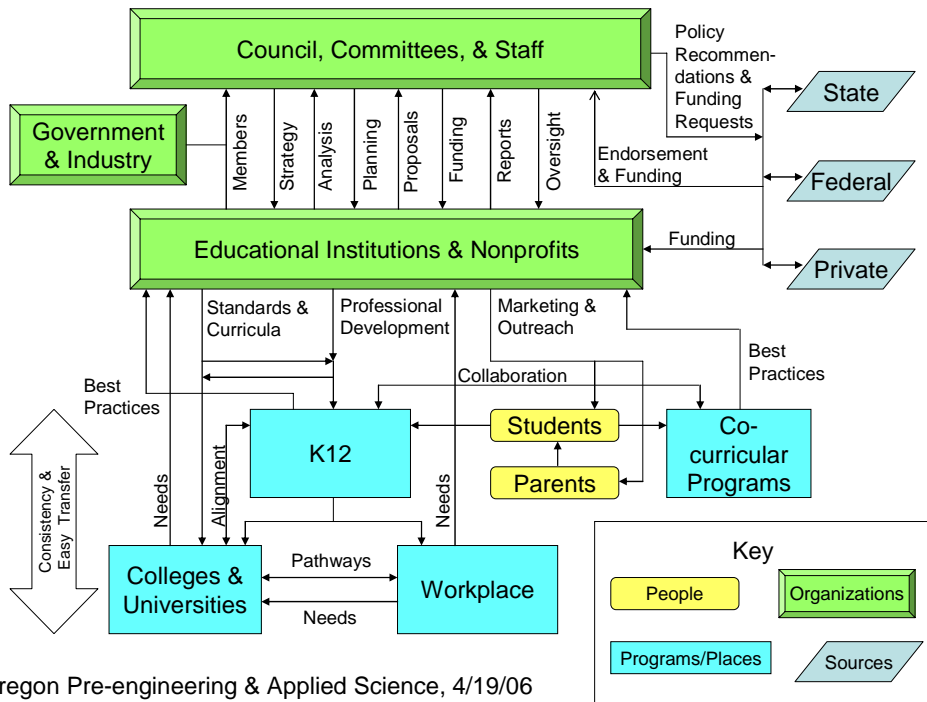
- Alignment and coordination: system-wide
- Alignment and coordination: curricular and co-curricular
- Standards, courses, and curricula
- Student success: access, motivation, and retention
- Career and degree pathways
- Instructional Professional Development
- Diversity
- Marketing

OPAS is working on developing the following opportunities:

- **Standards & Curricula:** Enhance K-20 science, technology, engineering & mathematics (STEM) standards and curricula. Provide all students engaging experiences that
  - provide insight into the relevance of these subjects to solving problems in the real world so as to provide motivation to pursue challenging technical fields;
  - develop research and problem solving skills necessary in college and the workplace; and
  - ensure literacy in science and technology and preparation for the next level of study and work.
- **Alignment:** Support the development and implementation of policies and practices throughout the educational system that
  - increase the *consistency between standards and assessment* at one level *and the prerequisites* for the next level; and
  - assure that *credit can be easily transferred* in the pursuit of an associate’s degree or a bachelor’s degree.
- **Professional Development:** Grow and enhance professional development programs that allow K12 and college faculty to more effectively deliver STEM curricula and assure consistency between the outcomes of courses and the prerequisites of subsequent courses.

- **Pathways:** Create a customizable framework for career and degree pathways in applied science and engineering.
- **Collaboration:** Facilitate the adoption of appropriate *best practices* from the traditional classroom in co-curricular programs and vice versa. Integrate engaging experiences and skill development featuring research methods and problem solving into the delivery of curricula to enhance motivation, understanding, and retention of both key principles and detailed knowledge.
- **Marketing and Outreach:** Initiate and enhance marketing and outreach efforts to assure that all students, parents and school personnel understand the educational and career opportunities available to students and the steps required to reach them.
- **Diversity:** Make these opportunities available to students *regardless of gender, race, or socioeconomic background*, with specific focus on under-represented populations.

These opportunities are diagrammed below:



Oregon Pre-engineering & Applied Science, 4/19/06

### Expected Outcomes:

This investment will

- increase the opportunity for Oregonians to gain insight into technical careers,
- add relevance and thus motivation to the learning of mathematics and science
- provide concrete examples and hands-on experiences, increasing the depth of understanding and subsequent retention of the knowledge and skills
- complement other efforts to enhance mathematics and science education
- bring together best practices from the curricular and co-curricular world
- enhance the teaching skills of Oregon's teachers
- reach out to students and parents throughout Oregon to give them a better understanding of the opportunities available to them and the steps required to take advantage of them.

**Performance Indicators:**

- Percent of graduates employed and/or continuing education (#23)
- Percent of employed graduates working in Oregon (#24)
- Total number of degrees granted in engineering and computer science (all levels; including multiple majors) (#22)
- Average rating of overall quality of engineering/computer science graduates by Oregon employers (#6)

**Budget Outline:**

Funding would go toward providing staff support to this planning and coordination effort and providing grants using a competitive bidding process and to implement initiatives and programs in the opportunity areas described above as well as supporting analysis and evaluation. Leadership for this effort will be provided by existing staff within the Industry Affairs Department of the Chancellor's Office and peer organizations of the Oregon Department of Education and Community Colleges & Workforce Development. Oversight is provided by the OPAS Steering Committee (Appendix A) or a successor Council and its several subcommittees. Supporting staff is budgeted at 9.1% of the total. The remainder of the budget is allocated to the competitive bidding process.

FTE's and position titles: 0.75 FTE Program Coordinator

<b>Recurring Costs</b>		
	Year One	Year Two
Salary	\$31,500	\$34,000
OPE	\$14,500	\$15,000
S&S (1)	\$401,000	\$401,500
Capital Outlay	0	0
Technology Expenses	\$250	\$250
<b>Total Cost</b>	<b>\$447,250</b>	<b>\$450,750</b>

<b>One-Time Costs</b>		
	Year One	Year Two
Salary		
OPE		
S&S (2)	\$100,000	\$100,000
Capital Outlay		
Technology Expenses	\$1,000	\$1,000
Phase In		
Phase Out		
<b>Total Cost</b>	<b>\$101,000</b>	<b>\$101,000</b>

**Notes:**

- (1) \$400,000 per year to be awarded as grants after a competitive proposal process.
- (2) \$100,000 per year to be awarded as grants after a competitive proposal process.

*OPAS Steering Committee*

William Becker	Director, Center for Science Education, Portland State University
Susan Boyanovsky	Instructional Programs Specialist, Comm. Colleges & Workforce Develop.
Aubrey Clark	Community Education Relations Specialist, Intel Corporation
Steve Day	Science Specialist, Beaverton School District
Don Domes	Technology Instructor, Hillsboro High School
Van Eden	Academic Programs Manager, Microsoft
Larry Flick	Chair, Dept. of Math & Science Education, Oregon State University
Scott Huff	Dean of Instruction, Portland Community College
Don Kirkwood	Computer Science Instructor, North Salem High School
Dick Knight	Chairman, Board of Advisors, Saturday Academy
Dave Krumbein	Instructor, Blue Mountain Community College
Diana LaBoy-Rush	President, Columbia River Section, Society of Women Engineers
Ben Manny	Director, Wireless Networking Research Lab, Intel Corporation
Ron McGuire	Technology Instructor, Roseburg High School
Dale Merrell	Technology Instructor, CAPITAL Center Technical High School
Gary Naseth	Associate Provost, Oregon Institute of Technology
Ginger Redlinger	Education Program Specialist, Oregon Department of Education
Roger Rennekamp	Professor, Department Head & State 4H Leader, Oregon State University
Skip Rochefort	Professor, OSU Engineering
Diane Saunders	Director of Communications, Oregon University System
Bruce Schafer	Director, Industry Affairs, Oregon University System
John Tortorici	President, Software Association of Oregon
Jim Troisi	Senior Software Manager, IBM
Hyacinth Williams	Director, Math, Science, Business and Technology, Columbia Gorge CC
Michal Young	Professor, Computer Science Department, University of Oregon,