



## OPAS Vision 2020

**Alt 1: Oregon industry and K-20 education will have a sustained, highly skilled and diverse workforce of “home-grown” engineers, technology professionals and teachers to support business, education, and state economic needs.**

**Alt 2: All Oregonians have the opportunity to choose and successfully pursue engineering or applied science as their field of study and career, thereby helping Oregon’s industries innovate and prosper in the global economy.**

## OPAS Mission 2020

To increase the number of work-ready engineers and applied scientists in Oregon through collaboration of education sectors, industry, and government stakeholders that ensures that all K-12 students have access to high quality education and career exploration opportunities that prepare them for postsecondary and workplace opportunities and success.

## OPAS Opportunity

Through OPAS, Oregon has an unprecedented opportunity to effectively address shortages in the numbers of skilled engineers and applied scientists who can support Oregon’s industries. Experts from around the state are participating in working groups which are mobilizing education, business, and government resources statewide to spur “pipeline” growth and quality. By working collaboratively among multiple sectors to address barriers and seize opportunities, OPAS can

- affect policy and practice,
- spur growth in quality programming for K-12 students,
- support professional development of our science, math, and technology teachers, and
- create a sustained and well supported movement in Oregon that
- positively affects our state economy, and
- Oregon’s ability to compete in the global marketplace.

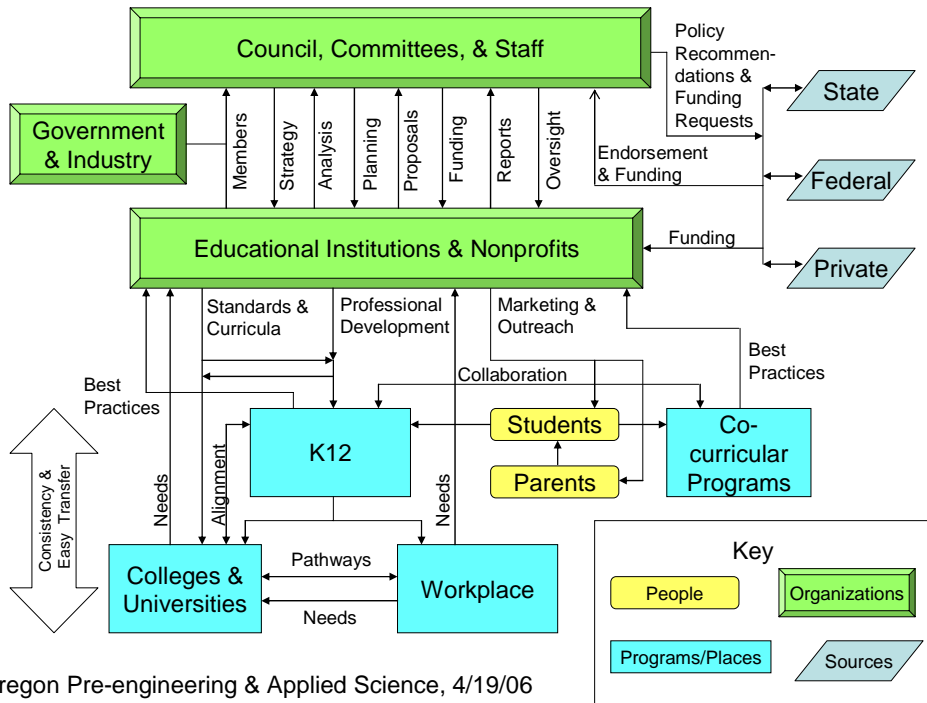
## Goals for OPAS 2020

- **Shared leadership and responsibility** among public and private K-20 institutions and employers for program improvement, efficiency, enhanced learning, and accountability.
- **Access to engaging and motivating coursework** for all K-12 students that prepares them for collegiate study in engineering and applied science while developing skills for life-long learning and career success, including understanding key organizing concepts like inquiry and practical problem solving.
- **Coordinated, flexible, and clearly articulated educational pathways** that allow students to efficiently plan their education and successfully transition among Oregon educational institutions and the workplace.
- **Coordinated curricular and co-curricular programs** that offer all students a strong combination of theory and hands-on education through a variety of individual and team experiences.
- **Opportunity to pursue advanced technical education** available to all Oregon students.

- **Diverse, well-educated and work-ready college graduates** productively employed by and contributing to current and developing Oregon businesses, and with competitive skills needed in the global marketplace.

## OPAS 5-Year Strategic Goals

- **Enhance standards and curricula** in K-20 science, technology, engineering & mathematics (STEM), providing all students with engaging experiences that
  - provide insight into the relevance of these subjects to solving problems in the “real world” and motivation to pursue challenging technical fields;
  - develop research and problem solving skills necessary in college and the workplace;
  - ensure literacy in science and technology and preparation for the next level of study and work.
- **Align standards, assessment and prerequisites** to ensure that credit can be easily transferred from secondary to postsecondary levels by supporting development and implementation of policies and practices throughout the educational system.
- **Expand and enhance professional development** programs that allow K-12 and college faculty to more effectively deliver STEM curricula and assure consistency between the prerequisites and outcomes of courses.
- **Create customizable career and degree pathways** in applied science and engineering.
- **Integrate best practices** from the traditional classroom with co-curricular programs and vice versa, incorporating engaging experiences and skill development with research methods and problem solving into the delivery of curricula to enhance motivation, understanding, and retention of both key principles and detailed knowledge.
- **Initiate and enhance marketing and outreach efforts** that ensure all students, parents and school personnel understand the educational and career opportunities available, and the steps required to reach them.
- **Ensure equity in opportunities** available to all of Oregon’s diverse students, with specific focus on under-represented and under-served populations.
- **Increase funding** from federal, state, and private sources through collaboration among stakeholders that will enable achievement of OPAS goals.



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

### Measurable Outcomes *[Work in progress]*

- Number of teachers featuring engineering and technology ...
- Number of new high school pre-engineering programs approved by Oregon Department of Education increases from x per year in 2005 to y per year by 2010.
- Number of Oregonians choosing engineering and applied science as field of study as college freshmen increases by x% by 2010 compared to the baseline year of 2005.
- Number of Oregonians completing Associates 's degree in engineering or applied science increases by x% by 2012 compared to the baseline year of 2005.
- Number of Oregonians completing Bachelor's degree in engineering or applied science increases by x% by 2015 compared to the baseline year of 2005.
- Number of women completing Bachelor's degree in engineering or applied science increases by x% by 2015 compared to the baseline year of 2005.
- Number of under represented minorities completing Bachelor's degree in engineering or applied science increases by x% by 2015 compared to the baseline year of 2005.
- The percentage of recent bachelor's degrees that are employed by Oregon companies increases to x% by 2010 and y% by 2015 compared to the baseline year of 2005.
- Oregon's rank in engineering degrees per capita ... improves from x to y by ...