

OPAS Steering Committee Meeting #7
Tuesday June 27, 2006
Capital Center 3:30 – 5:00

Attending: Jay Bockelman (OIT), Scott Huff (PCC), Dick Knight (Friends of Saturday Academy, ACCC), Tom Lieurance (Columbia Gorge CC), Ben Manny (Intel), Bruce Schafer (OUS/ETIC), Diane Saunders (OUS), John Tortorici (SAO), Yvette Webber-Davis (OUS), Jo Oshiro (OUS/OPAS), Jeremy Tucker (OUS/OPAS)

Summary:

The OPAS Initiative goals:

- Increase the number and diversity of college students who choose engineering or applied science as their major;
- Positively impact the level of preparedness of those students;
 - Depth of understanding and knowledge retention of Oregon HS students as measured by (inter)national tests;
 - Technical Literacy of all students.

Any recommendations made must keep in mind our target audiences: policy makers, opinion leaders, and implementers. OPAS Staff, aided by Dick Knight, Jay Bockelman, Ben Manny, Yvette Webber-Davis, Scott Huff and Di Saunders, will take the ideas coming out of our discussions of the Paradigms for Curricular Change/Strategic Alternatives and develop specific recommendations that we can evaluate on these criteria:

- How well this moves us toward our goal
- How soon the impact occurs
- Relative level of risk:
 - cost
 - complexity
 - obtainability of endorsements/support
 - obtainability of funding
- Leverage of interest and expertise for OPAS Initiative participants

OPAS needs to form alliances, perhaps with OHSU, and position itself as part of the solution of improving K-14 educational rigor, relevance, and relationships rather than as another special pleading or curriculum-of-the-week. Eventually we need to change not just the K-14 curriculum, but go to the source and change the way future teachers learn to teach STEM. Experiential learning needs to be mainstreamed into the classroom curriculum not just for potential engineering students, but for potential health workers and all students.

OPAS staff will articulate a clear set of goals for a fall workshop/conference for OPAS committee members. It will include time for subcommittees to work independently. These goals will be used to determine if we want to actually hold such an event. Possible venues are the Capital Center, OMSI, or a venue similar to Summit 2005 (PCC Rock Creek).

The OSBE Policy Option Package process is undergoing change to consolidate the number of POPs; the OPAS POP was well-received by EDP (OSBHE Excellence in Delivery and Productivity Workgroup).

Graphic design work on the "River Analogy" as a presentation tool for the OPAS Initiative continues; a new revision will be ready for the next meeting.

The **next meeting** is scheduled for **Wednesday July 12, 2006 3:00-5:00** at the Capital Center. Please note the earlier start time. The next agenda will also include updates:

- Workforce 2005, (SB 364) so that we have visibility of what is going on in the PTE world, both as a potential source of resources and leverage or a potential quagmire. OPAS Committeepersons Susan Boyanovsky and Rane Stempson are on this taskforce.
- Oregon State Board of Education (OSBE) work on HS graduation requirements.

Discussion Points:

- We want to change reality - how so? Looking at the Paradigms for Curricular Improvement ...
 - Bruce - Discussed the paradigms at the ASEE conference earlier this month. All agreed we are on the right track; similar debates are taking place on the national level and in other states.
 - Cary Sneider - high school staff member at the Boston Museum of Science pushed for technology and technical literacy, something closer to our Technical Enhancement Paradigm
 - Eric Iverson - ASEE- head of K12 staff, would have chosen something closer to our Redesign Paradigm)
 - Dick- Do we know what is going on with PTE (Professional Technical Education) and the legislature? How will that affect OPAS?
 - Bruce- Some professions heavily tied to PTE are pushed through a bill (SB 364, sponsored by Kurt Schrader of the Ways and Means Committee) due to a perceived disinvestment in PTE in Oregon High Schools. This resulted in the Workforce 2005 Task Force, which must report to the 2007 Legislature. Some perceive this as a bill to guarantee the education of Oregon's future tradespeople. PTE is also affected by federal Perkins dollars, which may or may not continue to flow. Two OPAS members, Susan Boyanovsky (CCWD) and Rane Stempson (Microsoft) are on it.
- Evaluation Criteria for Paradigms
 - Number of students vs. Preparedness - Quality or Quantity?
 - Both important, but numbers are most important
 - Ben - remedial work can be done in college; not ideal but possible. Interest is paramount. What is missing from HS is experiential learning of engineering disciplines in the mainstream HS classroom.
 - Dick - We have exciting stuff that makes learning math and science relevant.

- John - cast your net wide enough and diversity will follow
 - Jay - will the jobs be there for these graduates? Is it OPAS' job to publicise that?
 - Bruce - at the moment we have a Money Magazine survey
 - #1 - Software Engineer, 46.07% growth nationwide next 10 years
 - #7 - Computer/IT Analyst, 36.10% growth ditto
 - #17 - Engineer, 13.38% growth ditto
 - in general, OPAS has assumed the jobs will be there
 - growth and the wider use of technology
 - graying of the workforce
 - must have engineers for a viable economy
 - OPAS should maybe provide PR for jobs/careers as part of a wider effort
 - Ben - another squeeze on the numbers is that as emerging economies grow, our top foreign graduates tend to go home instead of working in the US.
- Today's question: what should our schools be teaching
 - Dick - It is a mistake to choose between the Paradigms. We want to increase the number of students, the rigor and the relevance. The "new" 3Rs - Rigor, Relevance, Relationships.
 - AP/IB working
 - Add redesign into academic enhancement
 - It is an OPAS speculation that adding Engineering Problem Solving to curricula will increase relevance for the students.
 - Scott- Redesign is long-term process that must work across state lines. Cooperation with other similar initiatives in math, science, and technical literacy. See AMATYC effort, funded by the NSF, to infuse math across the curriculum at the Community College Level. (*Jo notes: see also ITEA technical literacy standards, Project 2061 science standards.*)
 - Dick- Engineering is not a special pleading; we can't assume engineering will take math captive. We must work for lots of students. Make changes relevant to Health sciences as well as engineering. More job growth is predicted in health sciences and technology than engineering, and many of their issues are similar to ours.
 - Ben- Engineering is becoming much more relevant to medicine and the health industry than ever before.
 - OPAS needs to form alliances and position itself as part of the solution of improving K-14 educational rigor, relevance, and relationships rather than as another special pleading or curriculum-of-the-week.
 - Ben - What is missing in High School is experiencing the discipline in the mainstream. At the end of the day, we want that experience in the classroom curriculum.
 - Jay: Don't just change curriculum, go to the source and change the way future teachers are taught.

- Yvette - Did we get teacher colleges to weigh in? At what point will this be valuable input? (Will brainstorm with Bruce offline to leverage their expertise)
- Action Items:
 - OPAS staff to draft a set of recommendations based on the Paradigm discussions, for the next meeting; use committee members as brainstorming partners, sounding boards, and reviewers (see list in summary), available at the next meeting.
 - Graduations requirements
 - Curricular changes
 - Dick Knight to capture his points of discussion and highly pictorial notes in an email
 - OPAS Staff to draft a list of concrete goals for a fall workshop/conference to be available at the next meeting; the committee will use that list to decide whether to move forward on the event. Possible venues are the Capital Center, OMSI, and someplace like PCC Rock Creek, which we used for OPAS Summit 2005.
- Update on Subcommittees
 - Jo - the most exciting thing this month was our focus group of MESA teachers, a joint effort of Instructional Professional Development (IPD) and Student Success: Access, Motivation, and Retention (SAMR). MESA has been phenomenally successful at getting educationally underprivileged students through middle school, high school, and college and into STEM careers. MESA programs are in place in several states. Discussion notes are available by clicking [here](#).

Next Meeting Agenda - Wednesday, July 12, 2006 3:00 - 5:00 (*Please note earlier time!*)

- Updates
 - Workforce 2005
 - OSBE HS Graduation Requirements
 - Policy Option Package
 - River Analogy Communication Tool
- Continuing work:
 - Draft Recommendations (possible audience OSBE and other policy makers)
 - Workshop/conference goals. Possibilities
 - Moving from "What" to "How"
 - 2007 Goals for OPAS Initiative

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*Respectfully submitted June 28, 2006,
Jo Oshiro and Jeremy Tucker*