

In the OPASsphere – April 10, 2009

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A service of the Oregon Pre-Engineering & Applied Sciences Initiative (OPAS) funded by ETIC

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Events – Announcements

- The **George Fox University Engineering Expo** will be held on **Friday, April 24**, beginning at **4:30 pm** -- <http://www.georgefox.edu/academics/undergrad/departments/engr/expo09.html> --new this year: high school design projects and demonstrations; later in the program see industry-sponsored senior design projects. Contact Kristin Bontrager via 503.554.2780 or kbontrager@georgefox.edu for more.
- **Superintendent Susan Castillo invites you** to join educators, legislators, parents, community leaders, and business leaders, as we recognize 19 of Oregon's dedicated, innovative, and successful schools at the **5th Annual Celebrating Student Success Banquet**. Watch inspirational videos highlighting these schools' stories. Learn what is working in communities around the state to help all students succeed. Celebrate the progress these schools -- <http://www.ode.state.or.us/initiatives/closinggap/2009-ctag-press-release.pdf> -- are making in closing the achievement gap.
When & Where: Friday May 1st, 2009 6-8pm at the Oregon Convention Center, Portland
pre-event reception and registration to start at 4:30 with entertainment and no-host bar.
Who: Anyone interested in closing the achievement gap in Oregon
Cost: \$40 per seat / \$400 for a table of ten
Register through April 22nd: www.ode.state.or.us/go/CTAG or contact Crystal Greene at 503-947-5650 or crystal.greene@state.or.us
- **2009 Human Powered Vehicle Challenge** Friday, May 1, 2009 - Engineering Building - Intel/Gordon & Betty Moore Atrium, Portland State University - 2:00 p.m. - 4:00 p.m. – for more: <http://www.pdx.edu/cecs/educational-outreach> (scroll down). Follow-on events at the Tektronix campus in Beaverton on Saturday and Sunday
- **American Indian Science and Engineering Society National Conference**, Portland Convention Center October 29-31, 2009 -- <http://www.aises.org/Events/NationalConferences/2009NationalConference>

Events – Wrap-Up

- The Oregon University System (OUS) and Johns Hopkins University Center for Talented Youth collaborated on a **Family Science Day event about Robotics**, held at the Portland State University campus on April 4. About 155 parents and students in grades 7-10 came for a selection of hands-on sessions given by faculty from PSU, OSU, EOU and volunteers from the Oregon Robotics Tournament

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and Outreach Program (ORTOP – www.ortop.org) and the PacNorthwest FIRST Robotics Competition teams from Oregon City, Philomath, and Riverdale. Overall, the event was judged a success, and ORTOP plans to revise some of its training workshops based on their learnings from this event.

Volunteers Needed

- Eastern Oregon University's Department of Computer Science/Multimedia wants **industry feedback** to fine-tune its programs – take the **survey** here:
http://www.surveymonkey.com/s.aspx?sm=85eMM3AgD9FxD7ycLudvGQ_3d_3d
- **Review science projects for the Beaverton K-8 Science Expo** on April 30 at the Tektronix Campus in Beaverton: Judges review student projects and provide positive written and verbal comments about student projects. Students are in K-8th grade and are from all Beaverton schools. You do not need to have a strong science background, you just need to be interested in encouraging students in science research. This fair is non-competitive, so if you like listening and seeing student's projects without having to "grade" them, then this would be a great opportunity for you. Judges arrive at approximately 5:15 pm and get a free dinner provided by Tektronix and a brief training. Review of science projects occurs from 6:00 - 7:45 pm. Each judge reviews about 6-9 projects. To sign up or get more information, please contact Susan Holveck at 503.672.3680 or susan_holveck@beavton.k12.or.us
- **Oregon MESA Day at PSU**, Friday May 15. This year's activities include Trebuchet Competition, Math Scavenger Hunt, Impromptu Design Challenges, and introducing for the first time... Windmills! Excited to participate? It's easy to register at http://www.mesa.pdx.edu/mesa_day/mesa_day_2009.htm

Weblinks

- **KnowHow2go**: Another tool to help you create a **college-going culture** in English or Spanish -- <http://www.knowhow2go.org/index.php> – pushes back all the way to middle school, and seems like a good warm-up to navigating through the applications and admissions process.
- **Celeste Baine comments on NSTA** conference in New Orleans -- http://www.engineeredu.com/celestes_blog/2009/03/nolansta.html and lists her **top 10 favorite engineering programs** here -- http://www.engineeredu.com/celestes_blog/2008/12/topten.html
- **DeHavilland Associates**, a consulting firm that works in the business-education partnership space and publishes free white papers and a subscription newsletter, the *K-12 Partnership Report* – <http://www.dehavillandassociates.com/index.html> -- *Thanks to Tim Brower and Mary Beth Horton*

Funding

- “The U.S. Department of Education's Institute of Education Sciences (USED IES) has **awarded Oregon a \$3.7 million grant to provide statewide formative assessment resources** for our schools. The grant proposal was a collaborative effort between the Oregon Department of Education (ODE), the University of Oregon (UO), Oregon State University (OSU), schools of Education throughout the Oregon University System and the Educational Enterprise Steering Committee comprised of ODE, ESD, Districts and

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Postsecondary partners". For more information, see the ODE Superintendent's Update #301:

<http://www.ode.state.or.us/news/announcements/announcement.aspx?=4735>

Equity

- WAMC Northeast Public Radio **Women in Science** audio programs -- <http://www.womeninscience.org/about.htm>
- **Eastfield College NSF STEP program**, connecting high schools, community colleges and university in a 2+2+2 model -- Eastfield College, in Mequite, TX , part of the Dallas Community College District, has been able to **increase enrollment in STEM courses by underrepresented groups by 57%. Retention rates have risen from 15% to 46%**. They have been able to do this by trying to change the way their students looks at science -- <http://www.eastfieldcollege.edu/rcd/nsf/index.htm> .
- **The Girl Solution** -- <http://www.braincake.org/toolkit/GSHome.html> -- modeling "relationship science" -- that is, science as a process and tool to do something, rather than an end in and of itself. Many resources. [*Jo notes: annoyingly pink; would have repelled my daughter when in middle school.*] Part of the Braincake website, taglined "the sisterhood for scientifically minded teens". Jo is interested in any feedback, and hopes to investigate in more depth.

Articles

- **Morphing Community Colleges**, Inside Higher Ed, April 7, 2009 -- <http://www.insidehighered.com/news/2009/04/07/aacc> -- very interesting reading, especially in light of the current economy (more "non-traditional" students, aka displaced workers) and Oregon's changing demographics (more future students to whom college-going is a new and perhaps radical idea.)
- **(AP) Oregon State engineers move into 'geomatics'**, The Oregonian, 3.21.2009 -- <http://www.oregonlive.com/newsflash/index.ssf?/base/news-30/1237660744117300.xml&storylist=orlocal> -- CORVALLIS, Ore. (AP) — One of the latest high-tech buzzwords is "geomatics," and Oregon State University engineering students are embracing it. The university says it is forming a partnership with two leading companies to help address the need for more surveyors who can help move the profession into a new era of sophisticated 3-D data, remote sensing and other new technologies. The partnership with David Evans and Associates Inc. and Leica Geosystems Inc. will make available hundreds of thousands of dollars worth of state-of-the-art geospatial equipment and software. Industry experts from David Evans and Associates will also work closely with Oregon State students and faculty in training and laboratory studies. University officials say the nation faces an increasing shortage of professional geospatial information surveyors essential to infrastructure improvements planned for the economic recovery effort. *Copyright 2009 Associated Press. All rights reserved.*
- **Computer Science Classes Get Their Groove Back**, March 27, 2009, Andrea James, Seattle Post Intelligencer via HispanicBusiness.com – Enrollments are l up, but there's a lot of ground to recover -- http://www.hispanicbusiness.com/news/2009/3/27/computer_science_classes_get_their_groove.htm

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- **Want to rebuild the Economy? Ask An Engineer**, February 26, 2009, Senator Edward E. Kaufman, D-Del, HispanicBusiness.com --
http://www.hispanicbusiness.com/news/2009/2/26/want_to_rebuild_the_economy_ask.htm

Research

- **The Federal Role in Out-of-School Learning: After-School, Summer Learning, and Family Involvement as Critical Learning Supports**, Weiss et al., February 2009, Harvard Family Research Project --<http://www.hfrp.org/publications-resources/browse-our-publications/the-federal-role-in-out-of-school-learning-after-school-summer-learning-and-family-involvement-as-critical-learning-supports> -- **Four decades of consistent research evidence** demonstrate it is necessary to redefine learning—both where and when it takes place—and to follow up with innovations that enable communities to move to a complementary learning approach, if the country is to achieve its national goal of educating all children.
- **Lifestyle Choices Steer Women Away from STEM Careers**, March 4, 2009, R&D Magazine --
<http://www.rdmag.com/ShowPR.aspx?PUBCODE=014&ACCT=1400000101&ISSUE=0903&RELTYPE=PSC&PRODCODE=00000000&PRODLETT=BC&CommonCount=0> --"It appears that the family-career trade-offs constitute a major factor in the dearth of women in fields such as engineering, physics, computer science and in higher-level positions in non math-related fields," said Ceci. "Women who are good in math seem to have more career options. Those who are highly competent in math are more likely than men to have high verbal competence, too, thus opening up the option of going into the humanities or law, which may offer more flexibility in their career tracks."

Field Reports

- **Dean Livelybrooks from UO Physics:** The Eugene Water and Electric and Electric Board started and runs the annual EWEB Solar Challenge, which has middle schoolers building small-scale solar powered electric vehicles in their classrooms, racing for a classroom champion, and sending champions to a race day attended by about 400 students, plus parents and teachers in the Eugene 4J, Bethel, Springfield, Fern Ridge and Crow-Applegate-Lorane School Districts. The 12th Annual EWEB Solar Challenge Race Day. will be held at Cal Young Middle School in Eugene on 6-June, 2009 --
http://cartt.4j.lane.edu/solar_challenge/index.htm . The EWEB team also has developed a variety of science curricula and resources for K-12, including a pico-turbine curriculum --
<http://cartt.4j.lane.edu/index.htm> . The UO Physics team has participated in every Solar Challenge after the first one 12 years ago. Physics undergrads. and GK-12 Fellows (Chemistry and Physics grad. students in an NSF program) have staffed the Design Competition at the start of race day, where we ask students about design of their cars, do a "roll-down" test to see how they convert GPE into KE, etc. Students can win prizes in the Design Competition regardless how they do in the races.

Classroom Resources

- **New 2009 Science Academic Content Standards Now Available in ODE's REAL Database -- The Oregon State Board of Education** adopted the 2009 science academic content standards at their February meeting -- www.ode.state.or.us/teachlearn/subjects/science/curriculum/2009feb-adopted-k-h-science-standards.pdf. These 2009 science standards are now available in the ODE REAL database

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www.ode.state.or.us/teachlearn/real/standards/sbd.aspx. Supporting documents are expected to be posted in Summer 2009. *Thanks to Cheryl Kleckner and the Oregon Science Teacher Update from ODE.*

- **Microsoft To Expand Free Software Program To High Schools** -- Bloomberg News (3/27, Peterson) -- <http://www.bloomberg.com/apps/news?pid=20601103&sid=aR2VjQFEqpew&refer=us> -- "Microsoft Corp. Chairman Bill Gates said the company will give high-school students free software-design tools to invent programs that can run on the Windows operating system and devices such as mobile phones" in "an expansion of the company's DreamSpark initiative, which lets college students download tools such as Windows Server and Visual Studio for free." Gates noted that "college students have downloaded more than 2 million copies of the programs since Microsoft...began DreamSpark a year ago," which is "almost double what the company expected." *Thanks to Dick Knight.*
- **Carnegie Mellon University Robotics Academy** -- <http://www.education.rec.cmu.edu/> -- you can sign up for the e-newsletter "The Botline".
- **The US Department of Energy, the X PRIZE Foundation, and Discovery Education** have created www.FuelOurFutureNow.com an on-line knowledge center for the science of alternative fuels and energy-efficient engineering with targeted curriculum and lesson plans for all grade levels, with high-quality video, dynamic interactive, and other resources. *Thanks to Cheryl Kleckner and the Oregon Science Teacher Update from ODE*
- **NASA's Digital Learning Network** is presenting a **series of videoconferences** to assist educators to stay current on NASA education resources and related products. See producers and authors demonstrate their materials on such topics as meteorology and virtual worlds – <http://dln.nasa.gov/dln/content/webcast/> -- *Thanks to Cheryl Kleckner and the Oregon Science Teacher Update from ODE*
- MCREL and Stanford have released the first modules of the "**Nanoleap into New Science**" project, which integrate real-world nanoscale science and engineering research into high school chemistry and physical science courses using topics normally taught in those classes. Modules are standards-based, with teacher guides, assessments, student activities and experiments and were thoroughly vetted and evaluated in high school classrooms during development – www.mcrel.org/nanoleap/ps -- *Thanks to Cheryl Kleckner and the Oregon Science Teacher Update from ODE*

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