

In the OPASsphere – January 8, 2008

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

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Events – Announcements

- **Junior Engineering Technical Society (JETS) National Engineering Design Competition (NEDC) Semifinals** – Teams of students present their assistive technology devices: check it out on **January 13** at <http://www.jets.org/programs/nedc/semifinals.cfm>

Volunteers Needed

- The **Oregon Robotics Tournament and Outreach Program (ORTOP)** seeks adult volunteers for their upcoming Intel Oregon Championship tournaments January 17 and 18 at Liberty High School in Hillsboro. Student teams will be assessed for their robotics engineering, climate research project and teamwork. If you are interested in being a Teamwork Judge or a **Day-of-the-Event Volunteer (lots needed – mature teens welcome!)**, please review additional information at our volunteer site. -- <http://volunteer.ortop.org> – *Thanks to Cathy Swider.*
- **Science Fair Judges: Beaverton's Meadow Park Summa Academy** students and their teachers need your support to listen to 6-8th grade students' science project presentations to select 10 students to nominate to the Northwest Science Expo at Portland State University. Your professional feedback means the world to the students and their teachers. Students, who have done research in your areas of expertise, will be assigned to present to you and a small group in the library. Please contact Susan Duncan or Toni West to sign up for one or more sessions on **Tuesday January 20 or Wednesday, January 21**. Time slots vary from 7:40 am to 2:10 pm: 7:40 - 9:00; 9:05-9:58; 11:00 - 11:52; 11:29-11:52; 12:22-12:49; 12:25 -12:49; 12:50 - 2:10; 1:23-2:10
 - Susan Duncan - Susan_Duncan@beavton.k12.or.us - 503-259-6260 message
 - Toni West - Toni_West@beavton.k12.or.us - 503-672-3660 school
- **Presenters needed for the PAVTEC Gender Equity Team 14th Annual Math, Science, and Technology Conference for Middle School Girls**, Thursday, April 30, 2009, 8:30 am to 1:30 pm, PCC Rock Creek Campus -- Register your presentation via <http://www.pcc.edu/pavtec/girls/confapp/presenter.cfm> or

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contact Michelle Roberts via e-mail at mrrobert@pcc.edu or by fax at 503-614-7805. The website also has information and photos on previous conferences.

Contests –

- **ExploraVision** -- <http://exploravision.org/> -- **Deadline for entry January 28, 2009** – prizes include cash and notebook computers – “Designed for K–12 students of all interest, skill and ability levels, ExploraVision encourages kids to create and explore a vision of future technology by combining their imaginations with the tools of science. All inventions and innovations result from creative thinking and problem solving. ... Since 1992, more than 245,000 students from across the United States and Canada have competed in ExploraVision. But this is much more than a contest. ExploraVision can be the beginning of a lifelong adventure in science, as students develop higher-order thinking skills and learn to think about their role in the future.”
- **Engineering Education Service Center (EESC)** is sponsoring an **Engineering Curriculum Contest** with categories for elementary, middle, and high school. **Deadline is April 30, 2009** -- <http://www.engineeredu.com/contestcurr.html>

Weblinks – Focus on Classroom Practice

- **Teacher Professional Development Forum**, Teacher Magazine -- <http://www.teachermagazine.org/forums/?plckForumPage=ForumDiscussion&plckDiscussionId=Cat%3a047dba43-3f1d-45c3-831f-9125f292c0a4Forum%3a349ef86d-a56b-4951-99de-c1838dca95ecDiscussion%3a198e0d48-f25e-4bb5-bd8f-0db4f77c5422&plckCategoryCurrentPage=0>
 - Posted by Tom McDougal: “The best PD I have experienced focuses on implementing new ideas in the classroom. That is Lesson Study, the primary form of PD in Japan. Lesson Study has a clear track record of enabling profound changes in instructional practice. I won't describe it here; Wikipedia has a decent short summary. But Lesson study embodies important ideas brought up by earlier postings. It is teacher-led, it provides opportunities for teachers to exercise leadership, and, most critical, it is focused on the "practicality of integration ... A few web sites for teachers interested in learning more:
 - http://hrd.apecwiki.org/index.php/Lesson_Study
 - <http://www.lessonstudygroup.net>
 - <http://www.globaledresources.com>
- University of Hawaii, **Honolulu Community College Faculty Development Teaching Tips** Index – aimed at college faculty, many of these look adaptable to younger students <http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/teachtip.htm#top>
 - **Learning Style Inventory** -- <http://www.personal.psu.edu/bxb11/LSI/LSI.htm>
 - **Using Questions Effectively** -- <http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/teachtip.htm#questions>
 - **Diversity and Complexity in the Classroom** -- <http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/diverse.htm>

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- North Carolina Educators: **Three Essential Sets of Skills for All Educators** -- <http://www.ncwiseowl.org/kscope/educators.html> -- very accessible resources for educational practice useful for teachers, parents, students, and any volunteer (classroom, scout leader ...) who has ever had to engage a group of students of any age. Jo especially likes the **Brain Research** and **Best Practice** Quizzes.
- From ODE's Superintendent's Update #287: **Teacher Quality Moves to the Head of the Class as the New Year Approaches**: Three recent newsworthy events have combined to place a renewed focus on teaching quality in Oregon and help position the state at the vanguard of the nation's renewed commitment to education.
 - The Oregon State Board of Education endorsing the National Staff Development Council national standards.
 - The Chalkboard Project's new partnership with the National Commission on Teaching and America's Future (NCTAF) will gather state leaders to form a coalition charged with developing a statewide strategy to improve teaching quality in 2009
 - President-elect Barack Obama announced his pick for secretary of education, Chicago Public Schools Supt. Arne Duncan.
 - For more: <http://www.ode.state.or.us/news/announcements/announcement.aspx?4458>
- **Chalkboard wants your opinion – survey still open** -- Four years ago, The Chalkboard Project conducted a survey asking Oregonians about the most crucial issues facing Oregon schools. In 2008, Chalkboard is asking for your opinion again. To participate, please click on the link to the brief online survey. www.chalkboardproject.org

Funding

- **Professional Development funding for Individual and Teams of Teachers** -- <http://www.fundforteachers.org/>
- The **Governor's Recommended Budget, Tax Expenditure Report, and the Budget Summary** can be found at the following Web sites:
<http://www.oregon.gov/DAS/BAM/GRB0911intro.shtml>
<http://www.oregon.gov/DOR/STATS/exp09-11-toc.shtml>
- **Youth Venture** <http://www.genv.net/> is launching a new program called "**Invent Your World**" with support from the Lemelson Foundation. Through the program youth aged 12 – 20 can apply to receive up to \$1,000 in support for an invention-based venture. More information about the program can be found here: <http://genv.net/en-us/invent>. Please help the Lemelson Foundation spread the word!
- **Knowles Science Teaching Foundation (KSTF) Teaching Fellows** are young men and women who have received a bachelor's or advanced degree in science, engineering or mathematics and are committed to teaching high school science and/or mathematics in U.S. schools. The fellowship supports them professionally and financially for up to five years through a teacher preparation program to eligibility for tenure -- http://www.kstf.org/teaching_fellowships_home.aspx

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- **RGK Foundation** awards grants in the broad areas of **Education, Community, and Medicine/Health**. The Foundation's primary interests within **Education** include programs that focus on formal K-12 education (particularly mathematics, science and reading), teacher development, literacy, and higher education -- <http://www.rgkfoundation.org/public/guidelines> -- Jo notes: a quick review of their 2008 Education grants shows only a smattering of grants dealing with math and science education, which the web page says is one of their sweet spots; perhaps they are not getting well-thought-out proposals that address these?
- **Toshiba America Foundation** -- <http://www.toshiba.com/tafpub/jsp/home/default.jsp> -- supporting, on various cycles, K-12 math and science education. The "Featured Grants" page is particularly interesting.

Articles

- **What has Driven Women out of Computer Science?** New York Times Digital Domain, November 15, 2008 http://www.nytimes.com/2008/11/16/business/16digi.html?_r=2 -- Thanks to Chris Brooks
- **ACM Urges Obama to Include Computer Science as a Core Component of Science and Math Education; Statement Emphasizes Critical Role of Computer Science as 21st Century Skill** -- in high school -- *Thanks to Jay Bockelman* -- <http://www.ascribe.org/cgi-bin/ behold.pl?ascribeid=20081216.132145&time=13%2052%20PST&year=2008&public=1>
- (AP) **Gates Foundation invests in higher education**, The Statesman Journal, 12.9.2008, by Donna Gordon Blakinship -- <http://www.statesmanjournal.com/apps/pbcs.dll/article?AID=200881208044> -- The nation's 1,200 **community colleges** have a new friend in Seattle: the Bill & Melinda Gates Foundation. The foundation announced an initial round of \$69 million in grants for the two-year colleges and their students with a goal of encouraging more 20-somethings to get a post-high school degree or certificate before starting a family. The foundation is joining a small group of large charitable organization that support community colleges, and plans to spend up to half a billion dollars over the next four years on this project ... The grants announced Tuesday will:
 - Research what higher education promotion programs work and support demonstration projects for new ideas.
 - Encourage state leaders to share information about the value of higher education.
 - Support outreach activities through organizations that target kids from low-income families.
 - Identify the best remedial education programs and work toward sharing ideas with other colleges.
 - Research and promote job-training programs.
 - Provide scholarships for low-income students, with an emphasis on rewarding progress and performance instead of attendance.
 - Find other ways to support college students, such as money for child care and other student needs like housing, transportation and emergency expenses.

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- **US Math and Science Students on Par**, Teacher Magazine, December 9, 2008 --
http://www.teachermagazine.org/tm/articles/2008/12/09/americanmath_ap.html?tmp=402506882 – U.S. students have made significant gains in math since 1995 and score above average on international fourth- and eighth-grade tests in the subject, according to a study released Tuesday. However, the United States has a long way to go to lead the world in math. The study reported dramatically higher math scores in five Asian countries — Hong Kong, Singapore, Taiwan, Japan and Korea — than other countries participating in the study. *Jo notes: “on par” only if one considers 5 Asian countries outliers rather than leaders, and if one pays more attention to the curriculum-tied TIMSS assessments for 4th and 8th graders than the application-tied PISA assessments for 15 year olds.*
- **STEM Pathway to Innovation Education/Career Insert**, Milwaukee, WI Business Journal October 2008
http://opas.ous.edu/PLTW_Advocacy/WI_Milwaukee_Business_Journal_STEM_PLTW_102108.pdf

Research

- **"Learning to Work, Working to Learn: Transforming Career and Technical Education"**, 2008, National Association of State Boards of Education (NASBE) -- Recommendations:
 - Provide meaningful opportunities for all middle and high school students to engage in rigorous and relevant CTE
 - Engage industry and community leaders in meaningful partnerships
 - Integrate CTE and academic coursework, standards, and multiple assessments. Recognize students for career-focused learning.
 - Ensure seamless transitions for students from high school to post-secondary and beyond
 - Develop policies to address quality, recruitment and compensation for CTE instructors
 - Address the poor image of CTE with educators, parents, guidance counselors and the public
 - http://opas.ous.edu/Committees/Resources/Publications/NASBE_CTE_Report_2008.pdf

Who's Who

- **Biographies for the 111th Congress' freshman**, with particular attention to their stance on education --
http://opas.ous.edu/Committees/Resources/NonOPAS_Working_Papers/111th_Congress_Freshman_Biographies.pdf

Field Reports – Robots Rule in Oregon

- LEGO in LaGrande! -- <http://www.lagrandeobserver.com/News/Local-News/High-level-Legos-Students-software-controlled-robots-tackle-climate-change-at-tourney> -- Jo notes that this is the best press coverage of a LEGO tournament I have seen, correctly covering all aspects of the competition. Thanks to Marilyn Levine.

Data

- The **TeachEngineering** website noted under Classroom Resources also some great resources for those of you writing white papers and powerpoint presentations on the future of engineering education and STEM workforce -- Sullivan, Jacquelyn F. (2006) "**Broadening Engineering's Participation - A Call for K-16 Engineering Education**," The Bridge, Washington, DC: National Academies Press, vol. 36, no. 2 --
<http://www.teachengineering.org/publications.php> -- An excellent, readable and accessible summary

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of engineering education and workforce issues, with international comparative data and literature citations, calling for systemic change. "It is critical to our nation's helath that we make bold, coherent K-16 engineering choices and bring engineering out of the shadows. ... Our challenge is to make the possible probable for our educational system and [the engineering] profession."

PLTW

- **PLTW Selects ZPrinter 450 as Preferred 3D Color Printer.** For information on Z Corporation 3D printing grants, -- <https://www.zcorp.com/forms/Project%20Lead%20the%20Way/form.aspx?LST-PLTWwebsite>
- **Middle Schooler talks Bubble Wrap** -- http://www.newsherald.com/news/bubble_70070_article.html/wrap_bush.html

Classroom Resources

- **TeachEngineering** -- <http://teachengineering.org/index.php> - "The TeachEngineering digital library provides teacher-tested, standards-based engineering content for K-12 teachers to use in science and math classrooms. Engineering lessons connect real-world experiences with curricular content already taught in K-12 classrooms. Mapped to educational content standards, TeachEngineering's comprehensive curricula are hands-on, inexpensive, and relevant to children's daily lives."
- **College Preparatory Mathematics** -- <http://www.cpm.org/> -- a curriculum that purports to address 21st century skills issues with mathematics teaching and learning, has recently been adopted by the Tigard-Tualatin School District. *To Jo's cursory inspection of the website, CPM avoids several of the issues that raised parent concerns about Beaverton's adoption of the Interactive Math Program (IMP) curriculum--* <http://www.beavton.k12.or.us/beaverton/classes/imp/imp.htm> -- *Thanks to Michele Vitali*
- **Raytheon Corporation** has a website for 11-13 year olds -- <http://www.mathmovesu.com/> -- We'd love to hear teachers' and students' opinions.

Fun Stuff

- **LEGO Creation Nation** -- <http://www.legocreationnation.com/> -- looks like there might be a yearly contest coming up! See the relationship between Google and LEGOs! Cake-baking and LEGO!

Best wishes to you and yours for a happy, healthy, and prosperous New Year!

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