

Center for Educational Outreach

e-Newsletter Issue No. 8
November 2011

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Featured Biographies

Dr. Kenneth Smith
Professor, Scientist
and Outreach Leader



Unhappy with the number of Native Americans entering STEM professions, Dr. Kent Smith, a member of the Comanche Nation and an Associate Professor of Anatomy at Oklahoma State University, created the Native Explorers Foundation.

This program exposes Native American high school students to science fields and encourages them to actively pursue a degree and career in science.

Last summer students learned about healthy lifestyles, anatomy, and fossils. This was followed by a paleontological dig in the Mojave desert. Native American traditions and culture were also part of the program. To find out more about Dr. Smith or his Native Explorers program visit his [web page](#).

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Each November 11th Americans take time to remember those who have served in our nation's Armed Forces. But did you know that in addition to providing security to our citizens, the U.S. military runs and supports countless STEM activities and initiatives each year? In honor of Veteran's Day we've featured STEM activities both funded and run by various agencies under the Department of Defense.

November is also Native American Heritage month, and in that vein we have highlighted Kenneth Smith, a Native American scientist who started an outreach program directed at Native American students. Our second biography features a scientist whose invention has made a difference both in battle and on the homefront.

Resources for Teachers

Classroom Resources

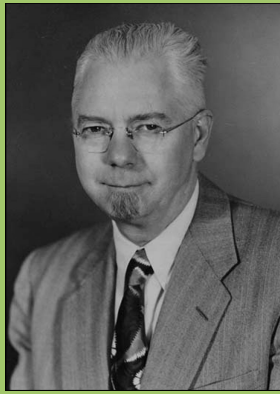
Computation Linguistics is a science which uses language, psychology, math and computer science in an attempt to teach computers the art of human language. [The North American Computational Linguistics Olympiad \(NACLO\)](#) challenges students in grades 6-12 with puzzles, allowing them to learn about theory of computational linguistics and its applications. Johns Hopkins University is hosting the North American Computational Olympiad on February 2, 2012. It is open to all high school students. The top teams from the competition will be invited to represent North America at the International Linguistic Olympiad. To register for the open competition at JHU and more information visit the [JHU NACLO website](#).

To help prepare students for the competition, Johns Hopkins University is hosting a free information/practice session On Saturday, January 12 from 10 a.m. to 12 p.m. Additionally, the JHU NACLO committee is offering to visit 5 classes at schools in the Baltimore area who have students interested in the NACLO competition. The class visit could be in school or after school and would feature graduate students talking about why they love doing computational linguistics (with Q&A) and challenging your students with examples and puzzles. If you are interested in either of these pre-contest programs RSVP to jhu.naclo@gmail.com.



TeachEngineering Classroom Resources

The TeachEngineering library provides teachers with standards-based lesson plans and activities for grades K-12. These activities bring math and science lessons to life. In keeping with this month's military theme, try out the [Windy Tunnel](#). Students will use computers to help them understand Bernoulli's Principle and basic winged-flight mechanics. While incorporating simple flight mechanics, the lesson also teaches students how to construct mathematical equations related to flight and lift. Click [here](#) to get this activity and many more.



Robert Morris Page: Inventor of Modern Radar

Born in St. Paul, Minnesota in 1903, Robert Morris Page was a leading innovator in early Radio Detection and Ranging (Radar) technologies during World War II.

After receiving a bachelor's and master's degree in physics and spending some time working at the U.S. Naval Research Laboratory, Page was tasked with developing a pulsating device that could detect a target and measure the range to a target. The result was the first radar system, which utilized radio waves first tested in 1934. Page worked with other scientists, A. Hoyt Taylor and Leo C. Young, on the development of this technology.

Page later improved on his original system by increasing the frequency of the device to reduce its size, as well as developing the duplexer with Taylor which allowed a single antenna to send and receive transmissions. Page would later be named the Naval Research Laboratory director in 1957 and would retire in 1966 with 65 patents to his name.

Originally designed for military use, today radar is used across the scientific spectrum. Meteorologists, for example, use Doppler radar to forecast the weather and geologists use ground-penetrating radar to map the composition and movement of the earth's crust.

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eGFI (Engineering, Go for it!) Build a Parachute.

eGFI's lesson on building a parachute allows middle school students to understand aerodynamics and fluid flow concepts. The entire lesson plan, with background information and instructions, is available [here](#).

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Scholarship Opportunities

[The Baltimore Scholars Program](#) offers scholarships to Johns Hopkins University to students who graduate from a Baltimore City Public School. In addition to providing free tuition, the Baltimore Scholars Program assigns each participant a faculty advisor to help them succeed at Hopkins. Those wanting to apply for the Baltimore Scholars program need to be accepted into a four year program of study at Johns Hopkins University. No additional application is required but the student must have lived in Baltimore for the three years prior to their graduation of a Baltimore Public High School. Check the [Brochure](#) and the [FAQs](#) for more info.

[AXA Achievement Scholarship](#) offers college scholarships of \$10,000 and \$25,000 to high school seniors who have demonstrated outstanding achievement in their activities in school, the community or the workplace. The application deadline is December 1. For more information or an application, see the AXA Foundation website [here](#).

[MENSA Essay Contest Scholarship](#) is offering scholarships up to \$1000 for Maryland residents. The deadline to apply is Jan. 15, 2012. To find out more, click [here](#).

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STEM Contests for Your Students

[eCYBERMISSION](#) is an internet based contest sponsored by the U.S. Army for students in grade 6-9. The contest challenges students to solve real world problems in their communities through math, science and engineering initiatives. After identifying a problem, students form their hypotheses and conduct experiments. Then they use these results to develop a solution to the problem. There are additional opportunities for teachers to get involved as ambassadors, online tutors or judges even if they are not mentoring a team. Registration is open until December 16, 2011. Click [here](#) to get involved or to register your team.

[The Junior Science and Humanities Symposium](#) is a competition for students in grade 9- 12 students aimed at promoting interest in STEM fields. Students complete an independent study relating to STEM fields, write a research paper on their findings, and prepare an oral presentation detailing these results. Students then present their research at science symposiums across the country. The symposiums are held on different dates depending on your regions. The Maryland symposium runs from March 6-8. Winning participants receive scholarships from the Department of Defense. For more information on how to get involved and learn when the symposium in your area is click [here](#).

The [West Point Bridge Design Contest](#) aims to teach middle and high school students the importance of the design process and how to use computers as a problem solving tool. Teams of one to two students compete to design functional and durable truss bridges using the computer software provided. The contest has three rounds; the final round will be held at the United States Military Academy at West Point. The qualifying round begins [here](#).
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**If you know about any
STEM-related events
or resources worth
sharing, please let us
know!**

March 1. For contest rules and info visit the West Point Design Contest [website](#).

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