

STEM-IN'

Indiana STEM News



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Project Lead The Way Adds Two New Programs Project Lead The Way (PLTW) is growing! PLTW's two newest programs are PLTW Launch for K-5 students and PLTW Computer Science for high schools.

- **PLTW Launch** includes 24 modules designed to spark a lifelong passion for math and science. Students engage in design problems that explore biomedical science, computer science, and engineering, and encourage collaboration, analysis, problem-solving, and computational thinking. They use technology, robotics, and everyday materials to explore topics such as energy, light and sound, motion and stability, and gravity. With PLTW Launch, students will leave elementary school with a passion for and confidence in the STEM subjects, ready to continue their learning in middle school, high school, and beyond.

- **PLTW Computer Science** addresses the imperative to increase our national talent pool in computer science and software engineering. In fact, the number of job openings projected in 2018 for STEM fields will reach 2.8 million, and approximately half of these will be for computer specialists. To reverse this trend, build student interest and engagement in computer science, and prepare more students for great career opportunities requiring computational thinking, PLTW has launched a four-year computer science program for high school students.

The first course, Computer Science and Software Engineering (CSE), is currently available to high schools across the country. Schools can offer the full program or incorporate CSE as the third course in the PLTW Engineering program. The second course, Computer Science Applications (CSA), is now available for implementation in 2015-16. Both courses align to AP Computer Science exams. For more information, visit www.pltw.org or contact Terri Schulz at tschulz@pltw.org.

NISTEM: Ft. Wayne STEM The Northeast Indiana STEM (NISTEM) Education Resource Center has had a productive summer, and is looking forward to engagement in many events this Fall. Highlights include:

- The Indiana University-Purdue University (IPFW) STEAM (A added for the Arts) Council is undertaking a website redesign under the direction of award winning faculty in the College of Visual and Performing Arts.

- IPFW Science and Math Preservice Teachers are using iPad's in the Department of Educational Studies one-to-one technology initiative.
- Science Central will welcome its 2015/2016 cohort of STEM Communications Fellows. As a partner organization in the Portal to the Public network, the science center is able to provide training to STEM practitioners interested in learning how to better communicate about their research fields to the broader public. This year, Science Central will be providing Portal to the Public training to a group of professors at IPFW interested in strengthening their skills in this area.
- The McMillen Center for Health Education has seen tremendous demand for the Brush! Dental Curriculum.
- Now is a great time to schedule a trip to Fox Island or Metea Park for Tree Classification when the leaves are reaching their symphonic best.
- Learn the process of lacto-fermentation as you create preserves at the Botanical Conservatory downtown.
- Have the Zoo Mobile come to you and learn first-hand animal behaviors and traits.

Visit <https://www.ipfw.edu/departments/etcs/outreach/> for just a few of the Northeast Indiana regions other STEM events. Fort Wayne and all the NISTEM Partners are proud to support the I-STEM Network and STEM initiatives for all ages.

New Indiana Science Standards By state law, Indiana's Science Standards must be reviewed and updated every seven years. The current version from 2010 is being updated and includes computer science standards for grades K-8. The current draft standards are available on-line at: <http://www.doe.in.gov/ccr/public-comment-science-standards>.

Over 100 teachers, professors, and STEM professionals have reviewed and revised these standards to get them to this point. Reviewers believe the standards may benefit from further revisions and are seeking input from other stakeholders. The first public comment period closed on August 21. Please understand that all of these standards are based in research and professional expertise so there is a reason for them being included in this first round of revision. The Indiana Department of Education would like you to know that these standards are not final and are considered draft, so any comments, suggestions, and feedback you provide over the review will be greatly appreciated. Comments and feedback should include specific

EVERY student **EVERY** school **EVERY** day

suggestions for improving the standard, this could include rewording, additions, clarifying statements, moving the standard to a different grade level, or deleting the standard all together. All feedback will be taken back to the review teams and considered. If you would like to participate on the second round of internal revision, please contact Jeremy Eltz (jeltz@doe.in.gov).

Purdue's Polytechnic Plans Purdue University President Mitch Daniels announced June 18 the university's plan to open a new STEM-focused charter school and the intent to expand throughout the state in future years. Purdue Polytechnic Indianapolis High School, an educational experience designed to provide a bridge for inner-city students to succeed in high school and beyond, will open in August 2017.

A steering committee has been working for the past year on plans for the new school. Purdue faculty, primarily from the Purdue Polytechnic Institute, will develop the unique curriculum and teaching methods for the school as a blend of K-12 and post-secondary education with an infusion of industry leadership and participation, said Gary Bertoline, dean of the Purdue Polytechnic Institute.

"Our partners in industry will be vital, working with our faculty to develop the academic model, and to define and refine the competencies students must master to succeed in the 21st Century economy," Bertoline said. "Graduates will have the skills to meet the evolving needs of industry and with dual credits for continued postsecondary education, as well as industry-recognized credentials and mastery in a defined high-tech pathway."

Brooke Huntington has been appointed as Purdue Polytechnic's assistant dean for K-12 outreach. Huntington will lead the development and fall 2017 launch of the Purdue Polytechnic Indianapolis High School. Working from Purdue's downtown Indianapolis office, Huntington will develop and maintain relationship partnerships with external K-12 agencies, government, school districts, and funding agencies to support the high school.

Kevin Kaluf has been appointed the K-12 STEM education director for the Purdue Polytechnic Institute. In this new position Kaluf will be responsible for planning and startup of the Purdue Polytechnic Indianapolis High School, placing special emphasis on its curriculum. He will also oversee all aspects of the college's K-12 STEM education-related activities.

Indiana Afterschool Network – At the national forefront of out-of-school time STEM learning by Bob Abrams, IAN

"Expand high quality and engaging STEM learning in out-of-school time throughout Indiana" is the objective of the Indiana Afterschool Network STEM Plan. As noted in the inaugural edition of the Indiana STEM Newsletter, the four priorities of the IAN STEM Plan are:

1. Partnership and leadership development
2. Communications and policy and funding development

3. Program quality and professional development
4. Data coordination and assessment

In that June Newsletter, I focused on the first priority. In this edition I will address priority #2, "Communications and policy and funding development."

A key forum for communications within the Indiana out-of-school community is the IAN website, <http://www.indianaafterschool.org/>. Besides general information about IAN, the many visitors of this website can access resources there, such as information on professional development and reports about OST STEM learning. Also, the website offers information about the educational standards developed by IAN, including STEM standards. Events are highlighted, like the April IAN Summit which offers numerous STEM workshops. The website link to the IAN Mapping Database provides details on more than 950 OST programs, such as informing parents where their children can participate in STEM learning. On the website there is also a link to the monthly IAN newsletter which, among other useful information, provides guidance on potential grant opportunities.

Recently, IAN launched an informal newsletter focused on its STEM initiative. Jannice Blake, a STEM Vista volunteer joining the IAN in September, will help compile information for these periodic newsletters focused on out-of-school time happenings in STEM.

Regarding Policy and Funding, IAN has influenced the following state policies to expand OST STEM education:

- Indiana Department of Education (IDOE) added afterschool to its STEM Schools Certification requirements.
- IDOE added STEM to its 21st Century Community Learning (21st CCLC) grant priorities and included STEM technical assistance for new and expanding programs.
- IAN received the first ever grants from the Governor's Office to use afterschool as a vehicle for STEM teacher preparation.
- IAN and its STEM Taskforce partners have leveraged more than \$2M in public and private funding to expand OST STEM.
- IAN recently received its first \$1M grant from the Lilly Endowment for our core work, partly due to successes with STEM and the breadth of our public-private partnerships.

The next IAN STEM Taskforce meeting is tentatively scheduled for November. If you're already on the STEM Taskforce mailing list, you'll receive details soon. To join the IAN STEM Taskforce, contact Bob Abrams, IAN STEM Coordinator –

babrums@indianaafterschool.org, 812-344-0405.

Congratulations to IAN on winning a STEM Learning Ecosystems grant!

About STEM-IN' This newsletter is published six times per year by the I-STEM Resource Network. For inquiries and news contributions please email: istem@istemnetwork.org.