STEM-IN'

Indiana STEM News

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STEM School Certifications The Indiana Department of Education is excited to announce the very first cohort of STEM Certified Schools. These schools are models for Indiana in their commitment to teaching the STEM disciplines of science, technology, engineering, and math, ultimately preparing students for success in the 21st century. This first cohort of STEM Certified Schools exemplifies a highly non-traditional approach to education employing a great deal of inquiry, project based learning, community engagement, entrepreneurship, student centered classrooms, and out of school STEM activities. STEM Certified Schools have been able to accomplish this feat while following educational policies set by the state and excelling under the system of accountability. Over 30 schools began the process with a self-evaluation, 17 of those completed the application and 9 schools have been certified. While these are the first, others will be able to build on their accomplishments during the next round of applications in fall 2015.

Congratulations for Full STEM Certification!

- Zionsville Community Schools: Boone Meadow Elementary & Stonegate Elementary
- Michigan City Area Schools: Lake Hills Elementary
- Warsaw Community Schools: Washington Elementary
- MSD of Lawrence Township: Skiles Test Elementary, Belzer Middle School, and McKenzie Center for Innovation and Technology
- Maconaquah School Corporation: Maconaquah Middle School
- MSD of Warren Township: Walker Career Center

STEM Ed Legislative Summary Advancing STEM education in Indiana was the ambitious goal for I-STEM and the Coalition this past session. The goal was (and still is) for the State to be a partner with businesses, educational institutions and non-profits to advance STEM education for all of Indiana's students K-12. The Indiana STEM Education initiative was designed to accomplish this goal, built upon the two years of work of the Coalition. HB1222 was introduced by Rep. Truitt and passed unanimously to implement the Initiative. However, the fiscal constraints in the biennial budget could not support the appropriation requested. Another bill, SB259, was introduced by Sen Ron Grooms to expand STEM learning through dual credit and other educational opportunities. It also did not survive the session.

One program which supports STEM teacher recruitment was renewed for another two years. The STEM Teacher Recruitment Fund was established in 2014 to help recruit and train new STEM teachers. Part of the funding is allocated to the Woodrow Wilson Fellowships and some for Teach for America. The remainder is for competitive grant programs designed to recruit and train new STEM teachers in Indiana. The Commission on Higher Education manages these grants. The RFP for these grants should be available soon.

Sectors, Pathways and Innovation Despite setbacks in the General Assembly, there are encouraging developments in the Sector Pathways proposal being developed by the Indiana Career Council (ICC) and the Department of Workforce Development (DWD). The various taskforces of the ICC have proposed five key sectors of the Indiana economy: Advanced Manufacturing, Health Sciences, Information Technology, Agriculture, and Transportation, Distribution and Logistics. One or more of these sectors may be dominant in each region around the state, but different regions will likely have different needs. The proposal is for each region to identify the critical economic sector(s) for that region and develop a plan and network to grow skills, capabilities and a sustainable infrastructure to enhance that sector. Aligned with each sector will be an education pathway from the Indiana Department of Education that ensures students will develop the skills and experiences needed to be career and college ready at the completion of high school. STEM education and skills development are central to achieving their goals.

STEM Coaching: A Personal Perspective By Steve Gillman, P.E., I-STEM volunteer

STEM coaching is awesome! … at least it is for me. After retiring from a 35 year career at Eli Lilly and Company, I started spending more time on STEM education initiatives. One of the most rewarding of these initiatives is volunteering one full day a week as a Lilly 6th grade science coach at an Indianapolis Public Schools (IPS) district elementary school. Helping others and education have always been a passion of mine. This sentiment is naturally ingrained in me, as my parents expected me to do well in school and to attend college, even though my Dad was not a high school graduate and Mom did not pursue education beyond

high school. While spending a day each week at IPS School 49 assisting a 6th grade science teacher, I've been able to help kids experience the excitement and fun in science, especially when taught through a hands-on, inquiry based approach. I've seen many students, with a range of abilities and attitudes, get excited about science while working with them, one-on-one and in teams, on a variety of topics. Their enhanced interest in science became associated with my visits, as the kids would ask their teacher "when is Mr. Gillman, the scientist, coming so we can do more cool science experiments?" Some of the students were even disciplined for poor behavior by not allowing them to work with me on the next experiment. The extreme disappointment that these disciplined students expressed afterward indicated that they were enjoying science so much. Nevertheless, the discipline was good motivation for them to improve their behavior, so they could participate the next week. I will never forget the remarkable transformation they exhibited over the year. A number of students told me that they hated science at the beginning of the year. By the end of the school year, they were telling me how much they liked science and wanted to be engineers, scientists, doctors, science teachers, nurses, and other STEM related roles.

While my interactions with students have been very positive, there have also been some challenges with my science coaching efforts. I've seen teachers' passion for teaching science improve substantially through the "hands-on/inquiry based" approach and they became very effective science teachers. But due to administrative changes, some were involuntarily transferred to a non-science teaching assignment the next year. Another frustration is seeing the lack of parental interest and involvement in their child's education. After seeing so many of the 90 kids I worked with respond so well to individual attention, I only wish I had more time to work one-on-one with each and every student.

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

Young people in America today spend 80% of their waking hours out of school. In addition to addressing safety and working family support concerns, out-of-school programs offer an unlimited opportunity to expand student learning.

Recognizing the necessity of better preparing our Indiana students for the increasingly STEM-based world that they must navigate for future success, the Indiana Afterschool Network (IAN) has taken a national leadership role in developing and implementing strategies to increase beyond the school day STEM learning engagement and performance for school-age students.

The overriding objective of the IAN's STEM Plan is to "Expand high quality and engaging STEM learning in out-of-school time throughout Indiana." In this and future editions of the Indiana STEM News, I will review the activities planned and already underway, all with the intent of fulfilling the four priorities of the IAN STEM Plan:

1. Partnership and leadership development
2. Communication and policy and funding development
3. Program quality and professional development
4. Data coordination and assessment

To address the first priority of the IAN STEM Plan, Partnership and leadership development, members of the IAN team are active participants in the I-STEM Resource Network's initiative to establish a STEM education policy for the state of Indiana, including active participation on a number of the sub-committees charged with developing specific plans.

Additionally, in 2013, the IAN created the STEM Taskforce with the purpose of convening a diverse group of representatives from business, K-12 education, post-secondary education, educational institutions, and out-of-school programs to focus on STEM education in the out-of-school space. Currently the IAN STEM Taskforce is comprised of 178 members that meet bi-annually at the site of one of its members. Serving as the primary driver of out-of-school time STEM policy development and implementation in Indiana, these high energy gatherings address the four priorities of the IAN STEM plan in an interactive manner that enables all to make their thoughts and opinions known.

All interested in advancing STEM education in the out-of-school arena are invited to join the STEM Taskforce. Just contact Bob Abrams, IAN STEM Coordinator – babrams@indianaafterschool.org, 812-344-0405.

Economic Value of College Majors A new report from Georgetown University's Center on Education and the Workforce provides a detailed analysis on the economic value of many college degrees. Business and STEM degrees pay the most in general; STEM degrees, particularly engineering degrees, are the top 10 paying majors. One interesting result is that the difference between the lifetime wages of the lowest-paying college degree and the highest-paying college degree amounts to $3.4M. You can access the report at https://cew.georgetown.edu/cew-reports/valueofcollegemajors/ .

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.