

K-12 STEM Report for Region 2 Annual Meeting

Joseph F. Burns
R2 K-12 STEM Rep.

Hershey, PA May 4, 2019

Philadelphia Section

- ▶ Future City Competition – Jan 4th, 40 schools, ~400 students
- ▶ Delaware Valley Science Fair – Apr 3rd, 4 IEEE Judges, 900 entrants, 4 selected for IEEE Awards
- ▶ Beginners Guide to Arduino Workshop – 2014-2019, ~60 students and parents per session
 - Enon Tabernacle Baptist Church, provided STEM Outreach to underserved population, held 2x, 90 students
 - STEM Camp at Camp Adonai, taught by IEEE members, 2015-2018
 - IEEE funds and staffs this Summer STEM Camp
 - IEEE Organizer appointed to Church STEM Board
 - JAVA/Android Class for adults and students, ‘train the trainer’
 - Also taught at Imhotep Public Charter School
 - Adapted course to App Inventor to be more relatable for the kids, 2017-2019, 20-25 students aged 10-13

Baltimore Section

- ▶ 23rd Robot Challenge held Apr 14, 83 Teams began project
 - 230 Students competed
 - 23 Two-leg Robots and 16 Four-leg Robots completed all phases of the event
 - Competition requires
 - Navigating a 6 ft obstacle course
 - Oral presentation to a panel of Engineers
 - Complete a 35 page report
 - Competition Staffed by 63 IEEE members who planned, implemented and judged the contest
 - Post event survey indicates that students are inspired to choose engineering as a career
 - Franchised concept successfully by Southern NJ Section the past 10 years!

Northern Virginia Section

- ▶ Provides funds and volunteers to area schools at the elementary, middle and high school levels
- ▶ Provided Educational Kits to Libraries
- ▶ Provides Science Fair Judges: Fairfax County, Loudoun County, NOVA Regional, Prince William-Manassas Regional
- ▶ Camp Invention

Washington

- ▶ Provides IEEE 1st and 2nd Place Awards at three STEM Fairs in the area:
 - Prince George County
 - Montgomery County
 - District of Columbia
 - Invites Winners to the Awards Banquet in May

West Virginia Section

- ▶ WVU Student Branch participates in Engineering Open Houses at WVU Tech and Marshall University
 - Engineering Day at Clay Center
 - 6-12 Students are welcome at all events
 - IEEE members provide demos and experiments
- ▶ Conducts Student Awards in STEM Fields Program to promote student interest in STEM

Susquehanna Section

- ▶ Multiple PACE Projects supported are:
 - MathCount Competition
 - CPEWC Engineer Fair @ Whitaker Science center
 - PENN STATE Harrisburg, Central PA Robotic Competition
 - CASEF Science Fair

Delaware Bay Section

- ▶ “Wonders of Electricity” course developed by two section members
 - ▶ Prepares students for the National Science Olympiad competitions
 - ▶ Workshop type event
- ▶ Section members participate in Junior Achievement’s “Career Fusion”
 - ▶ Members share information about their careers in EE
 - ▶ Hundreds of students reached each year!

Cleveland Section

- ▶ Presented overview to NASA Summer Interns at Glenn Research center on the benefits of membership provided by a professional organization
- ▶ Northeastern Ohio Science and Engineering Fair
 - Provides 4 section members to judge event

Dayton Section

- ▶ Supports two Science Fairs in the area
 - Each Science Fair has 200-300 students entered
 - Five awards given in STEM categories
 - Award Winners are invited to the Annual Awards banquet to display their projects and receive cash and a certificate

Lima Section

- ▶ No Stem Outreach activities to report
- ▶ Requested follow up to learn more about what other sections are doing in STEM

Southern New Jersey Section

- ▶ 10th Annual WIE Robot Challenge, grows larger each year
- ▶ IEEE WIE @ Stockton University with AAUW partner
 - Tween Tech, Jan 4, 180 Junior High Girls Science Workshops
 - Tech Trek, May 11, Meet and Greet Career event
 - Teen Teck, May 29, 9th -11th Grade Girls Science Workshops
 - Teck Trek, Jul 21-27 Summer Camp, 60 Middle School Girls
- ▶ Supported Speaker travel to WIE Leadership Conference in NY to present a paper on the Robot Challenge
- ▶ Jersey Shore Science Fair, provided 11 Judges, over 600 Student entrants, 4 Awards presented, 1st, 2nd, 3rd place Engineer Category and 1st Place WIE in Engineering
- ▶ Many members are volunteers for the Aviation STEM Program run by the FAA
 - Career Fairs
 - Classroom visits/lectures on a variety of science topics
 - Too many events to list!

Columbus Section

- ▶ **Family Service Council projects in underserved areas of Columbus:**
- ▶ **1. VERB- Visualize-Embark-Realize-Become**
 - www.project-verb.org (Milo Grogan area)
 - makerx robotics exhibit (k-12 youth built and programmed)
 - 20 PC lab digital workstations with OSU student volunteer instructors
- ▶ **2. SLETG- Smart Linden Educational Technology Group (South Linden area)**
 - Linden H.S. STEM Academy students Douglas rec. center 8 PC digital workstations
 - (Programming Logic - JAVA, HTML IV, Python, SQL mobile app development with i-phones and Androids)
 - Two Education/Workforce development programs:
 - Family Services Council(FSC a non-profit org),
- ▶ **3. www.MakerX.org**, primarily sponsored by ieeecolumbus is a growing annual event started 2018 gaining IEEE student memberships and FSC sponsors through the many vendors from these events. (Videos available with websites)

Akron Section

- ▶ The Akron Section STEM activities are:
- ▶ Participate in the District STEM awards banquet and award two teacher grants for STEM teaching of EE.
- ▶ Participate in the STEM Science Fairs to judge projects and award up to 8 cash awards for EE and computer projects.
- ▶ Attend the family STEM event at the Akron Public Library.
- ▶ Attend the STEM field trip for third and fourth graders at the Kent State University.
- ▶ Attend the STEM conference at John Carroll University.
- ▶ Participate in several STEM Prep events for 3-5th grade students.

Pittsburgh Section

Johnstown Section

Erie Section

Youngstown Section

Lehigh Valley Section

Central Pennsylvania Section

Cincinnati Section