# College of Science Outreach updates

## Physics Outreach

### Service Learning

Continued work with service learning student Bilal Khalik, in writing and collecting sample data for experiments for the Vernier Go Direct motion detector, to be used for upcoming middle school teacher professional development workshops.

### e-Learning resources

Contributed resources to the College of Science Outreach website to provide materials for remote instruction.

### Science Express

Recorded videos for upcoming remote teacher professional development workshops.

### RETs

Began mentorship with two teachers in the RET program, working toward classroom and remote learning materials.

### Scholarship of Engagement

Published article in The Physics Teacher with co-authors Professor Avery Archer, former outreach coordinator Phillip Sands and service learning student Guna Kondapaneni. *Searching for Exoplanets* is a V-Python computer simulation that we created for our Physics and Astronomy’s Saturday Morning Astrophysics program.

## Earth, Atmospheric, and Planetary Sciences Outreach

* Goal 1: Support for K-12 science and mathematics educators
  + Teacher Professional development
    - Working with other coordinators to design a middle school teacher professional developments that we will hold virtually this summer.
    - Submitted proposals to present at 2021 NSTA Conference in Chicago, IL
      * Creating meaningful, digital STEM projects: Providing opportunities for differentiation and promoting student ownership in the learning process.
      * Coding for a purpose: Yes, YOU can teach coding with Arduino too!
    - Video conference with Zach Burkhardt, chemistry teacher at Decatur Central High School - New Tech School of IDEAS, to discuss development of a Food Chemistry high school course.
    - Continued adding resources to eLearning page on the [College of Science K-12 Outreach website](https://bit.ly/PUelearning)
  + Teacher Resources:
    - **Superheroes of Science podcast!** Podcast for students and educators interviewing scientists and science education specialists.
      * Released season 1 podcasts on YouTube
      * Released new content podcasts  Professors Christopher Roemmele, Jeffrey Lucas, Angeline Lyon, and Purdue University alumna Caroline Kostak.
      * Started and released ***Inspiring Ideas for the Classroom*** include episodes recorded with teachers: Amy Smith, Steve Auslander, and Troy Simpson.
      * Created student worksheets for Superheroes of Science episodes that teachers can assign.
  + Goal 2: Create and facilitate programs that develop scientifically literate K-12 students
    - Collaborated to develop a 360 virtual lab tour of [Professor Corey Thompson’s lab](https://bit.ly/SOSVirtual_CThompson)
  + Goal 3: Create opportunities for broader impact
    - April 2020 podcasts and YouTube videos released for *Superheroes of Science* include episodes recorded with Professors Christopher Roemmele, Jeffrey Lucas, Angeline Lyon, and Purdue University alumna Caroline Kostak.
    - April 2020 YouTube videos released for *SOS: Inspiring Ideas for the Classroom* include episodes recorded with teachers: Amy Smith, Steve Auslander, and Troy Simpson.
      * There were 238 total unique downloads of SoS podcasts this month.
      * There were 671 total views counted for the [Superheroes of Science YouTube channel](https://bit.ly/SOS_UTube) this month.
      * Twitter (@PurdueSOS) logged a total of 12.4K tweet impressions this month.
    - Heading Subcommittee for the GLOBE Program U.S. Partner Forum on trainer and master trainer mentoring.
* Personal professional development:
  + Working on Google Certified Educator Level 1 training
  + Learning coding for Arduino
  + Getting information out
    - [**Facebook** for EAPS Outreach](https://www.facebook.com/EAPS.out)
    - [Twitter @PurdueSOS](https://twitter.com/PurdueSOS)
    - EAPS K-12 Outreach Pinterest
    - [EAPS departmental outreach web page](http://www.eaps.purdue.edu/outreach/index.html)
    - [Youtube channel for Superheroes of Science](https://www.youtube.com/channel/UCIJnmp1MwUDtm_WMBSarEcw)

## Chemistry Outreach

* Professional Development and Support for K-12 Educators
  + Advertising and developing lessons for Summer 2020 Middle School Teacher Workshops.
  + Met with administrator from Frankfort Elementary School to discuss potential collaboration opportunities with College of Science K-12 Outreach.
  + Continued adding resources to eLearning page on the [College of Science K-12 Outreach website](https://bit.ly/PUelearning)
    - The eLearning website was visited 518 times in the month of May.
    - Continued adding to list of online teaching resources for chemistry, linked to the [eLearning resource page](https://bit.ly/scienceremote)
  + Focused efforts to continue developing the Facebook page: Purdue University K-12 Chemistry Outreach (@PurdueChem).
    - Added 61 new followers this month.
  + Posts from this page reached a total of 13,561 people this month.
* Programs to Develop Scientifically Literate K-12 Students
  + Participated in the Tippecanoe County Partnership for Water Quality (TCPWQ) Conservation 2020 Webinar by delivering a presentation with Steven Smith (K-12 EAPS Outreach): “Science We Can All Do Anywhere”, with Tippecanoe County 4th grade students.
    - This presentation was active on Facebook Live where it has received 447 views.
    - This presentation was also added to our *Superheroes of Science* YouTube channel.
  + Worked with Steven Smith (K-12 EAPS Outreach) and Philip Cardella, Executive Director of Imagination Station, to develop a 360 virtual lab tour of Imagination Station.
* Opportunities for Broader Impact
  + Submitted Halliburton Foundation 2020-21 EAB grant request with Professor Lisa Welp, Steven Smith (K-12 EAPS Outreach), and Bill Bayley (Director of K-12 Outreach).
  + Met as part of a subcommittee for the Global Learning and Observations to Benefit the Environment (GLOBE) United States Partner Forum, working toward the development of a certification process for both Trainers and Mentor Trainers within the US GLOBE Program.
  + Submitted application to become a Mentor Trainer for the GLOBE Program.
  + Met with Philip Cardella, Executive Director of Imagination Station, to discuss potential collaboration opportunities with College of Science K-12 Outreach.
  + May 2020 podcasts and YouTube videos released for *Superheroes of Science* include episodes recorded with Professors David Sanders, David Thompson, and NASA Planetary Scientist Barbara Cohen.
  + May 2020 YouTube videos released for *SOS: Inspiring Ideas for the Classroom* include episodes recorded with teachers: Greg Smith, Sarah Chattin, Kristen Poindexter, Melissa Newcomb, Kyle Kline, Tracy Ostrom (West Ed./ UC Berkeley project coordinator), Tami Hicks (Director of Professional Learning for Wabash Valley Education Center), and Sarah McAnulty from *Skype A Scientist*.
    - There were 294 total unique downloads of SoS podcasts this month.
    - There were 842 total views counted for the [Superheroes of Science YouTube channel](https://bit.ly/SOS_UTube) this month.
    - Twitter (@PurdueSOS) added 13 new followers this month.
    - Twitter (@PurdueSOS) logged a total of 9,148 tweet impressions this month.

## Biology Outreach

1. SBE: Summer Biology Experience Program. Working with Dr. Clark Gedney (SBE Director) on planning the 2020 Summer SBE Program for high School Students. Program will be delivered online this summer.
2. Exploring University majors and careers in Human and Animal health care profession: Biology Outreach, part of the ongoing planning team participating in this program to take place July 26 thru 31, 2020. Program activities will be delivered online.
3. Broader Impact consultation for NSF Early Career Grant Application: Working with Professor Pienaar, Biomedical Engineering on a Broader impact activity for an NSF Early Career Grant Application.
4. Science Outreach: Middle School Science workshop for teachers: Working with science Outreach team planning workshop activities.
5. High School A&P Course Curricula development: Working with a Biology teacher to improve and enhance an A&P (Anatomy and Physiology) course this summer. The teacher plans to offer the course as an advanced biology course in the fall.

## Science Express

* Made 3 video labs for the Science Express Youtube page
* Changed SE website to be more Marking and Media compliant
* Had two Science Express board meetings where we planned how to perform Science Express recertification online.
* Met with Jennifer Jefferies to get Science Express into Marketing and Media compliance
* Worked with other Science Express board members to make recertification videos and accompanying quizzes
* Arranged SE equipment for the van driver to clean and refurbish and supplied him with disinfectant.
* Composed and sent out May newsletter to Science Express participants.