# College of Science Outreach Activity Report – April 20

## 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 of 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)

## Physics Outreach

### Service Learning

Collaborating with service learning student, Bilal Khalid, in designing, writing and collecting sample data for 5 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. Current monthly hits on the Google Sheets resource is over 900.

### Science Express

Created a video version of the Notebook Circuits lab, with real time data, now available on YouTube for teachers to teach the lab remotely.

### Faculty

Collaborating with P and A faculty member Birgit Kaufmann, in the writing of a quantitative lab relating time and position for upcoming teacher workshops.

### Scholarship of Engagement

Peer reviewed article published in the Nordic Journal of Science Education, [Finnish Students’ Mental Models of Magnetism](https://journals.uio.no/nordina/article/view/5566/7046), the product of an ongoing collaboration with faculty at the University of Jyvaskyla, Jyvaskyla, Finland.

## Chemistry Outreach

* Professional Development and Support for K-12 Educators
  + 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!
  + Collaborated with Math Ed to create distance learning STEM lessons that were used for a virtual class session for Purdue pre-service elementary teachers.
  + 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).
    - The eLearning website was visited 959 times in the month of April.
    - Continued adding to list of [online teaching resources for chemistry](https://bit.ly/scienceremote), linked to the eLearning resource page.
  + Focused efforts to continue developing the Facebook page: Purdue University K-12 Chemistry Outreach (@PurdueChem).
    - Added 108 new followers this month.
    - Posts from this page reached a total of 25,307 people this month.
* Programs to Develop Scientifically Literate K-12 Students
  + Worked with Steven Smith (K-12 EAPS Outreach) and Professor Corey Thompson to develop a [360 virtual lab tour of Professor Corey Thompson’s lab](https://bit.ly/SOSVirtual_CThompson)
* 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) added 18 new followers this month.
    - Twitter (@PurdueSOS) logged a total of 12.4K tweet impressions this month.

## Biology Outreach

1. Posted a series of online resources for Biology teachers to assist them in providing material for online instruction to their students during the Covid-19 pandemic. Among these resources, materials were provided by Biological Sciences Faculty members Dr’s Aswana Fricker, David Sanders and Nancy Palez.
2. Dr. David Sanders and Dr. Jeff Lucas, Members of the Biological Sciences Faculty, agreed to be interviewed by COS k-12 “Superheroes of Science” podcasts. These podcasts are directed by Mr. Steve Smith (Earth Atmospheric and Planetary Sciences Outreach Coordinator. They are aimed at the K-12 community and the general public. It provides the scientists an opportunity to discuss their science and tell their story in non-technical language to a general audience.
3. Consulted with Three teachers on the use of online resources in Biology for instruction. In one case worked with one teacher on choosing packets of material to send home to students who did not possess the computer and internet resources to access delivery via online instruction.
4. Ongoing preparation of 3 lessons for online delivery for the Middle School Summer “20 Science workshop.
5. Started preparation for online delivery of 2020 Summer SBE (Summer Biology Experience). Met with Dr. Clark Gedney, SBE Director and Ms. Brittany Croy, Biology teacher to plan activities for the 10 day program which will be held June 20 thru June 29th 2020. Ongoing preparation continues.

## Science Express

* Science Express: The Chemistry, Biological Sciences, and Physics Departments of the Purdue College of Science through the YouTube channel had 393 unique visitors watch our videos this past month.
* Disinfected science equipment.
* Made videos using Science Express equipment for science teachers.