



Office of the Assistant Vice Provost for Educational Outreach

K-12 Educational Outreach Newsletter - Summer 2022

Be the first to hear about CMU K-12 Educational Outreach news and events by [subscribing to our newsletter!](#)

Greetings Carnegie Mellon University campus contacts! The Office of the Assistant Vice Provost for Educational Outreach has compiled the information for this newsletter to serve as a new method for collaboration across campus partners. We hope that you will enjoy reading about the upcoming events and details from programs, departments, schools and colleges at our university and how they're connecting with the K-12 community! Subsequent issues of this newsletter will be sent out to our contacts on a bi-monthly schedule as we [receive news and updates](#).

Should you choose to be removed from this periodic newsletter, we will be sad to see you go, but you may do so by scrolling to the bottom of this newsletter, and selecting to either [update your preferences or unsubscribe](#).

**Summer 2022 Headlines**

- [A Busy Summer from the ETC](#)
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- [PGSS Celebrates 40th Anniversary](#)



**Gelfand Outreach Summer Series is Back!**

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9th grade! This summer, our workshops took students to labs all over campus, and allowed them the opportunity to work with faculty, staff, and graduate students in a variety of departments including chemistry, biomedical engineering, and mechanical engineering, just to name a few.

We are already starting to think about fall programming for our Saturday series! These STEM classes are for students in grades K-9 and are all hands-on, challenging and FUN! Fall Series Saturday morning workshops are held on CMU's campus once a month from 9am to 12pm. If you or your program is interested in teaching a class, reach out to Pam Piskurich at [pjp@andrew.cmu.edu](mailto:pjp@andrew.cmu.edu)

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## Carnegie Mellon University

### Mellon College of Science | Physics

#### Physics Partners with Local Teachers

The Department of Physics conducted a four-day [Teacher Training](#) for high school physics teachers from 27-30 June 2022. The teachers learned about the cutting-edge research in particle physics, cosmology, biophysics, and condensed matter physics and toured the various physics labs in Wean Hall. Teachers were introduced to new teaching tools and they exchanged ideas on resources and physics demonstrations for their classrooms. The event concluded with a cookout attended by professors and graduate students in the department.



### Carnegie Mellon University

#### Entertainment Technology Center

#### A Busy Summer from the ETC

The ETC has been bustling this summer with tours and camps including the National High School Gaming Academy [NHSGA] and the Summer Academy for Math and Sciences [SAMS]. The ETC was thrilled to host the entire SAMS cohort for ice cream "sammies" and a tour of our department. The Outreach and Engagement team has also engaged with community partners like the Warhol, the Children's Museum, STEM Coding Lab, the Future Readiness Institute, the Digital Foundry at Penn State New Kensington, and Homewood Children's Village. We're hitting mid stride by presenting at the Computer Science Teacher's Association Conference [CSTA] in Chicago and look forward to full slate of educationally focused ETC capstone projects with collaborations with the Western PA Conservancy, West Liberty University School of Education, Northgate School District, and Remake Learning. Stay tuned for some exciting announcements in the Fall!



# picoCTF

## picoCTF in the Classroom

Teachers, are you interested in picoCTF student ambassadors coming to your classrooms? Carnegie Mellon University students will assist with onboarding high school students to picoCTF and review basic security engineering concepts, methods and terminology. Our ambassadors make it easier for teachers to adopt the picoCTF platform and provide students and teachers with access to actual security and privacy engineers.



Email [other@picoCTF.org](mailto:other@picoCTF.org) to get more information from the [team](#).

Carnegie Mellon University students interested in volunteering as a picoCTF student ambassador in classrooms and at conference should contact Megan at [mkearns1@andrew.cmu.edu](mailto:mkearns1@andrew.cmu.edu).

# College of Engineering + Leonard Gelfand Center

## BME Online Modules for HS Students!

Conrad Zapanta, College of Engineering / Biomedical Engineering and Judy Hallinen, Gelfand Center, have worked with Carnegie Mellon student creators of [Biomedical Engineering modules](#) for high school students since the summer of 2020. Topics include, but are not limited to, Introduction to Biomedical Engineering, Vaccine Development, and the newest topic, Stem Cells. Each module includes a slide deck, guide to be used with the slides, and student pages. Some also include games or other fun classroom activities.

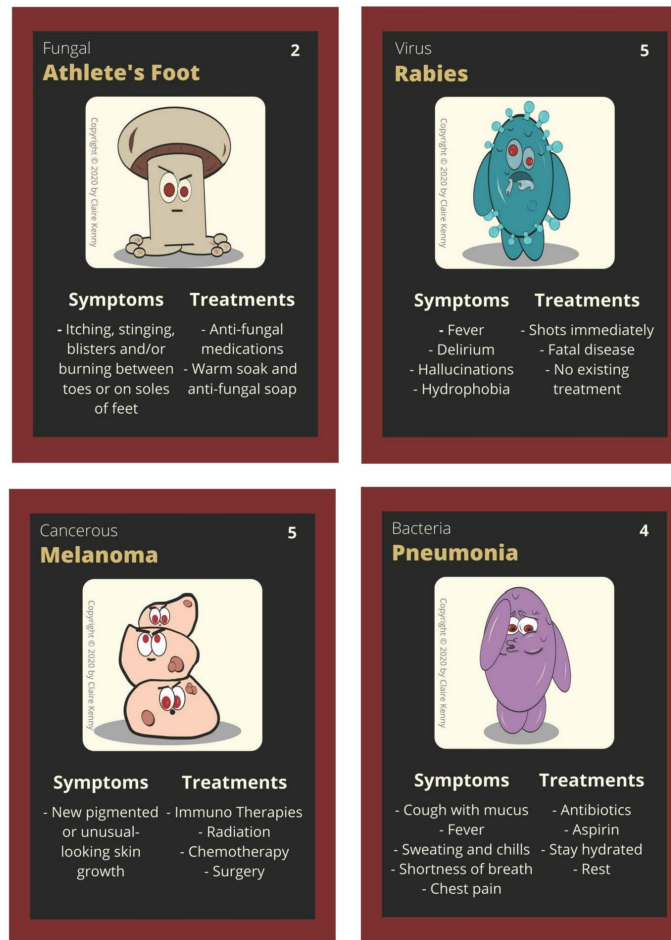


Image: sample "Disease Cards" from League of Immuno-Legends module.

# Carnegie Mellon University Leonard Gelfand Center

## Gelfand Student Educational Outreach Award Winners

The Gelfand Center is happy to recognize the amazing work of three students who

[Chemistry], and Anesha Santhanam [Information Systems].

Read more about their outreach efforts in [The Piper](#).

### Hispanic Studies Students Produce Pop-up Workshops

Students in 82-345: "Community Connections: Working with Spanish-speakers in the Local Context" produced the ["Podcasting the Olympic Games"](#)



and ["Let's Take a Break"](#) pop-up workshops for Spanish-speaking children.

**¡TOMEMOS UN DESCANSO!**

30 de abril del 2022 | 1-3 PM  
¡En Carnegie Mellon University!

¡Habrá una clase de yoga y otras actividades divertidas!



Carnegie Mellon University  
Modern Languages

CENTER FOR SHARED PROSPERITY



**Girls of Steel Robotics Update**

In March 2022 Girls of Steel attended two FIRST Robotics Competition events in Pittsburgh and Cleveland and qualified for the 2022 FIRST World Championships in Houston at both of them. The team traveled to Houston in April and competed with hundreds of teams, visited NASA’s Johnson Space Center, made new friends, and more. In June the Girls of Steel BuzzBand team, a 2022 Lemelson-MIT InvenTeam, traveled to Boston for the Lemelson-MIT EurekaFest showcase at MIT where they presented the BuzzBand, an assistive device designed to help people on the autism spectrum with exercise.



Next up, the team is preparing for the upcoming 2022-2023 FIRST season! Check out our [blog posts!](#)

# PGSS

Pennsylvania Governor's School for the Sciences

## PGSS Celebrates 40th Anniversary

The Pennsylvania Governor's School for the Sciences returned to campus this summer, after two years of running remotely. 72 rising high school seniors, chosen from a pool of over 300 applicants from all over Pennsylvania, are spending 5 weeks of intensive study and research in our five core subject areas of Biology, Chemistry, Computer Science, Mathematics and Physics. This year also marks the 40th anniversary of the PGSS program, established by the Pennsylvania Department of Education at Carnegie Mellon in 1982. The PGSS 2022 program runs from June 26 through July 30. Our Scientific Symposium, at which the PGSS students will present the results of their research projects, will take place on July 28 and 29, and is open to the public. For details about the PGSS program, email [pgss@cmu.edu](mailto:pgss@cmu.edu) or phone 412-268-6669.

**Carnegie Mellon University**

College of Engineering

College of Engineering Summer Engineering Experience Camps



The College of Engineering Summer Engineering Experience (SEE) camps are week-long summer experiences for students between the ages of 13 - 16 who are interested in engineering. SEE gives students hand-on experience in different engineering disciplines. The SEE Making and Engineering camp for middle school students was held from July 11 - 15 and the SEE Transportation camp for high school students will take place from July 18 - 22.



Both camps focus on exposing students to different engineering disciplines and the concepts of problem-solving and design. In addition to educational presentations and lab tours throughout the week, the campers complete two group projects. One project is a structured assignment where each group must operate within a certain set of the parameters using the same materials to use. For the second project, the students are given a topic area and asked to work in groups to design a solution, allowing them to be innovative and creative. Both projects are intended to teach the students problem-solving, critical thinking and design concepts.



During the week of July 11th, 24 middle schoolers attended the Summer Engineering Experience Maker Camp, where they learned from speakers from a variety of engineering disciplines and toured computer, robotic, biomedical, materials characterization, and nanofabrication labs. During the first half of the week, under the



of weight without damaging the structure. The bridges underwent destructive weight testing on Thursday, July 14th with all the groups' bridges exceeding the 50-pound threshold. The winning team's bridge supported 215 pounds without damage to the structure.



Campers also worked in different groups to complete rapid prototyping projects using recycled materials. The campers presented their projects to family members on the last day of camp, Friday, July 15.



The Transportation camp will take place during the week of July 18 -22. Twenty-six high school students will attend and learn from speakers from a variety of engineering disciplines and experience lab tours that will focus on bridge construction, autonomous vehicles, air traffic control, hydrogen fuel cells, and field robotics. The campers will also complete two projects throughout the week.

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**[CMU K-12 Educational Outreach Directory](#)**

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**The Alice Project**

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Alice is an innovative block-based programming environment that makes it easy to create animations, build interactive narratives, or program simple games in 3D.

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**Center for Architecture Explorations**



## Center for Architecture Explorations

The [Center for Architecture Explorations \(CAE\)](#) develops programs that serve unique Kindergarten-professional architectural education paths. The CAE builds on our School's experience with youth education, university service learning projects, engagement with the architectural practice, and academic research to explore ways we can support architectural education pedagogy and foster equity and diversity in building industry professions.

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### College of Engineering

## Carnegie Mellon University College of Engineering

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### Computer Science Academy

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[CMU CS Academy](#) is a project in Carnegie Mellon University's School of Computer Science that has the goal of developing a novel, world-class, online, interactive high school computer science curriculum that is entirely free.

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**ECE Outreach**

ECE Outreach is program run by the Electrical and Computer Engineering department of Carnegie Mellon University that aims to provide high school and middle school students with opportunities to learn about and explore engineering through short lectures and hands-on labs. Run with the help of

[eceoutreach@gmail.com](mailto:eceoutreach@gmail.com)

<http://eceoutreach.ece.cmu.edu/>

### Entertainment Technology Center



**Carnegie Mellon University**  
Entertainment Technology Center

Providing leadership in education and applied research that combines technology and art, to explore learning, storytelling, innovation and entertainment, and to create experiences that educate, engage and inspire.

Imagine working with some of the smartest, most creative people on the planet to produce interactive media that's entertaining and engaging. Carnegie Mellon University's Entertainment Technology Center (ETC) excels at the intersection of technology, art and design. Here creative individuals are challenged to explore, experiment and collaborate to create games, designs and stories using the latest technologies.

#### John Balash

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### Girls of Steel



#### Theresa Richards

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**Mellon College of Science****Mentoring High School Students Towards Summer Session****William Alba**

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**National Robotics Engineering Center**

# Carnegie Mellon Robotics Academy

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**Office of the Assistant Vice Provost for Educational Outreach (AVPEO)****Leonard Gelfand Center**

# Carnegie Mellon University

## Leonard Gelfand Center

The Leonard Gelfand Center works with faculty, students and staff through on-campus and community-based activities that improve educational opportunities, especially in the areas of science, technology, engineering and mathematics education for youth. The Leonard Gelfand Center for Service Learning and Outreach was endowed by alumnus Mark Gelfand to create and strengthen partnerships with local schools and education providers.

**Dr. Judith Hallinen**[AVPEO](#)

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- Supports faculty Broader Impacts work
- Point of contact for PA Act 48, [K-12 educator PD](#)
- Designs & implements K-12 programs
- Advises [StuCo](#) (Student College)
- Consults with CMU students wishing to pursue careers in K-12 education

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- [StuCo](#) Course Administrator
- [Road to Research \(R2R\)](#) Programs
- [Gelfand Outreach](#) database developer
- [STEM Career Explorations and 360 Lab Tours](#) project manager
- Graphic & web design for AVPEO/LGC

**Pamela Piskurich**Program Director of the [Leonard Gelfand](#)**Miriam Wertheimer**Program Administrator of the [Leonard Gelfand](#)

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- [Gelfand Outreach](#) Program Director for Saturday and Summer programs
- Creates schedule and calendar for Gelfand Outreach programs
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- Gelfand Outreach Program Coordinator
- [K-12 LGC Tutoring Coordinator](#)

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### Office of the Provost - Simon Initiative

Named for the late Nobel and Turing Award laureate and CMU Professor Herbert A. Simon, the Simon Initiative harnesses a cross-disciplinary learning engineering ecosystem that has developed over several decades at Carnegie Mellon. The initiative's goal is to measurably improve student learning outcomes.

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# PGSS

Pennsylvania Governor's  
School for the Sciences



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**Pittsburgh Supercomputing Center**

Pittsburgh Supercomputing Center is a joint effort of Carnegie Mellon University and the University of Pittsburgh. Established in 1986, PSC provides university, government and industrial researchers with access to several of the most powerful systems for high-performance computing, communications and data storage available to scientists and engineers nationwide for unclassified research. PSC advances the state of the art in high-performance computing, communications and data analytics and offers a flexible environment for solving the largest and most challenging problems in computational science.

**Project Ignite**



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### Thank you to our contributors!

This newsletter is a collaborative project across CMU schools, colleges, departments, offices, programs and student organizations with information compiled and shared by Kristin Lavery of the Office of the Assistant Vice Provost for Educational Outreach and the Leonard Gelfand Center with the CMU campus community. We hope to expand our reach with each issue as this project grows and continually improves for our audience. If you have questions or comments about the individual articles, please reach out to the program contact directly. If you would like to add an additional CMU K-12 Educational Outreach directory listing or news item for subsequent issues of this newsletter, please contact [Kristin Lavery](#).



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