Penn State Summer Science Camps

2022 Day and Residential Camps for Students Entering Grades 2–12

www.ScienceCamps.psu.edu

DISCOVERY HAPPENS HERE!
Welcome to Science-U!

Dear Science-U Campers and Parents,

Welcome to the 2022 Science-U camp season!

We’re excited to invite you back for a fantastic summer of unforgettable science experiences here at Penn State’s University Park campus! Each of our Science-U camps is designed to take campers through a one-week journey that investigates an area of STEM (science, technology, engineering, and math) in a fascinating and meaningful way. Guided by our passionate staff, Science-U campers are encouraged to ask questions, think critically, and explore all the ways that science can captivate them and make a difference in their everyday lives. Our sincere hope is that every camper comes out of their Science-U experience inspired to stay curious and keep learning about the world around them!

For more information about Science-U and our 2022 camps, please visit www.ScienceCamps.psu.edu. Please also feel free to reach out to us at sciencecamps@science.psu.edu or 814-865-0083 with any questions. We look forward to seeing you this summer!

—The Penn State Science Outreach Team

“| Couldn’t have been more pleased. It was great for our son to be surrounded by peers as excited about science as he is. It was a great opportunity for mentors to share their experiences and inform campers of the many science opportunities available in college and beyond. Thanks!” — 2019 Science-U Parent

“I loved Science-U and I can’t wait to be involved with science in the future!” — 2019 Science-U Camper

“Everything was so much fun and interesting! Thank you so much for an amazing experience and a great time!” — 2019 Science-U Camper
CAMPS FOR KIDS ENTERING GRADES 2-5 IN FALL 2022

Nature Explorers: Cycles Galore!
June 20–24 • Day Camp • Grades 2–4
How do caterpillars turn into butterflies? Why do trees lose their leaves each year? Where does water go after it rains? What do plants need in order to grow? By exploring the cycles of nature, campers will unlock mysteries of the world around them. Campers will get the chance to dive into lab experiments to discover the science behind natural phenomena, and they’ll also get hands-on experience as they search for these phenomena in the great outdoors. Come and explore with us!

NittanyBots: LEGO® Robotics—The Journey to Master Builder
June 27–July 1 • Day Camp • Grades 2–3
July 5–8 • Day Camp • Grades 4–5
Science-U’s partnership with Way Cool STEM Education enters its 10th year with the NittanyBots camp! This camp will give kids the chance to use the latest LEGO WeDo and EV3 kits to build, program, and test robotics technology. Campers will learn how to use drag-and-drop computer programming to incorporate motors and sensors into their LEGO designs and will also have a blast developing their teamwork skills and creativity! By the end of camp, students will have the skills to build cool things from their imaginations, without instructions! Space is limited, so register early. We look forward to working with you on your journey to becoming a master builder!
Camper for Kids Entering Grades 5–8 in Fall 2022

Ecology Camp: The Wild Wonders of Your Own Backyard

JULY 5–8 • DAY CAMP • GRADES 6–8

Ecologists-in-training will spend a week traveling to ecologically important locations in Centre County, exploring unique water resources and ecosystems, and learning about the flora and fauna of our region. Daily, hands-on “Creature Features” will give campers the opportunity to learn to identify fish, amphibians, and reptiles. Campers will also use kick seines and hand nets in streams and ponds to sample, identify, and access invertebrate life as bioindicators of water quality. During the week, campers will paddle a canoe in our watershed, hike in ecologically significant areas, tour a fish hatchery, identify important trees, learn about acid mine damage to streams, build water filters, and gain awareness, understanding, and appreciation for the wild wonders of Centre County. Please note: Our camp is instructed in local and sometimes remote outdoor environments, including mountain tops, rocky trails, swamps, streams, and lake shore locations. Our activities will include several hikes of 2-3 miles, wading in swamps and streams, and participating in a guided 3.7-mile canoe trip on Bald Eagle Creek from Milesburg to Curtin Village.

Life...in Space!

JULY 11–15 • DAY CAMP • GRADES 5–7

Until a few years ago, anyone who mentioned aliens as a reality would have been laughed at. But now, astrobiology (the study of life in space) has started to take off! If there is life out there, would we recognize it? Where should we look? What are the chances of finding intelligent life? To answer these questions, campers will peer through telescopes, build rockets, and learn how to analyze alien atmospheres for signs of life. Join this camp if you’re interested in answering the biggest question of all: Are we alone in the universe?

Finding Your Roots

JULY 11–15 • DAY CAMP • GRADES 6–8

This camp is designed to get campers up close and personal with their own DNA so that they can explore the questions of where they come from and what makes them who they are. Campers will complete a DNA test before camp (secure DNA kits will be sent from Science-U) and will use information from their DNA test to talk about their traits like hair/eye/skin color, smell/taste perception, lactose intolerance, and caffeine metabolism with other campers. During camp, campers will discuss several topics, including inherited traits, evolution, and anthropology. Campers will also conduct genealogical research to learn about family members, their traits, and traditions. This camp is a place where the science is all about you—register today!

Designing the Future

JULY 25–29 • DAY CAMP • GRADES 5–6

Come help us design the car of the future! Together, we’ll discover the physics concepts that we’ll need for the car of the future, learn how to take an idea that’s in your head and put it into a Computer-Aided Design (CAD) program, test your design ideas, and then use a 3D printer to turn your design into an actual object you can hold in your hand! We’ll also look at how scientists, engineers, and even artists combine physics concepts with design and additive manufacturing techniques, such as 3D printing, to design and build the future! If you have lots of ideas for cool objects and want to learn how to make them a reality, this is the camp for you!
Make It Matter
JUNE 27–JULY 1 • DAY AND RESIDENTIAL SPOTS AVAILABLE! • GRADES 9–12
Creating a sustainable world for ourselves and for future generations really matters! Scientists and engineers have a huge role to play in building a sustainable future, and in this camp you’ll see how researchers in fields ranging from materials science to chemistry and biology make a difference by designing new materials, inventing new ways to create and store energy, studying how to protect our ecosystems, and much more! Through lab visits, field trips, demonstrations, leadership activities, and hands-on science challenges, you will be inspired to think about how you can harness the world-changing possibilities of science and engineering in entirely new ways! Join us for an unforgettable experience focused on making sustainability matter! (Note: The first full day of camp is Monday, June 27, but all campers will check in for an opening ceremony the evening of Sunday, June 26.)

Penn State Premed Academy
JULY 18–22 • DAY CAMP • GRADES 9–12
Explore the human body and the limitless options within the medical field at Penn State Premed Academy! Together, we will navigate through the wonderful world of the human body to learn important anatomical and physiological structures. We won’t just learn WHAT is inside your body, but WHY it is there and HOW it works (and how it can malfunction)! Our journey into the health field will include performing our own dissections using animal tissue. You’ll have the opportunity to learn medical techniques, use medical equipment, and gain exposure to the amazing specialties and career possibilities that await in the medical field! (Hint: Being a doctor is not the only option!) So, what are you waiting for? Join us for our encore Penn State Premed Academy for high school students!

*Please also note that campers will be working with preserved and/or fresh (unpreserved) animal tissue on a daily basis.* As a result, we recommend this experience only for students who are comfortable working with animal tissue. Please contact Science-U if you have any specific questions about the camp.
Artificial Intelligence and Machine Learning Mini Summer School
JUNE 20–24 • GRADES 10–12
Brought to you by the same team as our previous year’s Gravitational Waves and Multimessenger Astrophysics camp, learn all about how scientists use artificial intelligence and machine learning to do cutting-edge science! Students will get hands-on experience with data-analysis tools and methods including high-performance computing. A short application will be available at our website in March 2022. Registration is free for accepted applicants, but only a limited number of spots are available. Please reach out to us at sciencecamps@science.psu.edu with any questions or if you would prefer to receive the application information via email.

STEM Camp for High School Students on the Autism Spectrum
AUGUST 1–4 • GRADES 9–12
This 3.5-day camp will take place at Penn State’s University Park campus during the National Autism Conference and is designed for college-bound high school students who are on the autism spectrum. The camp is brought to you in partnership with the Pennsylvania Training and Technical Assistance Network (PaTTAN), a project of the Pennsylvania Department of Education’s Bureau of Special Education. This year’s theme will be decided, and registration will open in late March—and the registration fee is only $25 per camper! (Housing not included.) Please visit our website or reach out to us at sciencecamps@science.psu.edu for more information!

“My daughter had a fantastic time learning about various aspects of science. As a first timer, we were unsure what to expect but the program was so informative and organized. It didn’t take long to figure things out. The staff were awesome and helpful, and her group mentor was the absolute best. He went out of his way to accommodate the kids to ensure a great experience for everyone.”
—2019 Science-U Parent
### 2022 Camp Prices

See the back for information about camp financial aid and scholarships!

<table>
<thead>
<tr>
<th>Camp Name</th>
<th>Dates/Times</th>
<th>Grade in Fall</th>
<th>By March 19</th>
<th>After March 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature Explorers: Cycles Galore!</td>
<td>June 20–24 9:00 A.M.–4:00 P.M.</td>
<td>2–4</td>
<td>$365</td>
<td>$395</td>
</tr>
<tr>
<td>Make It Matter Residential Camp</td>
<td>June 26–July 1 9:00 A.M.–4:00 P.M.*</td>
<td>9–12</td>
<td>$815</td>
<td>$845</td>
</tr>
<tr>
<td>Make It Matter Day Camp</td>
<td>June 27–July 1 9:00 A.M.–4:00 P.M.*</td>
<td>9–12</td>
<td>$365</td>
<td>$395</td>
</tr>
<tr>
<td>NittanyBots: LEGO® Robotics—The Journey to Master Builder</td>
<td>June 27–July 1 9:00 A.M.–4:00 P.M.</td>
<td>2–3</td>
<td>$365</td>
<td>$395</td>
</tr>
<tr>
<td>NittanyBots: LEGO® Robotics—The Journey to Master Builder</td>
<td>July 5–8** 9:00 A.M.–4:00 P.M.</td>
<td>4–5</td>
<td>$295</td>
<td>$325</td>
</tr>
<tr>
<td>Ecology Camp: The Wild Wonders of Your Own Backyard</td>
<td>July 5–8** 8:30 A.M.–4:45 P.M.</td>
<td>6–8</td>
<td>$355</td>
<td>$385</td>
</tr>
<tr>
<td>Finding Your Roots</td>
<td>July 11–15 9:00 A.M.–4:00 P.M.</td>
<td>6–8</td>
<td>$425</td>
<td>$455</td>
</tr>
<tr>
<td>Life...in Space!</td>
<td>July 11–15 9:00 A.M.–4:00 P.M.</td>
<td>5–7</td>
<td>$365</td>
<td>$395</td>
</tr>
<tr>
<td>Penn State Premed Academy</td>
<td>July 18–22 9:00 A.M.–4:00 P.M.</td>
<td>9–12</td>
<td>$375</td>
<td>$405</td>
</tr>
<tr>
<td>Designing the Future</td>
<td>July 25–29 9:00 A.M.–4:00 P.M.</td>
<td>5–6</td>
<td>$385</td>
<td>$395</td>
</tr>
</tbody>
</table>

*High school camps that have residential spots may have evening activities scheduled that are open to and recommended for all campers! These evening activities will be communicated to registered campers as soon as possible and flexible arrangements can be made for day campers if they are unable to stay for evening activities.

**Please note that due to the July 4 holiday, camps scheduled for July 5-8, Tuesday–Friday, are just four days long.

---

### Registration Guideline

An Eberly College of Science guideline for Science-U camps authorizes only students attending school in the United States to register for camps. As in previous years, parents/guardians are required to identify their child’s school/school district during registration. Registrations that do not identify a U.S. school or school district will not be accepted.

### Residential Program Information

Students entering grades 9–12 may choose to stay at Penn State for any camp that has a designated residential component. Campers stay in the University Residence Halls on campus from Sunday evening until Friday when camp closes (camp schedules vary). Evening mentors supervise activities and outings.

---

### Extended Care Option

Two sessions of extended care are offered for campers entering grades 2–8, and the cost is $35/week for the morning session, $30/week for the afternoon session, or $55/week for both morning and afternoon extended care. Morning care is available the second camp day through Friday with drop-off as early as 7:45 a.m., and afternoon extended care is available the first camp day through Thursday with pickup as late as 5:15 p.m.

**Extended care will not be provided on the first camp day mornings or Friday afternoons. Weeklong camps begin with an opening ceremony on the first day and conclude with camp-specific closing ceremonies on Friday afternoons. Campers will be dismissed immediately after the closing ceremonies.**

---

Register online at [www.ScienceCamps.psu.edu](http://www.ScienceCamps.psu.edu)
Financial Aid and Scholarships Available!
Financial aid and scholarships are available to help families cover the cost of a Science-U camp! For more information on how to apply for financial aid or for a scholarship to the Make It Matter camp, please visit https://science.psu.edu/outreach/science/scholarships or call 814-865-0063.

Commitment to Youth Safety
The Pennsylvania State University is committed to providing a safe environment for all youth participating in activities offered through the University. All Penn State youth programs have policies in place to ensure the safety of youth participating in our programs and to ensure safety is not compromised. All camp staff are trained in emergency protocols and all relevant internal, external, and parental requirements.

Parents are encouraged to notify the Eberly College of Science's outreach staff immediately at science@psu.edu or 814-865-0063 if they, or their child, are experiencing problems, difficulties, or concerns with the camp, other youth in the camp, and/or camp staff.

You may also contact Sandy Weaver, youth programs compliance specialist, at stev129@psu.edu or 814-865-8765, or call the University's Ethics Hotline at 1-800-560-1357.

Science-U is an outreach program of the Penn State Eberly College of Science.

COVID-19 Information
The Pennsylvania State University requires adherence to its policies at all times while on Penn State property or attending University events. Penn State has issued rules and precautions which follow, or may in some cases exceed, guidance from the Centers for Disease Control (CDC) issued in response to the COVID-19 pandemic. By attending or participating in this program, event, or activity, you agree to adhere to such guidance and policies, you acknowledge the risk of being exposed to or infected by COVID-19, and you assume any and all such risk.

As of August 4, 2021, this guidance includes basic health, safety, and sanitation measures (staying home when sick, washing/sanitizing hands often, etc.) in addition to wearing a face mask while using public transportation or while in any indoor public space at any University location, including classrooms of any size, meeting rooms, common areas in residence halls, and all indoor events. You must adhere to these protocols regardless of vaccination status. Science-U will notify participants of any changes in these policies prior to the start of camp.

Connect with us!
Make science part of your everyday life and connect with us on social media! Follow us to hear about other amazing STEM programs at Penn State and get ideas for science activities!

facebook.com/scienceupsu
youtube.com/PSUscienceu
instagram.com/scienceupsu
twitter.com/scienceupsu

Do It Yourself
ONLINE ACTIVITY RESOURCE CENTER

Science-U, the Eberly College of Science, and WPSU-TV have teamed up to help bring exciting science experiments straight to your home! Go to science-u.org to check out the videos, instructions, and pro tips. You don't know what you can discover until you try!

2022 Sponsors

This publication is available in alternative media on request. Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability or protected veteran status. U.E.d. SCI 22-00 MPC S160255.

The Pennsylvania State University encourages qualified persons with disabilities to participate in its programs and activities. If you anticipate needing any type of accommodation or have questions about the physical access provided, please contact the Office of Science Outreach at 814-865-0063 in advance of your participation or visit.

MORE INFORMATION? CALL 814-865-0063 OR VISIT www.ScienceCamps.psu.edu