

# GRANDPARENTS UNIVERSITY®

PURDUE FOR LIFE FOUNDATION



# WELCOME TO GRANDPARENTS UNIVERSITY!

The Purdue for Life Foundation is thrilled that you are here on Purdue's beautiful West Lafayette campus. Whether you're a young Boilermaker or a Boilermaker who is young at heart, these next two days will be filled with opportunities to learn *with* each other and *from* each other.

So get ready to discover the incredible curriculum our Purdue faculty, staff, and experts have prepared; laugh together during handson activities, classes, free time, and field trips; and create lasting memories along the way.





# SCHEDULE OF EVENTS



### 1-1:15PM 🔘 Transition Time

A classroom ambassador will help gather your group in the ballrooms before leading you to your major. Please look for the sign with the name of your major on it, and line up there.

1:15PM • Depart for Majors // Purdue Memorial Union Ballrooms

### 1:30-4:30PM 🔶 Class Time

Each major will have a 15-minute snack break, with snacks provided.

### 4:30-5PM 🔘 Transition to Block Party

### 5-7PM 🔶 Boilermaker Block Party // Memorial Mall

Get ready for an evening of music, food, and fun! Enjoy inflatable games, a caricature artist, and photo opportunities. You will also get the chance to send a Purdue postcard home, make friendship bracelets together, and design your own graduation cap!

Please remember that grandparents must be with their grandchildren at all times. Evening activities are only for registered participants of Grandparents University.

OFF WE GO

### FRIDAY

7:30-8:30AM 🔶 Breakfast // Purdue Memorial Union Ballrooms

### 8:30-8:45AM 🜔 Transition Time

A classroom ambassador will help gather your group in the ballrooms before leading you to your major. Please look for the sign with the name of your major on it, and line up there.

8:45AM • Depart for Majors // Purdue Memorial Union Ballrooms

9-11:30AM 🔶 Class Time

Each major will have a 15-minute snack break, with snacks provided.

### 11:30AM-NOON 🜔 Transition to Lunch

NOON-1PM 🔶 Lunch // Purdue Memorial Union Ballrooms

1-1:30PM • Processional to Graduation

1:30-2:30PM

Graduation // Elliott Hall of Music

Congratulations! You are officially a graduate of Grandparents University 2024. All participants will receive a special Purdue gift for completing the program, and grandchildren will be recognized on stage for their GPU achievements.





# MAJORS

This year, we are proud to present almost 30 Grandparents University majors—all of which are taught by Purdue faculty and staff or Boilermaker experts. Some majors are available for both sessions, but many are only available during one of the sessions.

An adult must accompany each child at all times during the activities related to the major.

### **Guide to Physical Activity Levels**

Levels of physical activity vary among majors and field trips. We have made every effort to honor accessibility requests made in advance.

- Low: Most activities and tours take place indoors with some walking required. Majors will have mostly seated activities.
- Medium: Some movement and walking required between classrooms and venues, which may include stairs.
  Long periods of standing may be required, and outdoor activity is possible.
- **High:** Significant movement and physical activity, including walking or hiking outdoors.





SESSION 1 SESSION 2

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# ADVANCING ANIMAL HEALTH

#### SESSION 1

TAUGHT BY:	Mandy Limiac
FACILITATED BY:	College of Engineering
AGE GROUP:	7–14
ACTIVITY LEVEL:	High
LOCATION:	Agricultural & Biological Engineering Building

Experience the world of agricultural and biological engineering from farm and forest to food and pharmaceuticals! Learn about the technologies that support global crop production, discover how ecological engineers create designs and restore ecosystems, and hear how bioprocess engineers solve problems related to health, food, and the environment.

#### EXAMPLES OF ACTIVITIES:

- Discover how drones and robots are pushing agriculture into the digital age—and then fly/drive them
- Explore a stream redesign site
- Get a taste for bioprocess engineering by making popping boba

TAUGHT BY:	Chad Brown
FACILITATED BY:	College of Veterinary Medicine
AGE GROUP:	11–14
ACTIVITY LEVEL:	Medium
LOCATION:	Charles J. Lynn Hall of Veterinary Medicine

Discover some of the day-to-day activities of a veterinarian and veterinary nurse. You'll get to see what they see by working directly with live animals, studying X-rays, and even examining the microorganisms that live inside a cow's stomach!

- · Practice physical exam techniques on a dog
- Reach inside a real cow's stomach
- Look at blood cells under a microscope





#### SESSION 2

TAUGHT BY:	Ron Reger and Neil Dilley
FACILITATED BY:	Discovery Park District at Purdue
AGE GROUP:	7–14
ACTIVITY LEVEL:	Low
LOCATION:	Birck Nanotechnology Center

Can you imagine a world that's too small to see? Introducing nanotechnology! Explore nanoscale science and engineering, and learn about their impacts on society. By engaging with engineers and scientists, you'll discover materials and technologies that are changing the world.

#### EXAMPLES OF ACTIVITIES:

- Experiment with and manipulate liquid crystals and thin films
- Tour the nanotechnology center's research cleanroom
- Watch a nano ice cream demonstration before enjoying your own sweet treat



#### SESSION 1 SESSION 2

TAUGHT BY:	Sarah Nern, Steven Smith, and Bill Bayley
FACILITATED BY:	College of Science
AGE GROUP:	11–14
ACTIVITY LEVEL:	Medium
LOCATION:	Herbert C. Brown Laboratory of Chemistry

Is it magic? No, it's science! Get ready to amaze your family and friends by learning how to perform mind-bending science demonstrations and discovering the science behind them. And because you're not a magician, you'll be able to tell your audience the secrets behind every one of your tricks!

- Conduct investigations and solve puzzles using science
- Uncover the secrets behind demonstrations using air pressure, wavelengths of light, and the laws of physical science
- Engage in friendly competitions using the science you've learned



### BUILDING YOUR WORLD

#### SESSION 1 SESSION 2

TAUGHT BY:	Juliana Pereira and staff from the Women in Engineering Program
FACILITATED BY:	College of Engineering
AGE GROUP:	7–14
ACTIVITY LEVEL:	Low
LOCATION:	Thomas S. and Harvey D. Wilmeth Active Learning Center

Have you ever thought about who designs the structures around you—things like buildings, bridges, and roads? That would be civil engineers! Using imagination and innovation, civil engineers create sustainable designs that we see every day, and now it's your turn!

#### EXAMPLES OF ACTIVITIES:

- Create your very own structure
- Learn how buildings are designed to withstand extreme weather
- Discover how engineers are preparing cities for the future



# **CONNECTING FAMILIES**

#### SESSION 1 SESSION 2

TAUGHT BY:	Rua Williams
FACILITATED BY:	Purdue Polytechnic Institute
AGE GROUP:	7–14
ACTIVITY LEVEL:	Low
LOCATION:	Thomas S. and Harvey D. Wilmeth Active Learning Center

How does your family stay connected? Do you video chat? Do you share pictures of exciting moments? What if you could create a game that you could play together—no matter where you are? Discover how to use technology and design to create a game that combines in-person and digital features.

- · Learn about the technology ecosystems we have in our homes
- Imagine how your favorite games could become shared experiences in different homes
- Create three collaborative games, pick the best aspects of each one, and play the final game together



### **CULINARY ADVENTURES**

#### SESSION 2

TAUGHT BY:	Deandrae Smith
FACILITATED BY:	College of Agriculture
AGE GROUP:	7–14
ACTIVITY LEVEL:	Low
LOCATION:	Philip E. Nelson Hall of Food Science

Discover the fascinating world of food by exploring how raw ingredients transform into delicious and nutritious meals. Uncover the science and technology that helps food end up on our tables while also learning about the importance of healthy eating habits.

#### **EXAMPLES OF ACTIVITIES:**

- Prepare a recipe using only the ingredients and utensils provided
- Host a tasting session where everyone can sample the food
- Evaluate samples of food processed using microwave technology



# DIAGNOSTIC DETECTIVES

#### SESSION 1

TAUGHT BY:	Lisa Hilliard
FACILITATED BY:	College of Health and Human Sciences
AGE GROUP:	11–14
ACTIVITY LEVEL:	Low
LOCATION:	Thomas S. and Harvey D. Wilmeth Active Learning Center

Figuring out what's wrong when you're sick takes a lot more than checking a website for symptoms. Explore the world of medical laboratory science, where experts detect and diagnose disease. Uncover how these scientists do their detective work using their knowledge of anatomy and the body's own defense system.

- Construct a kidney model to see how it functions when you're healthy and when you're sick
- Discover how blood helps your body fight germs
- Play the role of a medical laboratory scientist and diagnose patients based on symptoms



### ENGINEERING IN SPACE

#### SESSION 1 SESSION 2

TAUGHT BY:	Brianne Wrede and staff from the Women in Engineering Program
FACILITATED BY:	College of Engineering
AGE GROUP:	7–14
ACTIVITY LEVEL:	Low
LOCATION:	Thomas S. and Harvey D. Wilmeth Active Learning Center

When you think about going to space, you probably think about astronauts. But what about engineers? Through the design, creation, and operation of aircraft, rockets, and spacebased systems, engineers play a big part in space exploration! Discover space from an engineer's perspective, and learn about their roles in recent missions to space.

#### EXAMPLES OF ACTIVITIES:

- Build your very own rocket
- Explore origami in space engineering



## FUTURE TEACHERS

#### SESSION 1

TAUGHT BY:	Adrie Koehler, Jennifer Richardson, and Wanju Huang
FACILITATED BY:	Purdue Polytechnic Institute
AGE GROUP:	7–14
ACTIVITY LEVEL:	Low
LOCATION:	Steven C. Beering Hall of Liberal Arts and Education

Digital storytelling, web applications, and artificial intelligence are changing the ways teachers teach and students learn. By discovering how to use technology safely, you can unlock a world of new educational experiences. Step into your teacher's shoes, and find out how technology is advancing your classroom!

- Investigate a topic and create a digital story using iPads
- Learn how artificial intelligence can support teaching and learning
- Design a learning experience from a teacher's perspective



### HEALTH EXPLORERS

#### SESSION 1 SESSION 2

TAUGHT BY:	Elizabeth Wertz
FACILITATED BY:	College of Health and Human Sciences
SESSION 1 AGE GROUP:	7–10
SESSION 2 AGE GROUP:	11–14
ACTIVITY LEVEL:	Low
LOCATION:	Lyles-Porter Hall

You're being paged—get ready to unravel some of the mysteries of the human body! Discover what a career in health care would look like by working with and learning from Boilermakers in Purdue's School of Nursing.

#### **EXAMPLES OF ACTIVITIES:**

- Learn about vital signs and practice taking them
- Discover the world of germs—how they spread and how to keep yourself healthy
- Explore various systems of the body and how they work together



SESSION 1 SESSION 2

TAUGHT BY:	Amanda Deering
FACILITATED BY:	College of Agriculture
AGE GROUP:	7–14
ACTIVITY LEVEL:	Low
LOCATION:	Philip E. Nelson Hall of Food Science

What do peppers, bacteria, and hot sauce all have in common? You! Before you create your own hot sauce to take home, you'll learn more about its basic ingredient—bacteria. Study the natural bacteria present on different varieties of peppers, and discover how that bacteria can be put to work to make hot sauce!

- Explore the natural bacteria on different peppers
- Prepare hot sauces from the peppers—making sure to measure the pH and allowing it to ferment overnight
- Test the pH the next day, evaluate the different results, and take your hot sauce home to enjoy





SESSION 1 SESSION 2

TAUGHT BY:	Emily Justus
FACILITATED BY:	College of Agriculture
AGE GROUP:	11–14
ACTIVITY LEVEL:	Low
LOCATION:	Smith Hall

Explore the awesome world of arthropods—the species that makes up approximately 80% of all living animals on Earth. The numbers are large, but the creatures are not! Insects, spiders, scorpions, millipedes, and isopods—discover how all of these bugs interact with each other and the world around them.

#### EXAMPLES OF ACTIVITIES:

- Explore the habitats of these crawling creatures
- Learn about what they need to survive
- Meet and interact with residents of the Purdue Bug Barn





#### SESSION 1

FAUGHT BY:	Elizabeth Parkinson
FACILITATED BY:	College of Science
AGE GROUP:	7–14
ACTIVITY LEVEL:	Low
LOCATION:	Chaney-Hale Hall of Science

Get ready to look at dirt like a scientist and explore the bacteria that live in your own backyard! Discover how the bacteria found in soil can be used to make antibiotics—maybe even ones you've taken!

- Isolate bacteria from soil
- Learn how microorganisms make molecules that we use as medicines
- Observe Streptomyces bacteria and the colored compounds they produce



### MONSTER INNOVATION

#### SESSION 1

TAUGHT BY:	Sarah Huber and Victoria Thomas
FACILITATED BY:	Purdue Libraries and School of Information Studies
AGE GROUP:	7–14
ACTIVITY LEVEL:	Low
LOCATION:	Thomas S. and Harvey D. Wilmeth Active Learning Center

Monsters are on the loose in Purdue Libraries! Well, not yet, but they will be once you create them! After making sure your design complies with American Society of Monster Engineering standards and that it doesn't infringe on other monster patents, you'll be able to transform your design into a constructed creation.

#### EXAMPLES OF ACTIVITIES:

- Design a cardboard monster prototype
- Study standards and patents for prototypes
- Add excitement to the creation with circuitry



#### SESSION 1 SESSION 2

TAUGHT BY:	Thomas Siegmund
FACILITATED BY:	College of Engineering
AGE GROUP:	11–14
ACTIVITY LEVEL:	Medium
LOCATION:	Chaney-Hale Hall of Science

Have you ever broken a bone before? Have you ever wondered why bones break after some falls but not others? Get ready to learn all about bones—what makes them weak, what makes them strong, and how to keep the strong. What's the best way to learn about bones? By creating your own, of course!

- Make your own bones and then break them
- Discover what your bones are made of
- Learn how bones change as you get older



### PREVENT AND PROTECT

#### SESSION 1

TAUGHT BY:	Mark Wilson
FACILITATED BY:	College of Health and Human Sciences
AGE GROUP:	11–14
ACTIVITY LEVEL:	Medium
LOCATION:	Thomas S. and Harvey D. Wilmeth Active Learning Center

Who protects your community? A police officer? A firefighter? What about you? You can play a big role in protecting your community by learning how to prevent disease and promote wellness. Prepare yourself for the job by learning how to recognize, evaluate, control, and confirm health hazards.

#### EXAMPLES OF ACTIVITIES:

- Train for your job through the Industrial Hygiene Heroes video game
- Conduct air and surface sampling to discover potential health hazards
- Create controls and establish protocols to keep your community safe from identified hazards





#### SESSION 1 SESSION 2

TAUGHT BY:	Bruce Goad
FACILITATED BY:	College of Health and Human Sciences
AGE GROUP:	7–14
ACTIVITY LEVEL:	Low
LOCATION:	John Purdue Room in Marriott Hall

Opening a dream restaurant is only the beginning—you have to make money to stay in business. Discover the secrets to great hospitality and the details that make a food-service operation successful, including cleanliness, wonderful employees, and—of course—delicious menus!

- Design a menu
- Make your own dish in a commercial kitchen
- Practice managing your restaurant's money in a fun competition



#### SESSION 1 SESSION 2

TAUGHT BY:	Wan-Ting Chiu
FACILITATED BY:	Mitchell E. Daniels, Jr. School of Business
AGE GROUP:	7–14
ACTIVITY LEVEL:	Medium
LOCATION:	Jerry S. Rawls Hall

Messy rooms. Confusing homework problems. Chores you wish would do themselves. You encounter problems every day! If you have ever come up with a solution, then it's time to enter the shark tank. Discover your inner entrepreneur before getting the chance to pitch your very own ideas!

#### EXAMPLES OF ACTIVITIES:

- Create possible solutions to real-world problems
- Learn about product development and how to conduct market research
- Discover how to find solutions to problems through reverse brainstorming



#### SESSION 1 SESSION 2

TAUGHT BY:	Sascha Harrell
FACILITATED BY:	Purdue's Indiana Manufacturing Competitiveness Center
AGE GROUP:	7–14
ACTIVITY LEVEL:	Medium
LOCATION:	Indiana Manufacturing Institute

Discover new ways to design, innovate, create, and solve problems through STEM! From building with Legos to working with robots, get ready to explore just how fun and exciting science, technology, engineering, and math can be—and find out why STEM is important.

- Experience 3D printing
- Explore STEM through robotics, including Dobot, Dash and Dot, and Sphero
- Tour a micromanufacturing testbed



### SUPPORTING CONSERVATION

#### SESSION 1 SESSION 2

TAUGHT BY:	Steve Thompson
FACILITATED BY:	College of Veterinary Medicine
AGE GROUP:	11–14
ACTIVITY LEVEL:	High
LOCATION:	Charles J. Lynn Hall of Veterinary Medicine

There are a lot of actions you can take to protect Earth's incredible animals, and there are certain things only professionals can handle. Discover how veterinarians treat and support species facing infectious disease outbreaks, and learn about the heartwarming but delicate process of reintroducing animals to their habitats.

#### EXAMPLES OF ACTIVITIES:

- Learn fascinating facts about animals from Columbian Park Zoo visitors
- Discover how we learn more about snakes by using tracking devices
- Watch a video of a snake surgery



# THE ART OF NATURE

#### SESSION 2

TAUGHT BY:	Tami Mosier and Effie Campbell
FACILITATED BY:	College of Agriculture
AGE GROUP:	7–14
ACTIVITY LEVEL:	Low
LOCATION:	Thomas S. and Harvey D. Wilmeth Active Learning Center

Experience nature in a new way by combining art with science! Learn how to sketch scientific observations using various creative techniques, create your own maps, and simulate water flow in a miniature landscape. You'll be amazed by what you can create while exploring the world around you.

- Watch contour lines and elevations come to life by creating 3D models
- Become a cartographer by creating a watercolor fantasy map
- Conduct an archaeological cookie dig



### THE POWER OF PODCASTING

#### SESSION 2

TAUGHT BY:	Kate Young
FACILITATED BY:	College of Liberal Arts
AGE GROUP:	11–14
ACTIVITY LEVEL:	Low
LOCATION:	Convergence Center for Innovation and Collaboration

Purdue uses its podcast to tell all kinds of stories—from scientists who create lifesaving cancer treatments to legendary Purdue athletes and coaches. Explore how you can create a podcast to tell your own stories! You'll even get to hear behind-the-scenes info from your favorite Boilermakers.

#### **EXAMPLES OF ACTIVITIES:**

- Learn how to prepare and conduct an interview
- Discover more about the podcast industry
- Create your very own short podcast clip



# TINY HOUSE ENGINEERING

#### SESSION 1

TAUGHT BY:	Nusrat Jung
FACILITATED BY:	College of Engineering
AGE GROUP:	11–14
ACTIVITY LEVEL:	Medium
LOCATION:	Delon and Elizabeth Hampton Hall of Civil Engineering

Purdue University's campus may be huge, but this is one tiny house! Focus on the future of our planet by learning about energy efficiency and complex building systems in a 192-square-foot house called zEDGE. After learning about Purdue's tiny house and its sustainable systems, you will get to design your own!

- Install temperature sensors in Purdue's tiny house
- Investigate how electrical appliances affect energy consumption
- Measure volatile organic compounds in the house using scented products, such as air-cleaning spray



### WEATHER OR NOT

#### SESSION 1

TAUGHT BY:	Beth Hall
FACILITATED BY:	College of Agriculture
AGE GROUP:	11–14
ACTIVITY LEVEL:	Low
LOCATION:	Thomas S. and Harvey D. Wilmeth Active Learning Center

Congratulations! You've just won a free vacation to a beautiful spot in the U.S. You'll need to determine the typical climate of your location and what the weather will look like while you're there—but what's the difference? Learn how to identify clues to help you pack perfectly!

#### EXAMPLES OF ACTIVITIES:

- Discover some of nature's clues for incoming weather
- Learn where weather forecasts come from
- Explore the causes of and contributors to the greenhouse effect





#### SESSION 1 SESSION 2

TAUGHT BY:	Angie Klink (LA'81)
FACILITATED BY:	College of Liberal Arts
AGE GROUP:	7–10
ACTIVITY LEVEL:	Low
LOCATION:	Krannert Building

This is your chance to learn from and write with a beloved Boilermaker author! Every book starts with just an idea, but then it goes through quite the journey—research, interviews, putting words to ideas, and illustrations. Get ready to go on your own journey as you create a book filled with memories!

- Interview grandparents to create a lap-book biography
- Explore examples of Amelia Earhart's writings from Purdue Archives and Special Collections
- · Celebrate your achievements as an author with a book launch

# HAIL PURDUE

### FIRST VERSE

To your call once more we rally; Alma mater hear our praise; Where the Wabash spreads its valley, Filled with joy our voices raise. From the skies in swelling echoes Come the cheers that tell the tale Of your vict'ries and your heroes, Hail Purdue! We sing all hail!

### CHORUS

Hail, hail to old Purdue! All hail to our old gold and black! Hail, hail to old Purdue! Our friendship may she never lack. Ever grateful, ever true, Thus we raise our song anew Of the days we've spent with you, All hail our own Purdue!







Stay connected. Get involved. Give back.