



Descriptions of Student Workshops and Parent Sessions (including information about presenters)

Student Hands-on Workshops (choose 3)

Technology: Robotics

Robotics 101: Build and Program a Robotic Hand

Kat Ray, Software Developer, Yahara Software

Explore the exciting world of robotics and mechanical engineering as you build a robotic hand that can be programmed to tap out a creative rhythm. Along the way, you'll learn foundational robotic concepts and vocabulary. Combine problem-solving and critical thinking skills with your creativity and computer science principles to make something awesome.



Kat Ray is a software developer at Yahara Software, a Madison-based consulting firm that works with clients across many industries to create custom software solutions for their business needs. Kat's current project is an application for biology research labs specializing in cellular regenerative medicine. She is passionate about STEM outreach and education and volunteers with organizations that aim to increase minority representation in tech fields. Her free time is usually spent rock climbing, jogging, cooking, crocheting, reading, or listening to podcasts.

Forensic Science

Bust Crimes with Technology

Detective Erin Johnson, Janesville Police Department

You have probably seen detective shows and movies, but do you know how technology and science are used to solve real-world crimes? Do you have what it takes to be a crime scene investigator? Jump into an investigation to find and gather evidence using technology to unravel a crime scene. Law enforcement works closely with the crime lab to analyze evidence including fingerprints, shoeprints, firearms, DNA, blood stains, tool impressions, and more. Experience it firsthand!



Erin Johnson is a crime-solving enthusiast with a knack for cracking the toughest cases. Specializing in crime scene investigation since 2016, she is dedicated to bringing justice to the community by uncovering the truth. Detective Johnson graduated from the University of Wisconsin–Platteville with a criminal justice major and a forensic investigation minor. Let's work together to make our communities safer! In her free time, she enjoys home renovation projects.

Meteorology

Solving Weather Mysteries

Amanda Morgan, Meteorologist, WMTV 15 News, Madison

Weather impacts every person on the planet, but how it works is a mystery to most! This workshop will teach you the basics of what creates changes in the weather and global climate. You'll learn the difference between high and low pressure by creating clouds in plastic bottles. You'll produce your own warm and cold fronts to see how changing temperatures generate movement in the atmosphere. Don't miss this opportunity to build your mini climate model and observe factors that can cause warming or cooling in an environment.



Amanda Morgan grew up in rural Minnesota. Her interest in nature and earth science started when she was young and blossomed into a curiosity about weather in high school. She followed that curiosity and earned a degree in Atmospheric and Oceanic Science at UW–Madison. She spent the first few years of her broadcast career in Rochester, Minnesota before returning to Madison to work at WMTV. She loves the Midwest for its wild range of weather; she has forecasted everything from blizzards and tornado outbreaks to tropical storms.

Biology: Genetics

Wear Your Genes!

Dr. Kirsten Crossgrove, Genetics and Molecular Biology, UW–Whitewater

Experience the thrill of extracting your own DNA! In this session, you will isolate deoxyribonucleic acid (DNA) from your cheek cells, as well as from strawberries or bananas, and watch it form visible white strands as it precipitates out of a solution. You will collect the strands in a tube that you'll string on a necklace to take home. Along the way, you'll learn about the beauty of the DNA structure and how its structure relates to its function.



Dr. Kirsten Crossgrove has taught Genetics and Molecular Biology at UW–Whitewater since 2004. She majored in biology and neuroscience at Oberlin College, a small liberal arts college in Ohio, where she was first introduced to molecular biology and the study of how genes work. She was instantly hooked. She completed a Ph.D. in Molecular Biology at the University of Pennsylvania in Philadelphia. Now she gets to teach and do research which excites her to learn more about how genes direct the development of complex organisms like us.

Chemistry

Electrolyte Challenge: Juice versus Sports Drink

Dr. Kimberly Naber, Lecturer, Chemistry Department, UW–Whitewater

Sports drink companies spend millions of dollars on advertising their beverages each year. They typically tell you that you need their products to replenish the electrolytes you lose through sweat when you exercise. In this workshop, you will uncover the truth when you compare the electrolytes in a sports drink with those in juices and other beverages. You'll discover which beverages have more electrolytes to replenish what you lose when you work out or play sports.



Dr. Kimberly Naber was born and raised in southern Wisconsin. An early interest in learning and teaching led her to a career teaching chemistry at UW–Whitewater where she had studied chemistry as a student. She earned her PH.D. at UW–Madison studying the chemicals in the nervous system of crabs. Kim loves animals and lives on a nearby farm.

Biology: Medicine

Surgical Intern for a Day

Dr. Christine Chuppa, OB/GYN, Fort HealthCare

Dr. Molly Larson, OB/GYN, Fort HealthCare

Dr. Elizabeth Lynk, OB/GYN, Fort HealthCare

Medicine is the ultimate helping profession. You may help to bring a new life into the world or save another life from ending. In this workshop with "a peel," you will scrub and gown up for surgery, place sutures on a banana, and perform a local injection and biopsy of an orange. You will learn sterile techniques and surgical skills under the guidance of physicians at Fort HealthCare Center for Women's Health. Join us for a close and revealing peek into the world of medical careers.



Dr. Christine Chuppa is a graduate of UW–Madison and interned at St. Luke's Hospital, Kansas City. She enjoys caring for women throughout every stage of life. She is interested in obstetrics, minimally invasive surgery, infertility, and cancer screening/prevention. Her interests include teaching residents, nurse practitioners, medical students, and presenting health topics to the community. She also enjoys spending time with her family, photography, scrapbooking, church activities, quilting, and playing the violin.



Dr. Molly Larson graduated from The College of William and Mary in Williamsburg, VA, and the University of Colorado–Denver School of Medicine. She completed her residency at Saint Joseph Hospital in Denver. She is interested in the broad scope of women's health. She is proud of the lasting relationships she can build with her patients. In her spare time, Dr. Larson enjoys spending time with her family and two dogs. She also enjoys running, and cycling, and is an amateur bread baker.



Dr. Elizabeth Lynk is an obstetrician and gynecologist dedicated to promoting women's health. Dr. Lynk attended Northwestern University and Feinberg School of Medicine and completed her residency at Saint Joseph Hospital in Denver. She enjoys educating patients about their health concerns and helping them find the right plan for care. She loves OB/GYN because it allows her to be present for important events in her patients' lives. Outside of work, she enjoys spending time with her family, running, hiking, camping, and traveling.

Geology: Earthquakes, Volcanoes and Landslides

Natural Disaster Detectives

Dr. Prajukti Bhattacharyya, Professor of Geology, UW–Whitewater

What causes earthquakes, volcanoes, and landslides? In this session, you will learn the science behind these geological disasters, design earthquake-resistant buildings, experiment with shoreline erosion and landslides, model underwater lava flows, and more. Are you curious about a rock you have or the rocks in your backyard? Bring a rock sample and use sophisticated lab tools such as a microscope or powder X-ray Diffraction method to uncover its secrets!



Prajukti (Juk) Bhattacharyya is a Professor in the Department of Geography, Geology, and Environmental Science at UW–Whitewater. She received her Ph.D. from the University of Minnesota in 2000. Her background is in "hard rock geology" and geoscience education. She teaches courses on volcanoes, structural geology, rocks and minerals, plate tectonics, and environmental geology. Her research interests range from geochemical analyses of igneous and metamorphic rocks to volcanic activities. She is also involved in STEM education research.

Civil Engineering

Measure the Eiffel Tower with Surveying Tools

Emily Harrison, Project Manager, JT Engineering, Inc.

Explore the world of surveying and take your skills to new heights! In this workshop, you will use professional surveying equipment, including an Automatic Optical Level and a Survey Rod. With the measurements you record, you will solve survey equations to find the heights of several nearby objects. Once you understand surveying basics, you will use known elevations from Paris to answer the question: How tall is the Eiffel Tower?



Emily Harrison earned a Bachelor of Science in Civil Engineering from UW–Platteville. Emily works as a Project Manager at JT Engineering Inc., a civil engineering consulting firm that provides construction oversight services at the state, county, and local levels. She has worked in transportation construction oversight services for over ten years and has experience on large structure projects and high-volume, high-speed roadways. She is a member of AAUW, the Society of Women Engineers, and the American Society of Civil Engineers. She also mentors young people who want to pursue a career in engineering.

Physics

Sun-Powered Racers: A Solar Car Building Adventure

Gwen Sutter, Senior Analyst, Supply Chain, Alliant Energy

Heather Steuri, Technology Resiliency Manager, Alliant Energy

Traci Hohn, Lead Human Resource Business Partner, Alliant Energy

Are you ready to unleash your creativity and innovation by building your very own solar-powered car? Using kits, you'll learn about solar energy, circuit construction, and engineering mechanics. No experience is needed, and you will even get the chance to race your car against others! This hands-on activity not only teaches the principles of renewable energy but also empowers young minds to think critically and solve real-world problems.



Gwen Sutter is a senior analyst in the Supply Chain at Alliant Energy. She graduated from Clarke University in 2014 with a Bachelor of Science in Psychology and a minor in Business Administration. At Alliant, Gwen specializes in data analysis and report development to optimize supply chain processes. Outside of work, Gwen loves to explore new places, find those fun, less-known places to eat, and hit the trails for a good hike.



Heather Steuri is the Technology Resiliency Manager at Alliant Energy where she has worked for over 25 years. She is responsible for ensuring critical business systems and processes that rely on information technology services are available and minimize the amount of loss and disruption. Heather is a graduate of UW–Whitewater with a Bachelor of Business Administration degree in Office Systems and Master of Business Administration degree in Information Technology. When she is not working, she enjoys spending time with her husband and daughter, three cats, and being outdoors riding motorcycles and snowmobiles.



Traci Hohn is the Lead Human Resource Business Partner at Alliant Energy where she has worked for 20 years. She earned a Bachelor of Business Administration in Human Resources degree from UW–Whitewater. Traci is responsible for providing comprehensive human resource support from leading initiatives in employee and labor relations, workforce planning, talent and performance management, employee engagement, learning development, and diversity, equity, inclusion, and belonging. When she is not at work, she loves to spend time outdoors and with her husband, boys, and dogs.

Chemistry

Bath Bomb Chemistry

Hailey Hinze, Training Specialist–Therapeutics, SHINE Technologies

Here's your chance to apply engineering principles and acid-base chemistry to create the perfect recipe for super impressive bath bombs. Create bombs with varying proportions of acids, bases, and salts. Then conduct scientific experiments to discover how quickly the reactants create carbon dioxide (CO₂) in each sample. In the process, you'll discover the optimal mixture to create an ideal, long-lasting, fizzy bomb. You'll be able to use your recipe to make more bath bombs at home.



Hailey is an alumna from the University of Wisconsin–Whitewater where she earned a degree in Environmental Science with an emphasis in Biology. She has always had a passion for STEM and has used her degree and interests to explore a variety of science fields. Hailey is a Training Specialist at SHINE Technologies and loves her work there because she knows she is making an impact on the manufacture of cancer treatments and diagnostics. In her free time, she loves camping, biking, fishing, and spending time with her family.

Parent Sessions (choose 3)

What Are the Differences among Engineering Specialties?

Brittany Noe, Project Manager, IPEC

Civil, industrial, mechanical, biomedical, mining, electrical, aerospace...the list is long. Learn about the many and varied careers in engineering. What do professionals in these careers do? Where are the job opportunities? Ask questions and get suggestions for talking with your teen about engineering careers.



Brittany Noe graduated in 2012 with a degree in Biological Systems Engineering with an emphasis in Food and Bioprocess Engineering from UW–Madison. She has been a mechanical engineer at IPEC (Integrated Process Engineers & Constructors) for over ten years and is now a Project Manager. IPEC specializes in customized process systems for the food and pharmaceutical industry. While at the university, Brittany participated in the WISE Program (Women in Science & Engineering), and Engineers Without Borders.

The Potential of Artificial Intelligence: Opportunities and Challenges

Dr. Hairi, Assistant Professor, Computer Science, UW–Whitewater

Generative AI tools, such as ChatGPT, Gemini, and many more, have revolutionized many aspects of our lives, especially within the field of education. In this talk, I'll provide a brief overview of generative AI, demonstrate its capabilities, and discuss some of its limitations. Through live demonstrations, we'll explore the potential of these tools and consider their implications for students in grades 6-9 and beyond.



Dr. Hairi is a Professor of Computer Science at the UW–Whitewater. Before joining UW–Whitewater, he was a postdoctoral researcher at The Ohio State University. He earned his Ph.D. in Electrical Engineering from Arizona State University. His research interests are in the broad field of machine learning. At UW–Whitewater, he teaches courses in programming languages and machine learning. He lives in Cottage Grove and enjoys playing chess, basketball, and soccer.

Explore Careers in Health Care

Lisa Jensen, MBA, BSN, RN, Vice President of Nursing Services and Chief Nursing Officer, Fort HealthCare

In healthcare, the opportunities are endless. Learn about careers under the healthcare umbrella and how to find the career that fits one's aspirations and interests. What are the job duties? What type of experience or education is required? Ask questions and receive guidance on how to introduce your child to a career in healthcare.



Lisa earned a Bachelor of Science Nursing degree and a Master of Business Administration from Viterbo University in La Crosse. She has been a full-time staff nurse at Fort HealthCare and practiced as a Registered Nurse in the Medical Surgical & Pediatrics and Intensive Care Unit. In addition, she has served as infection prevention coordinator and Community Health & Wellness Manager. In January 2021, she advanced to the Vice President of Nursing / Chief Nursing Officer for Fort HealthCare. Lisa participates in numerous professional organizations including the Wisconsin Organization for Nurse Leaders and the Advisory Board for Madison Area Technical College.

Your Kid Could Save the Planet: Exploring Sustainability Careers

Cassandra Thiel, Assistant Professor, NYU Langone Health; CEO, Clinically Sustainable Consulting

No matter what you “believe” about climate change, it is happening. For society to survive and thrive, we need every sector to address consumption and overuse and move toward sustainability. For better or worse, this demand for change comes with a lot of career opportunities for young people. In this session, you will learn about “sustainability” and how is it being applied to various career fields, including my own in healthcare.



Dr. Cassie Thiel is an Assistant Professor at NYU Langone Health in the Departments of Population Health and Ophthalmology and owns Clinically Sustainable Consulting. She earned a Bachelor of Science in Civil Engineering at Michigan Technological University and a Ph.D. in Civil and Environmental Engineering from University of Pittsburgh. She lives in Middleton, Wisconsin, and loves gardening in the spring and watching cranes fly overhead in the fall. She also loves digging through medical trash!

The Future of IT Careers

Matthew Cheek, Innovation/Media Specialist, Johnson Creek School District,

Information technology impacts the world more and more every day. It is an ever-changing field that impacts everything from jobs and education to our day-to-day lives and even sports and our hobbies. Whether a student is interested in a career in software development, data analysis, software engineering, or artificial intelligence, the tech industry offers many opportunities that promise growth, challenge, and rewarding careers. Hear about exciting tech careers on the horizon and ask questions.



Matthew Cheek taught kindergarten in the Johnson Creek School District before becoming an Innovation/Media Specialist in 2018. He holds a Bachelor's degree in Elementary Education with a minor in Art Studio and a Master's degree in Professional Studies with an emphasis on Information, Technology, and Libraries. Matthew integrates education technology and Makerspace opportunities into library programming to foster creativity, critical thinking, and hands-on learning. Outside of work, Matthew is a proud husband and father of four daughters, ages 6 to 11, whose boundless curiosity and creativity continually fuel his passion for innovation and education.