

Rigorous - Educational - STEM Focused - Hands-on - Fun

Scholarship funds are available through gifts from several Carnegie Mellon alumni. Please see page 8 to learn more.

ANIMATIONS WITH THE WICK EDITOR, GRADES 5-7

9am - noon, September 29th

In this class students will learn how to use the Wick Editor to create 2-D digital animation. Students will have an opportunity to create digital illustrations and learn the basic principles of animation to bring their artwork to life! We'll be using the Wick Editor to create our animations and the skills learned in the class will be transferable to any animation software. No experience required!

Luca Damasco likes making things that help people make things. He has a background in Computer Science and Art, and focuses on developing accessible creative tools for artists and students. Luca has worked for Riot Games as a Technical Artist, contributed to The Processing Foundation's Python mode project, and co-created WickEditor.com. Currently, Luca is a Masters student in the Human-Computer Interaction Institute at Carnegie Mellon University.



ARTIFICIALLY INTELLIGENT CHATBOTS, GRADES 5-7

9am - noon, November 3rd

Want to learn how systems like Amazon Alexa and Google Assistant work? This hands-on workshop will give students a taste of the artificial intelligence side of robotics with simple speech recognition and basic natural language understanding. This workshop will feature a brand new, experimental full-size humanoid robot called the ASPIR (Autonomous Support and Positive Inspiration Robot), developed at your local friendly neighborhood robotics company, Choitek LLC. Students are expected to know how to use PowerPoint, the Internet, and other basic computer tasks. At the end, students will leave with a fully functional AI chatbot loaded onto a USB flash drive.

John Choi likes to introduce himself by saying he is a robot programmed with a singular mission: to effectively engage and inspire the next generation of STEM talent. Having graduated with a Bachelor's degree in Computer Science and Arts at Carnegie Mellon University in 2017, John has over 9 years of experience developing computer simulations using a variety of programming languages and 5 years of experience building robots at CMU. In 2016, as an Innovation Scholar from the Center for Innovation and Entrepreneurship at CMU, he founded an educational technology company called Choitek in Pittsburgh, PA, which specializes in building a variety of advanced robotics platforms designed to teach and inspire students with easy-to-use and accessible hardware. John also does a bit of research at CMU LTI's Articulab, an artificial intelligence research lab for social good. He has volunteered at the Carnegie Science Center, AssemblePGH, Carnegie Mellon's Leonard Gelfand Center, Project Ignite, Robotics Club, several middle and high schools, and was awarded the Gelfand Student Service Award in 2017. John is truly an artist, engineer, and entrepreneur all in one.



BUG-BOTS, GRADES K-2

9am - noon, October 20th

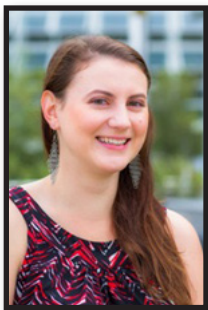
Bounce your way into the exciting world of robots by exploring motion, power, and electricity. Discover the way motors and batteries operate. Discuss robots and bugs and then create a robot, explain how it moves, and take the robot home to share with your family and friends! Parents are invited into the class at 11:45 for a Bug-Bot parade of all the class creations.

Jacob Churilla very excited to be teaching Bug-Bots this fall! Currently he is the Program Administrator for the Leonard Gelfand Center. In addition to being a musician, poet, and public speaker whose ambition is to lead others to reach their full potential, Jake previously worked with Bradford School where he traveled around the Tri-State area giving lectures to high school students. A graduate of Carnegie Mellon University (BFA Vocal Performance A'17), Jake has spent much time with the Leonard Gelfand Center and has fostered a passion for educating young STEM innovators!



BUILDINGS, TOWERS, AND BRIDGES: OH MY!, GRADES K-2 9am - noon, September 8th

How do buildings stay standing? Can you make a building out of paper that stands up? How strong should it be? In teams, students will create towers and bridges to see whose is the strongest. You will be able to understand the physics behind making structures stand up, compare and contrast bridges and skyscrapers, and learn how to design architecture.



Samantha Weaver graduated from Carnegie Mellon University with a Bachelor of Architecture and Master of Education Technology and Applied Learning Science, focused on K-12 design education, participatory design, and community development. As current director of CMU's Architecture Explorations outreach program, Samantha has expanded program offerings and tied lesson plans directly to current architecture trends and the expertise of local Pittsburgh architects. Samantha's goal is to provide an architectural foundation for children and youth; fostering appreciation of the built environment, encouraging creative expression and critical thought, and inspiring civic responsibility.

BUILDING UP!, GRADES 3-5 9am - noon, September 8th

From concept sketch to building, skyscrapers must be designed with geometry and physics in mind. Learn the math, science, and design behind skyscrapers. Work as a team and individually to add to Pittsburgh's skyline. How can a new skyscraper be inspired by geometry found in native Pittsburgh plants? Join us to find out!

Sujan Das Shrestha is currently a Master of Urban Design Candidate for 2019 at Carnegie Mellon University (CMU). Working as an architect in Nepal before leaving for the US, he taught undergraduate students of architecture and interior design in Kathmandu, Nepal for 3 years as well. He has been involved as an Outreach Instructor for CMU's Architecture Exploration Saturday Sequence program in Fall 2017 where high school and middle school students were introduced to concepts of urban design and architecture. He is currently working as a Data Visualization Research Assistant for the Remaking Cities Institute at CMU, looking into how 3D and Data visualization can aid better decision making and public engagement for urban planners and designers. Sujan graduated with a Bachelor of Architecture from Khwopa Engineering College, Bhaktapur, Nepal in 2013. Furthermore, building on his thesis, he has presented papers on a study into a possible urban regeneration and the perception of the residents for the reconstruction of a traditional historic neighborhood in the Kathmandu Valley after a devastating earthquake in 2015.



ENGINEERING 101, GRADES 5-7 9am - noon, September 8th

What is engineering and how do engineers design new systems and products? Engineering marvels are all around us, and are essential parts of our everyday lives. In this class we will explore the engineering design process and how engineers overcome challenges of mechanics, environment, and change. Students will face an engineering challenge, design and test a solution, and more importantly "redesign" to improve on the original idea. Students will see how fundamentals of math and science are used in the engineering design process as well.



Dr. Deanna H. Matthews is Associate Department Head for Undergraduate Affairs and Assistant Teaching Professor in Engineering and Public Policy (EPP), and Education Director and researcher in the Green Design Institute (GDI) at Carnegie Mellon University. In her role in EPP, Dr. Matthews oversees the undergraduate programs. In the GDI, an interdisciplinary research center that focuses on the intersection of environmental and economic issues, her research centers on the development and deployment of the Economic Input-Output Life Cycle Assessment tool, examining energy life cycles of new products, corporate environmental management, and educating general populations about energy-environment issues. As Education Director, she oversees education and outreach initiatives for the GDI. She is the coordinator and instructor of outreach programs to K-12 students and teachers in school settings and informal educational events. She received her B.S.E. in Civil Engineering from Duke University (1994) and her M.S. (1995) and Ph.D. (2001) in Civil and Environmental Engineering from Carnegie Mellon University.

ENGINEERING FOR SUSTAINABILITY: TINY HOUSES, GRADES 5-6

9am - noon, November 3rd

Have you been building things for as long as you can remember? Learn about civil engineering and architecture as we talk about 'tiny houses.' We will look at two different configurations of tiny houses: a rectangular shape and a geodesic dome. We will learn about sustainability and what makes a tiny house sustainable. Using math, we will talk about how the size of the rooms in a tiny house compares to your own home and how to live with less 'stuff!' You will build a model of a geodesic 'tiny house,' and we will talk about the geometry that gives a geodesic dome its structural strength.

Dr. Deborah Lange is an environmental engineer that has worked in academia as well as in small and large businesses. Currently, she is the Director of Special Environmental Project for the Steinbrenner Institute at Carnegie Mellon, where she has been for the last 17 years. She is a graduate of The Pennsylvania State University (BS, Civil Engineering) and Carnegie Mellon (MS and Ph.D., Civil and Environmental Engineering.) Deb is active in the Pittsburgh community as a Director on the Board of the Allegheny County Conservation District and is a past president of the Engineers' Society of Western Pennsylvania. She also enjoys 'STEM' outreach and is working with Propel Charter high schools as well as the Sarah Heinz House Boys and Girls club. Deb has 3 adult children: a medical doctor, an architect, and an environmental engineer. She enjoys tinkering at TechShop and international travel with her husband, including motorcycling adventures in Europe, Africa and Cuba.



ENVIRONMENTAL AWARENESS & SUSTAINABILITY, GRADES 4-6

9am - noon, October 20th

What does being environmentally sustainable mean? Can one person's everyday choices really make a difference? Students will explore different types of pollution, tackle current environmental issues, and investigate the positive and negative effects that humans have on the Earth. In-class demos will show how easily water can be polluted and how carbon dioxide emissions can heat up air in less than an hour! Join us as we brainstorm how anyone can take action and help make our planet a safer and healthier place to live.



Lydia Jahl is a 4th year Ph.D. student in the Department of Chemistry at Carnegie Mellon University (CMU). Her interest in atmospheric chemistry began while earning her Bachelors of Science in Chemistry at Harvey Mudd College. She is currently a member of the CMU Center for Atmospheric Particle Studies, where she studies how the emissions of wildfires affect different chemical and physical processes that happen in our atmosphere. Lydia hopes that this class will teach young students how their individual actions impact our planet and what we can all do to improve our environment.

GAMES WITH THE WICK EDITOR, GRADES 5-7

9am - noon, October 20th

In this class students will learn how to use the Wick Editor to create digital interactive games. Students will combine the basic principles of digital illustration, computer programming, and game design to create their very own interactive games! We'll be using the Wick Editor, a completely free tool for creating games and animations. This class is completely beginner friendly, with no experience required!

Zach Rispoli is a toolmaker, game developer and digital illustrator interested in the creation of digital artifacts and culture as a way of learning. He works to make creative processes such as animation and game creation more accessible through free and easy-to-learn tools. Zach is the co-creator of WickEditor.com along with Luca Damasco.



GENES YOU'RE ALWAYS WEARING, GRADES K-2

9am - noon, September 29th

Have you ever wondered what makes you...you? Explore DNA, genes, biology and heritability. Discover the reason behind your connected earlobes and widow's peak. Choose the genes to create your own creature and take your knowledge home to share with your family and friends!



Dr. Meredyth Wegener is a Visiting Teaching Professor at University of Pittsburgh in the Department of Neuroscience She earned her B.A. in Neuroscience from University of Virginia and her Doctorate in Neuroscience from University of Pittsburgh. She completed her dissertation after conducting research in adolescence and reward learning using awake-behaving electrophysiology in the laboratory of Dr. Bitu Moghaddam. Meredyth joined the Carnegie Mellon community through the Center for the Neural Basis of Cognition, and became involved with Gelfand Outreach and Creative Technology Nights or "TechNights", which specializes in introducing middle-school girls to STEM topics, in Fall 2017.

HOW ENZYMES WORK, GRADES 7-9

9:15am - 12:15pm, September 29th

You've heard about lactose intolerance, but have you ever wondered what is missing in the body to cause it? What is the "magic" ingredient in our body to help us digest food and to sustain life? This ingredient is called an enzyme. Come and join us in this introductory course to explore what are enzymes, how enzymes work, what affects enzyme activities, and how we can use this knowledge to improve our daily life, fight disease, and even power our planet in the near future. The scientific principles introduced in this course will also be put into action in the hands-on activities. In these activities, you will experience the conversion of hydrogen peroxide (H_2O_2), a corrosive and harmful chemical, to oxygen (O_2) by catalase; the development of the brown color on an apple or potato when cut open by catecholase; and the disappearance of egg white in a test tube by pepsin. You will also learn the cutting edge experimental tools used to understand enzyme functions. This class will be offered in an actual chemistry lab: students must wear closed-toed shoes and follow the safety rules in the lab. Lab coats and goggles will be provided.

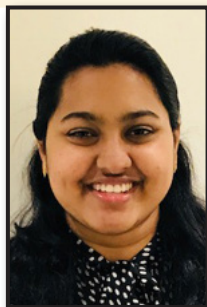
Dr. Yisong Guo is an Assistant Professor in the Chemistry Department at Carnegie Mellon University (CMU). Dr. Guo received his B.S. in Material Science and Engineering from Fudan University in China, and Ph.D. in Applied Sciences from University of California-Davis. His research group at CMU is working on an interdisciplinary field where efforts from biochemists, synthetic chemists, physicists, and spectroscopists are joined together to understand the mechanisms of chemical transformations catalyzed by enzymes. The chemical principles discovered through his research will help improve the technologies needed to make the transition to a sustainable energy future and enrich scientific knowledge in fighting disease.



LIQUID SCIENCE, GRADES K-2

9am - noon, November 3rd

Normal liquids can do crazy things when you look at them in the right way. Did you ever think you could watch them crawl on top of or below other liquids? Float objects and sink them upon command! Come and perform experiments with acids and bases and discover a magic pitcher that changes between a pink and clear solution in a matter of seconds. As you try out these tricks, learn about cohesion and adhesion in liquids. You've never seen liquids this crazy!



Ritu Treisa Philip is currently a master's student in the Energy Science Technology and Policy program at CMU. She earned her B.Tech degree in Chemical Engineering from Anna University, India. Her research interests are focused on materials that are used in energy generation and storage. Prior to her course at CMU, she combined her passion for music and teaching while volunteering with the Teach for India fellowship program as a music teacher for children from underprivileged backgrounds. She continued to pursue her passion for teaching while working at the Gelfand Center over the summer as an office assistant and a part-time TA in the Gelfand Outreach summer program.

MARVELOUS MACROMOLECULES, GRADES 3-5

9am - noon, October 20th

The existence of life is dependent upon nature's ability to manufacture very large, complicated molecules such as DNA and proteins. The ability of chemists to prepare really big molecules called polymers in the laboratory has revolutionized the manner in which we live. In this workshop, students will explore a variety of polymers, their usefulness, and how to make them in a manner which demonstrates care for the environment. This hands-on workshop will have students working in the lab and participating in lecture demonstrations to explore the amazing world of polymer chemistry.

Dr. Gizelle A. Sherwood is currently an Assistant teaching Professor at Carnegie Mellon University. She earned her Ph.D. in 2008 where her research focused on the effects of aggregation on the photo-physics of oligomers related to MEH-PPV and CN-PPV. She primarily lectures Quantitative chemical Analysis laboratories to the sophomore chemical engineering, biology, and pre-med students. She is also involved in several outreach programs working with both the Boy Scouts of America and the Leonard Gelfand Center.



NANOENGINEERING WITH DNA, GRADES 4-6

9am - noon, September 8th

Did you know that DNA can be used to make tiny nanostructures and nanomachines? Engineers can design structures that are 1/1000th the width of a single hair and these structures will build themselves under the proper conditions. Professor Taylor will introduce students to structural DNA nanotechnology. Students will physically interact with both the chemical structure and mechanics of DNA, acting like nanomanufacturing engineers who treat DNA as an engineering material. They will build DNA double helix models from pasta and then as the focus of the class they will build scale DNA origami models of double helical rafts and nanotubes using pipe cladding and lasercut wooden connectors (using a kit designed by the Taylor lab students).



Rebecca Taylor is an Assistant Professor in Mechanical Engineering at Carnegie Mellon University (CMU). She also holds courtesy appointments in the Biomedical Engineering department and in Electrical and Computer Engineering (ECE) at CMU. Prof. Taylor received her B.S.E. in Mechanical Engineering from Princeton University and her M.S. and Ph.D. in Mechanical Engineering from Stanford University. During her doctoral research she worked with Professor Beth Pruitt developing microscale force sensors for studying the mechanics of stem-cell derived heart muscle cells. She was subsequently a postdoctoral fellow in Biochemistry at the Stanford University School of Medicine, working under the supervision of Professor James Spudich. She is the director of the Microsystems and Mechanobiology Lab and her research team uses micro- and nanoscale structures as sensors and actuators for investigating the mechanics of cellular and molecular biosystems.

PERCEIVING THE WORLD THROUGH ROBOT SENSORS, GRADES 4-6

9am - noon, October 20th

Which household chore would you like a robot to do for you? What does the robot need to know about its surroundings to perform that chore? We will explore different sensors and discover the various types of information that they provide. Learn about how robot sensors mimic human sensing capabilities and sometimes exceed them! Build a sensor-actuator loop that reacts to its environment. Learn how machine learning is making it easier for robots to perceive the world around them.

Dr. Oliver Kroemer is an assistant professor at the Carnegie Mellon University Robotics Institute. His research interests are in machine learning and robotics, with a focus on learning for grasping and manipulation. Before joining CMU, Oliver was a postdoctoral researcher at the University of Southern California. He received his Masters and Bachelor's degrees in engineering from the University of Cambridge in 2008, and he defended his Ph.D. thesis at the Technische Universitaet Darmstadt in 2014.



STOCK MARKET, GRADES 3-5

9am - noon, September 29th

What are stocks? How do people make decisions about buying stocks? See what it's like to be a stock trader by participating in a stock market simulation. Buy stocks, pay commissions, and trade stocks with your friends. We have a challenge for you: can you invest some "money" and turn it into a whole lot more? Play our game and find out!



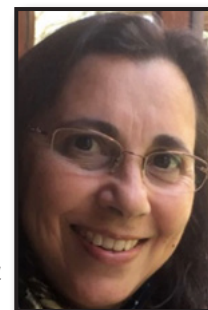
Dr. Carla Bevins is an Assistant Teaching Professor of Business Communications in the Tepper School of Business at Carnegie Mellon University (CMU). Prior to joining the CMU faculty, Dr. Bevins taught in the School of Information Sciences at the University of Kentucky (UK) and as a Visiting Educational Scholar at Qingdao Technological University. She also served as a Faculty Fellow with the Center for the Enhancement of Learning and Teaching at UK. She earned her B.A. in English and Creative Writing with a concentration in Public Relations from Butler University and her Ph.D. in Communications from UK. She holds Graduate Certificates from the UK in Health Communications, Medical Behavioral Sciences, Statistics, and Distance Education. Her dissertation work focused on translating and implementing a Continuing Medical Education program from a First-World to a Third-World setting in Kenya. At CMU, Dr. Bevins mentors undergraduate and MBA students and teaches Business Communications, Business Presentations, and Interpersonal Managerial Communication.

TINY HARD WORKING GUYS, GRADES K-2

9am - noon, September 8th

This workshop will show the students how microscopic organisms can do a fantastic and effective job transforming certain chemical compounds into gases among other things. We will use the Baker's yeast to produce CO₂ and O₂. The first is produced by making the yeast eat sugar and the second by attacking the yeasts with hydrogen peroxide. Gases are invisible but we will find ways to demonstrate how they are formed. Our hands-on experiments will involve feeding sugar to the yeasts, preparing fluffy dough, and making a foamy mess with soap water. It will be a lot of fun!

Dr. Gloria Silva is an Assistant Teaching Professor in the Chemistry Department at Carnegie Mellon University (CMU). Gloria received her B.S. in Organic Chemistry and Pharmacist degrees from the National University of Cordoba (UNC), Argentina. At UNC she was an Assistant Professor with tenure and a Researcher of the Argentinean Research Council. She performed research in Bioactive Natural Products from plants. Gloria and her family moved to Pittsburgh in 2002 and she has been at CMU since. She was involved in research in the field of Bioorganic Chemistry and has been teaching undergraduate and graduate courses since 2008. Her courses have a main focus on Organic Chemistry and courses that teach concepts at the interface between Biology and Chemistry including a course on Food Science.



USE YOUR NOGGIN:LEARN THE BRAIN, GRADES 3-4

9am - noon, September 29th

Come explore your brain and senses. In this workshop we will have hands-on demonstrations allowing you to explore your amazing brain in action and see some surprising ways in which your senses get things right and other ways that your senses can be fooled. We will also get to look inside a brain by seeing a pre-dissected real sheep's brain so you can see the ways that your brain is similar to and different from another animal's brain in its structure. You also will get to make a brain and a neuron craft to take home and use to explore more about how your brain and its parts work.



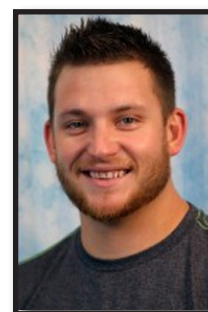
Dr. DJ Brasier is an Assistant Teaching Professor of Biological Sciences specializing in neurobiology. He was trained in brain physiology and genetics at University of California San Diego and UC San Francisco. He has been teaching neuroscience at CMU since 2012 and involved in community outreach for many years.

WEARABLE COMPUTERS, GRADES 7-9

9am - noon, November 3rd

Bracelets that buzz, scarves that sense, ties that talk, blouses that blink— it's all part of wearable engineering! Students will learn about the rapidly developing field of wearable technology, and will design their own conductive fabrics and simple-to-program electronics. They'll also learn how humans and computers interact to form wearable technology, also known as "soft robotics". This class will inform and excite students about this electrifying subfield of mechanical engineering in our constantly upgrading world.

Eric Markvicka is working at a Pittsburgh area start up and is currently a visiting researcher at CMU. He recently received his M.S. and Ph.D. degrees in robotics from CMU where he was working with Prof. Carmel Majidi to explore a new class of robust, multifunctional wearable electronics for biomonitoring. Eric received his B.S. and M.S. degrees in mechanical engineering from the University of Nebraska-Lincoln where he worked with Prof. Shane Farritor to develop fully insertable surgical robots for minimally invasive abdominal surgery. Eric was a visiting research at the Air Force Research Laboratory, NASA Jet Propulsion Laboratory, NASA Johnson Space Center, and Honeybee Robotics. He is a recipient of graduate research fellowship awards from the National Science Foundation (NSF) and the Center for Machine Learning and Health (CMLH) at CMU.



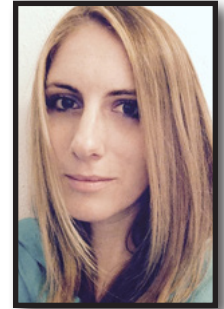
Dr. Carmel Majidi came to Carnegie Mellon University in 2011 and is an Associate Professor of Mechanical Engineering. Prior to joining the faculty, he was a postdoctoral fellow in the Harvard Microrobotics Laboratory (2009- 2011) and the Princeton Institute for the Science and Technology of Materials (2007-2009). His experience in solid mechanics and microfabrication is the foundation of his current research in the emerging fields of soft robotics and active multifunctional materials.

WRITE-ON SCIENCE, GRADES 3-4

9am - noon, November 3rd

Discover Bioluminescence, Light Emitting Diodes (LEDs) and Poetry! Everyone loves fireflies that light up at night, but did you know lots of different animals glow and light up, including fish, mollusks, bacteria, and mushrooms? Learn how these animals and fungi use their lights for good and for hunger! And they're not the only ones who benefit from bodies that light-up. Discover how scientists are using bioluminescence to help solve problems in our world. Bioluminescent trees instead of street lights? Glow-in-the-dark exit signs? It could happen! Adventure into uncharted territory as you create your own bioluminescent creature using LEDs and solar pigment, and write on science in the form of an ode poem to your favorite glowing creature.

Christa Romanosky holds an MFA from the University of Virginia, and bachelor's degrees in psychology and creative writing from Carnegie Mellon University. She is a 2017-2018 Provincetown Fine Arts Work Center fellow, and a 2018 James Merrill House Writer-in-Residence. She has been teaching STEM classes through Gelfand Outreach since 2014, and has been an educator in the arts for over ten years.



YOU ARE WHAT YOU EAT, GRADES K-2

9am - noon, September 29th

Ever wonder what happens to an apple after you eat it? From bite to breakdown we will track its path. You will discover how food is processed and how we get energy from the nutrients. You will also create a model of the digestive system to take home to savor your experience. Can't you just taste the fun?



Dr. Rosalyn Abbott is an Assistant Professor in Biomedical Engineering at Carnegie Mellon University (CMU). Prof. Abbott received her B.S. and M.S. degrees in Biomedical Engineering from Rensselaer Polytechnic Institute and her Ph.D. degree in Bioengineering from the University of Vermont. She was subsequently a postdoctoral fellow in the Biomedical Engineering Department at Tufts University working under the supervision of Professor David Kaplan, where she developed adipose and skin tissue engineered models. Her lab at CMU focuses on using tissue engineering to study metabolic regulation during the complex transition of obesity to insulin resistant type II diabetes.

YOUR BRAIN'S SENSORY WORLD, GRADES K-2

9am - noon, November 3rd

What you feel is based on the sensory input we receive from the world around us, which we experience through our eyes, ears, skin, nose, and tongue. In this course, students will explore these sensory organs and how they transform light, sound, and chemicals into your favorite food or song. We will model the specialized cells in your eyes, make simulation snot, map our tongues, compare the sensitivity of our fingertips to our toes, and why smells reach us from across the room. We will deepen their understanding of, and their appreciation for, the most complex organ in the body—the brain.

Dr. Meredyth Wegener is the instructor for this class. Please see her biography on page 3.

PARENT SESSION: HOW TO SURVIVE A SCIENCE FAIR PROJECT

Cost \$15, 9:30am - 11:30am, September 8th



Participating in a science fair is a great way for young people to experience the thrills and challenge of “doing” science. Student participants learn first-hand about the scientific method and they get involved in an in-depth investigation that will challenge their creativity and persistence. It may be difficult for an elementary or middle school teacher to dedicate enough time to help individual students prepare their projects, so it is important for parents to be informed about science fairs. Discuss topics such as: How do you pick a good project? What science fairs are available to students in the Pittsburgh area? How do you sign up for them, and what are the expectations for students? Our presenters are Dr. Conrad Zapanta, Associate Department Head of Biomedical Engineering, Carnegie Mellon, and Dr. Laura Zapanta, Lecturer in Biological Sciences, University of Pittsburgh. Both presenters have experienced science fairs from the perspective of a judge, an organizer and a parent.



Gelfand Outreach Fall 2018 Saturday Series Classes

Classes are \$55.00 each and are conducted from 9:00am to noon unless otherwise noted, at Carnegie Mellon University.*

September 8th

Tiny Hard Working Guys, Gr. K-2
Buildings, Towers, and Bridges: Oh My! Gr. K-2
Building Up! Gr.3-5
Nanoengineering with DNA, Gr. 4-6
Engineering 101, Gr. 5-7
How To Survive a Science Fair Project*-- Parent session

September 29th

You Are What You Eat, Gr. K-2
Genes You're Always Wearing Gr. K-2
Use Your Noggin: Learn the Brain, Gr. 3-4
Stock Market, Gr. 3-5
Animations with the Wick Editor, Gr.5-7
How Enzymes Work**, Gr.7-9

October 20th

Bug-bots, Gr. K-2
Marvelous Macromolecules, Gr. 3-5
Perceiving the World through Robot Sensors Gr. 4-6
Environmental Awareness & Sustainability, Gr. 4-6
Games with the Wick Editor, Gr. 5-7

November 3rd

Liquid Science, Gr. K-2
Your Brain's Sensory World, Gr. K-2
Write-On Science, Gr. 3-4
Engineering for Sustainability: Tiny Houses, Gr. 5-6
Artificially Intelligent Chatbots, Gr. 5-7
Wearable Computers, Gr. 7-9

To apply for scholarship funds, please submit a copy of the first page of your IRS 1040 tax form from 2017.

**Parent Session is \$15 per family.*

***Class is at the Mellon Institute, on Bellefield Avenue, in Oakland, 9:15am - 12:15pm*