girls in Science & boys Science Exploration Camp

Program Schedule

SATURDAY, JUNE 21

GIRLS	BOYS	
10:15 a.m.- 12 p.m.	10:40 a.m.- 12:25 p.m.	Arrival, Registration & Check-in
12-12:20 p.m.	12:25-12:40 p.m.	Welcome & Orientation
12:30-2:40 p.m.	12:45-2:50 p.m.	Workshops I
3-5 p.m.	3-5 p.m.	Workshops II
5:10-6:10 p.m.	5:15-6:15 p.m.	Dinner
6:10-9 p.m.	6:15-9 p.m.	Recreational Activities
9:15-10 p.m.	9:15-10 p.m.	Quiet Time
10 p.m.	10 p.m.	Lights Out

SUNDAY, JUNE 22

GIRLS	BOYS	
7:30-8:15 a.m.	7:30-8:15 a.m.	Breakfast
8:15-9 a.m.	8:15-9 a.m.	Clean Rooms & Pack
9:15-11:15 a.m.	9:30-11:30 a.m.	Workshops III – Girls Feature Presentation: Physics in Action – Boys
11:20-11:55 a.m.	11:30 a.m. – noon	Lunch
12-2 p.m.	12:15-2:15 p.m.	Feature Presentation: Physics in Action – Girls Workshops III – Boys
2-2:20 p.m.	2:15-2:30 p.m.	Program Evaluation & Depart

General Information

Participants are assigned three workshops, two on Saturday and one on Sunday, based on their workshop rankings. Workshop assignments are on a first-come, first-serve basis. We try our best to assign each student one of their top choices, but class size limitations do not always make this possible. Participants stay overnight in the residence hall and participate in evening activities. **Girls and boys have separate residence halls.**

- Early Bird Fee on/before 4/7/14: $169
- Fee after 4/7/14: $179

Registration includes one night's lodging in residence hall, Saturday dinner, Sunday breakfast and lunch, program materials and tote bag.

To Register: www.uwlax.edu/conted/youth

University of Wisconsin-La Crosse
1725 State St. | La Crosse, WI 54601 USA

www.uwlax.edu/conted/youth

This program is not supported by this school district.

girls in Science & boys Science Exploration Camp encourages interests in science and math by giving participants hands-on learning and activities in an environment that is supportive, enriching and – most importantly – fun! The girls and boys work with UW-La Crosse faculty who encourage experimentation, investigation and involvement in the fields of math and science.

In addition to the activities, the youth experience a college campus, an overnight stay in a residence hall, campus meals, and social activities with peer students, university student assistants and faculty.

The Girls in Science and Boys Science Exploration Camp runs concurrently but are **separate** programs.

UNIVERSITY OF WISCONSIN-LA CROSSE

girls in Science

Girls entering grades 6-8

& boys Science Exploration Camp

Boys entering grades 6-8

June 21-22, 2014

- Hands-on experiments
- Your choice of nine workshops
- Taught by university faculty
- Full campus experience with overnight stay

Special thanks to:

Mississippi Valley Gifted and Talented Network

UW-LA CROSSE College of Science and Health

wcaty
Wisconsin Center for Academically Talented Youth

GIRLS

Workshop I - Saturday
Mathematics in Graphs
Movie Production through Computer Programming
Zombies & Math

Workshop II - Saturday
Crime Scene Investigation
Road Kill Café
Mrs. Jones's Kidney Problem

Workshop III - Sunday
Light Bright!
Lovely Lips Laboratory
Simulating Rover Missions on Mars

BOYS

Workshop I – Saturday
Crime Scene Investigation
Road Kill Café
Mrs. Jones's Kidney Problem

Workshop II – Saturday
Mathematics in Graphs
Movie Production through Computer Programming!
Zombies & Math

Workshop III – Sunday
Shards of the Past: Experimental Archaeology
Simulating Rover Missions on Mars
When Light and Matter Collide

Program Descriptions

Physics in Action! B G
Feature Presentation

See a physicist lie on a bed of nails, kids standing on light bulbs without breaking them, a ping-pong ball shot through an empty can, a magnet taking a minute to fall to the ground, a lightbulb glowing without wires, and a racquetball that shatters when thrown against the wall. Learn how rockets work, why ice skaters can spin so fast, and why bicycles are easier to ride fast than slow.

— Seth King, Ph.D., Physics

Light Bright! G

Explore the science of light and color by making a colorful butterfly using black ink, wearing special rainbow-vision glasses, bending a pencil, and building your very own kaleidoscope! Learn about how animals see and why our eyes can sometimes play tricks on us.

— Jennifer Docktor, Ph.D., Physics
— Megan Litster, Ph.D., Biology

Crime Scene Investigation: The Case of Jason Worth B G

A missing heir, Jason Worth, comes from a world of money, power and mystery. Discover who kidnapped Jason Worth by analyzing blood samples, finger prints and other evidence to solve the crime.

— Faye Ellis, M.S, Biology

Hunter's Road Kill Café B G

Hunter and his family run the Road Kill Café and they're not feeling that great today. They have been eating too much meat from their menu. What has caused their aches and pains? Was it the squirrel soup, the skunk hot dog, or the deer ice cream? Given their ailments, it will be your job to discover the cause and learn how microbiology can be used to prevent similar illnesses in the future.

— Andrea Peirce, Ph.D., Microbiology

Lovely Lips Laboratory G

Ever wonder what goes into making a little tub of lip gloss? In the Lovely Lips Laboratory learn about the properties of the ingredients that go into making lip gloss. Create and combine ingredients to make a personalized lip gloss formulation!

— Nadia Carmosini, Ph.D., Chemistry

Mathematics in Graphs – It's Cool! B G

Problem 1: You are trying to organize a pool party with all of your friends. Your parents want you to get some extra exercise, so instead of calling friends, you need to bike to each friends home. This requires you to bike on every street in your neighborhood. Can you find the optimal route such that you will bike over the same streets as little as possible so you can get back to the starting point and get started on the swimming party sooner?
Problem 2: Your family is taking a summer road trip to several national parks and then returning home. Can you help design a shortest route so you can see all the parks on the plan while still saving you loads of time stuck in the back seat? The above problems look similar but they are different. How can we solve them using graphs? Let's discover some math in graphs!

— Huiya Yan, Ph.D., Mathematics

Movie Production through Computer Programming B G

Learn the basics of computer programming by writing, directing and filming a movie script. Construct a virtual 3D world involving dancing figure skaters, singing frogs and polar penguins. Using programming script, direct and record a movie using a virtual camera.

— Brad Shutters, Ph.D., Computer Science

Boys Science Exploration B Girls in Science G

Mrs. Jones's Kidney Problem B G

Mrs. Jones lives with her family in Wales, a country on the Isle of Great Britain in the United Kingdom. She has diabetes, a condition that is very hard on the kidneys. Sadly, her kidney damage has put Mrs. Jones on the kidney transplant waiting list, along with over 6,000 other people in the U.K. We need to find someone who can donate a kidney that will be a good match for Mrs. Jones. Learn how kidneys are donated, what it means for a donor kidney to be a good match, and why we are more likely to find the best match among family members. Together we will test Mrs. Jones's family members in search of the best possible life-saving kidney donor.

— Marisa Barbknecht, M.S., Microbiology

Shards of the Past: Experimental Archaeology B

Stones, bones, potsherds: these are often all that archaeologists have to reconstruct past lifeways. Using Artifacts recording 12,000 years of Wisconsin prehistory, and experiments in stone tool manufacture and pottery making we'll explore how ancient peoples lived and adapted, and how archaeologists can reconstruct the past.

— Connie Arzigian, Ph.D., Archaeology

Simulating Rover Missions on Mars with Lego Mindstorms B G

As a junior member of NASA, you are used to tackling tough problems. The first manned mission to Mars has gone well, but the harsh atmosphere of the Red Planet makes it necessary to use rovers for gathering and transporting resources, supplies, and people. These robots require continual modification and reprogramming. Without dedicated robotics engineers, such as yourself, the mission is doomed to fail. Students will work in small groups to create rovers using Lego Mindstorms EV3 robotics kits. These rovers will need to overcome obstacles that simulate the kinds of challenges that may be encountered by astronauts on Mars. Using a blend of engineering and mathematics, students will work collaboratively to build and program rovers. We will end the session by testing out each group's rover in a small obstacle course.

— Josh Hertel, Ph.D., Mathematics/Engineering

When Light and Matter Collide, There's Chemistry! B

From the colors we see in a rainbow to glow-in-the-dark toys, light-matter interactions are the source of these phenomena. We will investigate what matter is and how light can be reflected, absorbed and even emitted from matter. An investigation of some common household items with unusual light-matter interactions will be investigated.

— Kendric Nelson, Ph.D., Chemistry

Zombies & Math: Will the Zombies Win? B G

Have you ever wondered if zombies will actually take over the human race? In this workshop, we will discover how we can use mathematics to predict if a zombie apocalypse is eminent. We will also conduct some "experiments" to see if our mathematical predictions are close to real life.

— Robert F. Allen, Ph.D., Mathematics

Residence Halls and Supervision

UW-La Crosse undergraduates serve as counselors and are responsible for the supervision of the participants outside class time. They develop a spirited atmosphere, lead them in activities, and ensure adherence to safety rules and other regulations. Additionally, all residence halls have adult residence assistants trained as counselors. The student-to-counselor ratio is approximately 10:1. Participants need to bring all personal items. Sheets, blanket, pillow and pillowcase are provided. Residence halls feature TV's, room refrigerators, lounges and game rooms.

Insurance

Participants are encouraged to have their own health insurance as limited accident insurance is provided by UW-La Crosse.

Registration Deadlines & Cancellation

Registrations are accepted until June 6, 2014, or until enrollment is reached. Full refunds will be given (less $25 processing fee) if cancellations are made in writing prior to May 21, 2014.

Scholarships

Scholarships are available for financially disadvantaged students. Funds will be awarded on a first-come, first-serve basis. Scholarship applications will be accepted through April 18 or until scholarship funds have been depleted. A required payment of at least 15% is due at time of registration.

To Register: www.uwlax.edu/conted/youth
Questions: 608.785.6504