

Girls in Science

Would you like to participate in scientific experiments, learn through hands-on activities and find out about a variety of scientific fields?

Girls in Science is meant to encourage science and mathematics for middle school girls, a time when many girls drop out of such programs. Girls who participate in this program work with UW-La Crosse faculty, many of whom are women. The goals of this program are to offer intensive academic exploration, provide students with the opportunity to work with other young women of similar abilities and interests, and create an environment in which no one feels the need to hide their talent. In addition to the science activities, the students are provided a full campus experience with an overnight stay in a campus residence hall, meals on campus and social activities with peer students, university student assistants and faculty.

Non-Profit Org.
U.S. Postage
PAID
La Crosse, Wis.
Permit No. 545



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

UW-La Crosse is an affirmative action/equal opportunity employer and is in compliance with Title IX and Section 504.

This publication was not produced at taxpayer expense.

www.uwlax.edu/conted

Girls in Science

Girls Entering Grades 6-8
June 27-28, 2009

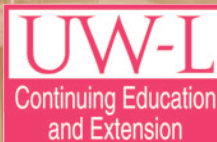


*"I love it!
It makes me
want to be
more involved
in science
class."*

- Past participant

Register Early!

University of Wisconsin-La Crosse
College of Science and Health



wcaty
Wisconsin Center for Academically Talented Youth

Girls in Science GENERAL INFORMATION

You will be assigned three workshops, two on Saturday and one on Sunday afternoon, based on your ranking of class choices. Workshop assignments are made on a first-come, first-serve basis. We try our best to assign each student one of her top choices, but class size limitations do not always make this possible.

- \$160 registration fee includes one night lodging in residence hall, Saturday dinner, Sunday breakfast and lunch, program materials and tote bag.
- Girls are expected to stay overnight in the residence hall and participate in evening activities.
- Parent Lodging Information: Contact the La Crosse Area Convention and Visitors Bureau at 1.800.658.9424 or www.explorelacrosse.com for lodging information.

Eligibility: Girls entering grades 6-8, who have participated in the Midwest Talent Search for Young Students or Midwest Talent Search are eligible to participate. If you have not participated in the Midwest Talent Search, you may still register by submitting a letter of recommendation from your gifted and talented coordinator or your math or science teacher, along with your grade report.

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 17 or until scholarship funds have been depleted. A minimum payment of 15% is due at time of registration.

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

Registration Deadlines & Cancellation: Registrations will be accepted up to two weeks prior to the beginning of the program or until enrollment is reached. Full refunds will be given (less \$25 processing fee) if cancellations are made in writing prior to May 29, 2009.

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

Questions: For questions or additional information contact 608.785.6508 or languard.kare@uwlax.edu.

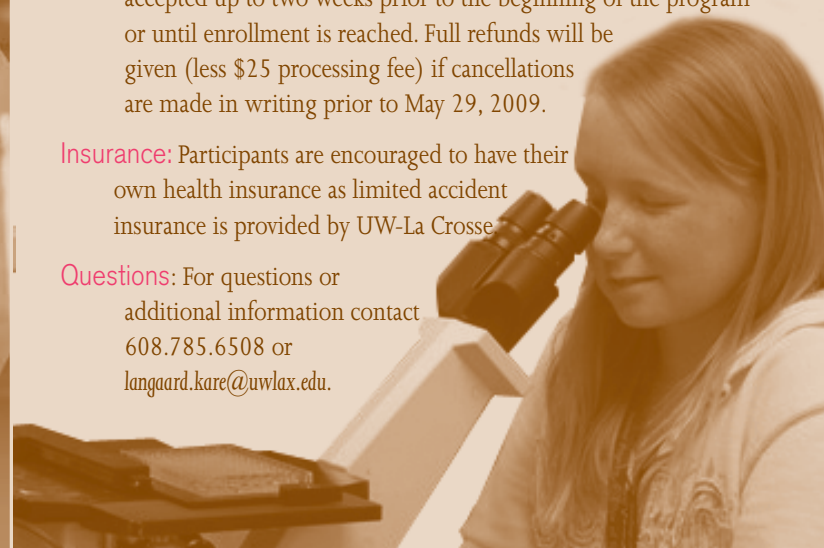
Girls in Science PROGRAM SCHEDULE

Saturday, June 27

10:15 a.m. – 12:15 p.m.	Arrival, registration, and check-in — Residence Hall
12:30 – 12:45 p.m.	Welcome and orientation — Cowley Hall, Room 100
12:45 p.m.	Parents Depart
1 – 3 p.m.	WORKSHOP I Art and Music . . . and Math! Crime Scene Investigation: The Case of Jason Worth Got Milk? Movie Production through Computer Programming Shards of the Past: Experimental Archaeology The Wonderful World of Plankton
3:15 – 5:15 p.m.	WORKSHOP II Art and Music . . . and Math! Crime Scene Investigation: The Case of Jason Worth Rockets Shards of the Past: Experimental Archaeology The Wonderful World of Plankton Will It Float?
5:20 – 6 p.m.	Dinner – The Cellar
6 – 9 p.m.	Recreational Activities
9 p.m.	Snack
9:15 – 9:45 p.m.	Quiet time and preparation for bed
10 p.m.	Lights out

Sunday, June 28

7:30 – 8:15 a.m.	Breakfast – Basement of Residence Hall
8:15 – 9 a.m.	Clean rooms and pack – Leave packed belongings in your room
9 a.m.	Return to Cowley Hall, Room 100
9:15 – 10:45 a.m.	CHEMISTRY PRESENTATION: "Hydrogen–The Science behind the BOOM!" Professor Mike Zach, Dept. of Chemistry, UW-Stevens Point
10:50 – 11:50 a.m.	Lunch – Room #103 and #111 Cowley Hall After lunch separate into afternoon workshop classes
12 – 2 p.m.	WORKSHOP III Catch a Flying Car Food is Fuel and Munch, Munch More Mrs. Jones's Kidney Problem The Universe in Invisible Light Waterworks You GO Girl!
1:45 p.m.	Parents arrive at Cowley Hall
2:15 p.m.	Program evaluation and meet parents in Cowley Hall, Room 100 Return to Residence Hall – Pick up belongings and return keys.



Girls in Science

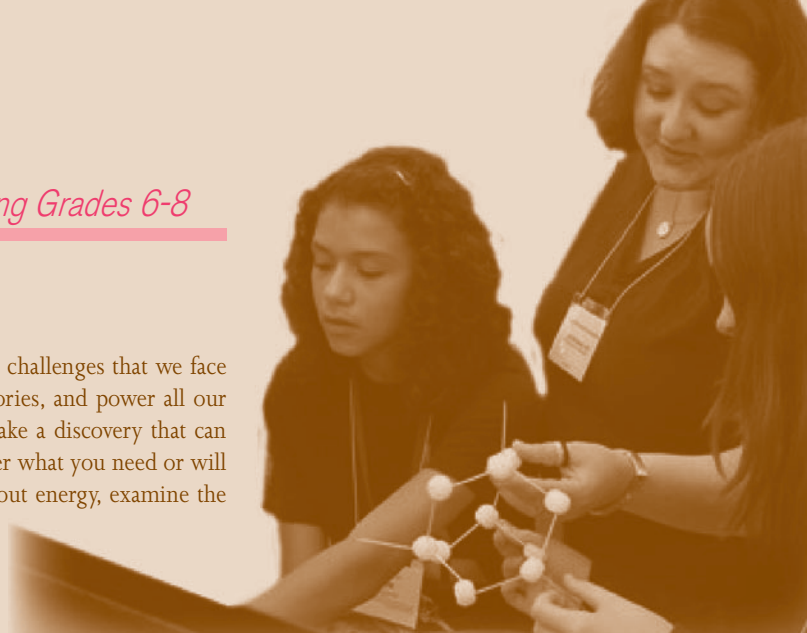
Girls Entering Grades 6-8

Sunday Morning All-Program Workshop:

Hydrogen—The Science behind the BOOM!

Energy, our very lives depend upon it. Yet what is energy? One of the biggest challenges that we face is how to get enough energy to heat our homes, run our cars, fuel our factories, and power all our fun electronic toys. How can you make a difference? What does it take to make a discovery that can help society? Will you sit on the sidelines and wait for someone else to discover what you need or will you invent something yourself? Let's explore some of the facts and myths about energy, examine the science behind hydrogen, take a millisecond to ponder the boom (I mean a big BOOM!) and think about where your interest in science can take you.

Mike Zach, Ph.D., Department of Chemistry, UW-Stevens Point



PROGRAM DESCRIPTIONS:

Art and Music . . . and Math!

There are many ways to explore music and visual arts from a mathematical point of view. For example, proportions can be used to discover the notes in a musical scale and angles can be used to help create depth in two-dimensional drawings. You will learn about these and more. You will also experience the fun of turning the tables and using mathematical ideas, like geometry and randomness, as the subject matter for art.

Karl Kattchee, Ph.D. Mathematics

Catch a Flying Car

A car is flying off a cliff. Where will it land? OK, for safety reasons we will use Hot Wheel® cars. Using mathematics to model what is happening, we will be able to predict where they land and catch the cars. Also have you ever wondered how the U.S. Forestry Service measures the heights of trees? Obviously they don't want to cut them down, but they are a bit difficult to climb. We will construct a tool similar to what the Forestry Service uses and then use it to measure trees and other tall objects on campus. The process is all about math!

Susan Kelly, Ph.D., Mathematics

Crime Scene Investigation:

The Case of Jason Worth

A missing heir. Money, power and mystery. Student sleuths will use the same tests that a forensic scientist would use to discover who kidnapped Jason Worth by analyzing blood samples, finger prints and other evidence to solve the crime.

Faye Ellis, M.S., Biology

Food is Fuel and Munch, Munch, More

Our bodies are like engines that use fuel to do work. Just like the gas we put in our cars, the food we eat is fuel for our bodies. Food also contains many chemicals and chemical properties that can be exploited to improve taste, texture and nutrition. We will investigate the science of food with some yummy (and not-so-yummy) experiments and explore ways to optimize your engine's fuel efficiency!

Peg Maher, Ph.D., R.D. Biology and Nutrition

Got Milk?

The Got Milk slogan has been a popular ad campaign using many celebrities to promote the advantages of drinking milk. However, many people have an inability to consume milk (and other dairy products) due to lactose intolerance. Those who have lactose intolerance are deficient in an enzyme termed Beta-galactosidase. Luckily, there are over the counter enzyme replacement remedies for this rather common condition. During this workshop we will test three brands for their ability to break down lactose and, by collecting results from the group, be able to identify the best brand for those who enjoy milk and other dairy products.

Sandy Grunwald, Ph.D., Chemistry

Movie Production through Computer Programming

Computers are used to power cell phones, assist surgeons and nurses, keep cars running, send e-mail and create movies. In this workshop we will learn the basics of computer programming by writing, directing and filming a movie script. We will construct a virtual 3D world involving dancing figure skaters, singing frogs, and polar penguins and direct these objects by creating a programming script and then record it all using a virtual camera that follows our every instruction.

Kenny Hunt, Ph.D., Computer Science

Mrs. Jones's Kidney Problem

Mrs. Jones has diabetes and has suffered severe damage to her kidneys. She has been recommended to receive a kidney transplant. Due to the severe shortage of suitable donor kidneys, it has been suggested that a family member might donate an organ. All of her immediate family — her husband, five children and two brothers have agreed to be considered as donors. Learn how Mrs. Jones and her family are tested to find out who is the best match for donating a kidney. Hands on work will involve performing a tissue typing test to provide information for the case.

Bernadette Taylor-Winfrey, Ph.D., Microbiology

Rockets

Someday, humans hope to explore other planets in person. In order to get there, we use rockets that make spaceships and space probes the fastest objects ever created. The rockets we make won't be quite that fast, but we will learn about the basic operation of rockets as well as many of the ideas that the next generation of scientists will have to think about before they can go to Mars and beyond.

Eric Barnes, Ph.D., Physics

Shards of the Past: Experimental Archaeology

Stones, bones and potsherds: these are often all that archaeologists have to reconstruct past lifeways. We'll examine the artifacts that tell us about 12,000 years of Wisconsin prehistory. Then we'll make and use our own stone tools, cordage, and pots, and explore how ancient people lived and adapted.

Connie Arzigian, Ph.D., Archaeology

The Universe in Invisible Light

The world around us is filled with fascinating things, in every color of the rainbow. But there's more to light than the colors you see! Invisible light is all around us. Come learn how we know invisible light exists, since we can't see it directly. We'll explore the properties of invisible light, learn how it affects you and how it is used all around us (from TV remote controls to colorful beads). We'll see how we use invisible light to learn things about planets, stars and galaxies that we can't find out any other way!

Shauna Sallmen, Ph.D., Physics

The Wonderful World of Plankton

Plankton is much more than a regular character on *SpongeBob SquarePants*. In fact, it is a very abundant and diverse group of organisms living beneath the surface of the water of our oceans, lakes and rivers. We will explore this amazing diversity of organisms in the laboratory using microscopes to view many different kinds of plant and animal plankton and to learn some basic identification skills. We will also perform a few experiments to examine their behavior to see how they respond to different environmental situations. Finally, we will take some measurements to see how plankton affect their environment and gain some real insight as to why this group of organisms is important to the health of our planet.

Eric Strauss, Ph.D., River Studies Center, Biology

Waterworks

Water seems like a pretty simple thing, but is it really? What makes water safe to drink and how can we know that it is safe? Why is water so special? In this workshop you will become chemists and answer these questions. You will explore drinking water using several different chemistry techniques.

Laura Roessler, M.S., Chemistry

Will It Float? The Mathematics of Density

How can huge aircraft carriers that weigh million pounds stay afloat? Why does oil float on top of water? How do hot air balloons fly? Learn the mathematics of density and apply your knowledge to design a cardboard boat that you can build with your parents. Let's see if you can design a boat large enough to fit your entire family!

Jon Hasenbank, Ph.D., Mathematics

You GO Girl!

In order to be physically fit we participate in many physical activities, but did you ever wonder how the body responds during that activity? The heart and lungs supply us with the "engine" we need to be active and fit. Food supplies us with the energy we need to be active. Find out how many candy bars or bags of M&M's® it takes to do your homework, dance, run a marathon or perform your favorite activity. We will use some fun mathematical equations and advanced physiological measuring equipment to conduct some experiments that look at energy taken into the body and how it's used for activity.

Rebecca A. Battista, Ph.D., Exercise and Sport Science

Girls in Science Registration Form

Program #44-30

Name _____

Date of Birth _____ Age _____ Grade Entering Fall 2009 _____

Address _____

City _____ State _____ ZIP _____

Home Phone _____

E-mail Address _____

Father's Name & Daytime Phone _____ (____) _____-

Mother's Name & Daytime Phone _____ (____) _____-

School Name _____

Most current year participated in Midwest Talent Search: _____

If you are applying for a scholarship, check here and enclose a 15% deposit.

Registration Fee: \$160

Form of Payment (check one):

Visa MasterCard American Express Check (made payable to UW-L)

Credit Card # _____ - _____ - _____ - _____ Exp. Date: ____/____

Cardholder's Signature: _____

Print Name of Cardholder: _____

Race/Ethnicity: (optional) Black (not of Hispanic origin) Hispanic White
 American Indian Asian or Pacific Islander

Return this form and method of payment by May 29, 2009.

By Mail: UW-La Crosse, Continuing Education

1725 State St., 205 Morris Hall

La Crosse, WI 54601

By Fax: 608.785.6547

By Phone: 608.785.6504; toll-free 1.866.895.9233

By Internet: www.uwlax.edu/conted

Registration implies permission for photos, publicity and inclusion in a participant list unless Continuing Education/Extension is notified in writing prior to the program.

Please rank your choices with **1** for first choice and so on. In those cases where students do not complete the rankings, UW-L reserves the right to assign workshops.

Saturday Workshop I (rank 1-6)

- ____ Art and Music . . . and Math!
- ____ Crime Scene Investigation: The Case of Jason Worth
- ____ Got Milk?
- ____ Movie Production through Computer Programming
- ____ Shards of the Past: Experimental Archaeology
- ____ The Wonderful World of Plankton

Saturday Workshop II (rank 1-6)

- ____ Art and Music . . . and Math!
- ____ Crime Scene Investigation: The Case of Jason Worth
- ____ Rockets
- ____ Shards of the Past: Experimental Archaeology
- ____ The Wonderful World of Plankton
- ____ Will It Float?

Sunday Afternoon Workshop III (rank 1-6)

- ____ Catch a Flying Car
- ____ Food is Fuel and Munch, Munch More
- ____ Mrs. Jones's Kidney Problem
- ____ The Universe in Invisible Light
- ____ Waterworks
- ____ You GO Girl!

"I think this program is wonderful. This is my third year in attendance and I have really enjoyed it."

— Past participant

"I really liked all of it. I think mixing everything was a lot of fun. It was also really neat to see all the different experiments you can do at home."

— Past participant