October 12, 2010

Schedule of Events	
8:00-8:30	Registration and pre-event activities
8:35	Welcome and opening remarks
9:00	**Speaker: Joanne Altman**
9:30	Morning labs
10:35	**Speakers: Dawn Kirchner and Teresa MacDonald** **"Matter, Mammals and Molecules: Adventures in Science Education".**
11:00	Lunch with lab instructors and time to meet other girls!
11:30	**Speaker: Mary McCoy** **"Bugwoman in the Tropical Rainforests."**
12:00	Afternoon labs
1:05	A very special event
1:30	Closing remarks

A special thanks to:

Capitol Federal

Target

K.U. Association for Women Geoscientists

Washburn Biology Club

Chartwells Dining Services

and

ALL THE LAB LEADERS and HELPERS!

For making this day possible!!

Speakers

Joanne Altman grew up in New York, the daughter of a veterinarian and a teacher. She teaches about animal behavior at Washburn University. She feels that her field of research is just a natural product of her childhood experiences. Her father had a small animal practice, but he specialized in birds and exotics. People always thought she'd follow her father into veterinary medicine but she was always more concerned with the animals fear and discomfort than their physical care - and she says she pales at the sight of needles and blood! She discovered there was an area of psychology that involved animals and chose her college because it had 17 monkeys in the Psychology Department. She has worked with lions, bears, monkeys, orangutans, gorillas, elephants, and hippos. She has taken students to study in Indonesia (Bornea), Costa Rica, and a number of African countries: Kenya, Tanzania, Rwanda, Botswana, and South Africa. She has also spent several weeks in the Amazon Jungle and a couple of weeks in Australia.

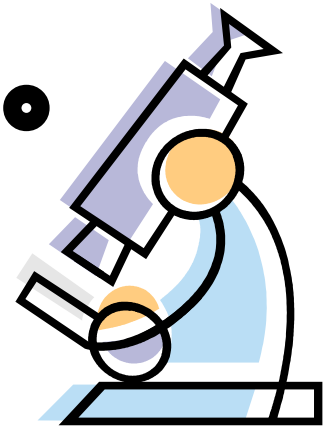
Mary McCoy is an entomologist – she studies insects and spiders. Mary grew up in the country near Kansas City, and spent as much time as possible in the nearby woods when she was young. She graduated from KU in 1961 with a Zoology degree. She earned her Master's Degree in entomology, where she was the only woman in a department with 30 guy students. She worked for the U.S. Forest Service for a year, and then went back to KU for her Ph.D. in Entomology. She taught at Washburn University for 33 years. She has studied social spiders, cockroach behavior, and medical entomology; and more recently she has studied the complicated and amazing ecosystems found in tropical rain forests. Her studies have taken her to rainforests in Ecuador and Peru in the Amazon lowlands, and to the Galapagos Islands. She just returned from a trip to Vietnam and Cambodia a few weeks ago. She LOVES teaching, and biology, and the study of all organisms.

Teresa MacDonald is the Director of Education at the University of Kansas Natural History Museum. She was born and grew up in Winnipeg, Canada and earned a Bachelor's honors degree in physical anthropology, later moving to western Canada to pursue a Masters degree in vertebrate paleontology. From there, she taught science at a rural high school in northern Ghana (West Africa), then onto the United Kingdom before moving to Lawrence, Kansas. More than twenty years experience teaching science in five countries and on three continents—has given her an opportunity to work in varied settings with diverse groups including museums, science centers, universities and schools, from Kindergarten to college level. Teresa is also involved in National Science Foundation grants, including *Quarked! Adventures in the Subatomic Universe* which includes a website—www.quarked.org—with animated characters that are featured in physics videos and games.

Dawn Kirchner is the Senior Museum Educator and summer camp lead at the University of Kansas Natural History Museum (www.naturalhistory.ku.edu). Born and raised in Dayton, Ohio—home of the Wright Brothers—she earned a Bachelors in biology and Masters in environmental sciences. Before entering the science education field, she worked in aquatic toxicology and travelled to Canada and across Europe doing fieldwork. Dawn has more than seven years science education experience at museums in Ohio and now Kansas, which has included animal care, teaching hands-on science workshops for schools, families and adults, and developing activities and programs on a wide range of subjects, such as energy and nanotechnology.

Women in Science Day, 2010

Lab Descriptions



Lab 1: **What's in that Dirty Mouth?**

You probably know that the mouths of cats and dogs have lots of bacteria living inside of them. What you may or may not know is that human mouths also contain a wide variety of microorganisms. Are you curious about what kinds of bacteria you can find in your mouth? Come join us as we search saliva samples for bacteria that live inside the human mouth and discuss some of the positive and negative impacts these microbes have on your lifestyle.

Lab Leader: Susan Bjerke

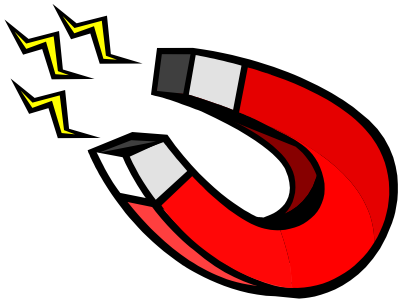
http://commtechlab.msu.edu/sites/dlc-me/zoo/zahmain.html

Lab 2: **Mussel power!**

Did you know that oysters and clams have relatives in the Midwest? Learn all about freshwater mussels from the inside out – from anatomy and life history to amazing facts about their diversity and ecology – and then take a mussel shell home with you!

Lab Leaders: Liz Smith, Constance Buckner and Diana Chamberlain

Lab 3: **Electricity and Magnets**



You are familiar with common magnets, such as those that you put on your refrigerator, but did you know that magnetism and electricity are related? In this lab, you will learn about the relationship between electricity and magnetism. You will then have the opportunity to create a magnet using electricity, and to explore the behavior of an electric current in the vicinity of different types of magnets.

Lab Leaders: Karen Camarda

"How Electromagnets Work"
http://science.howstuffworks.com/electromagnet.htm

"An introduction to how magnets work..."
http://www.explainthatstuff.com/magnetism.html

Lab 4: Who Dunnit?

Who Dunnit? That is the question our budding forensic chemists will answer using and viewing analytical techniques used in actual crime laboratories. The hands-on laboratory will allow our future forensic scientists to run two types of chromatography. The demonstrations will include identification of a white powder by Infrared Spectroscopy (IR), differentiating various clear liquids by color change using Atomic Absorption Spectrophotometry (AAS), and – the ultimate crime solving tool – DNA analysis.

Lab Leaders: Sue Salem, Sam Leung, and Lisa Sharpe-Elles

IR spectroscopy:
http://video.google.com/videoplay?docid=-4094804743877083 00

chromatography:
http://www.chemguide.co.uk/analysis/chromatography/paper.html#top

emissions:
http://en.wikipedia.org/wiki/Emission_spectrum

DNA:
http://www.youtube.com/watch?v=DZzuNpEwkvg

Lab 5: Why do you Run so Fast?

Have you ever wondered why some people can run faster, longer, better than others? How fit do you think you are? The Physical Therapy Department at Washburn University will give you an hour full of fitness testing and training tips for fitness and fun. Bring your workout clothes, running shoes, a willingness to test your fitness level, and all the questions you have about physical therapy and becoming involved in your own fitness as well as a career that focuses on helping others do the same.

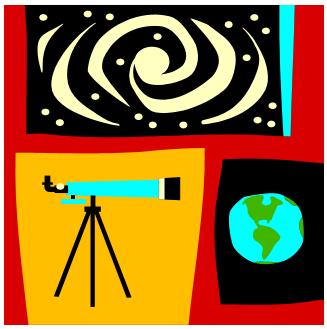
Lab Leaders: Lori Khan

Lab 6: **Everyday Super Powers!**

We all know that if you touch something hot, you will pull back quickly, or if an insect flies towards your eye, you blink. Have you ever thought about how that happens? Come investigate the amazing "World of Reflexes". See how reflexes protect you by utilizing different parts of the nervous system, then test the speed and strength of some of your reflexes.

Lab Leaders: Tracy Wagner, Paul Wagner, and Valeria Acors

Lab 7: **In a Galaxy Far, Far Away…**



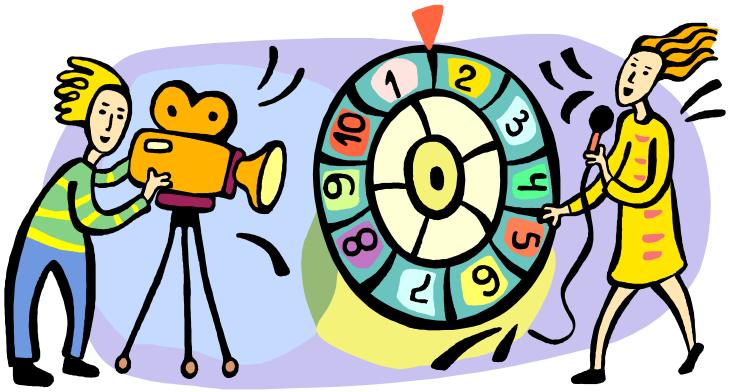
Why are comets called dirty snowballs, or snowy dirtballs? Are they really made of snow or dirt? We will discuss comets: where they begin, their composition, their role in the solar system, and their characteristics. We will also make a model of a comet and observe some of the traits shared by the model and a real comet. Then we will document characteristics and share observations.

Lab Leader: Brenda Culbertson

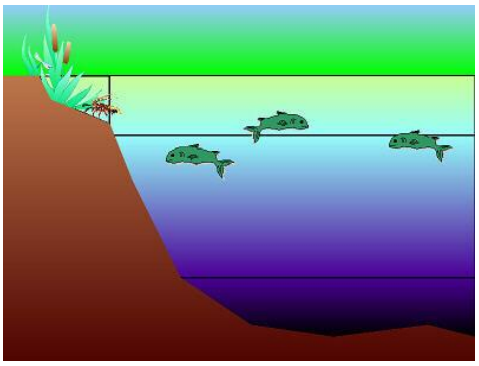
Lab 8: **Game Show Math**

Deal or no deal? Which door is hiding a car, and which a goat? Where should you drop the Plinko disk for the best chance to win a good prize? Come to this workshop to explore the math behind game shows. Who knows? It might just help you win the grand prize one day!

Lab Leaders: Sarah Cook, Jennifer Wagner and Hwa Chi Liang



Lab 9: **What Lies Beneath?**



Everyone enjoys spending time at the lake. Have you ever looked out over the water and wondered what goes on beneath the lake surface? There are a lot of things going on down there! The unique physical properties of water allow lakes to separate into distinct layers during warm summer months. This process is called thermal stratification. During this laboratory you will construct a model lake, create thermally distinct layers, explore how storms affect these layers, and discuss the influence these layers have on water quality and aquatic organisms.

Lab Leader: Jennifer Graham

http://faculty.gvsu.edu/videticp/stratification.htm

http://waterontheweb.org/under/lakeecology/05_stratification.html

Lab 10: **Would You Drink That Water?**

The chemical properties of water tell a story about where it came from. Learning about what's in water and its watershed can be a great adventure! During this lab, students will test water from several sources. The test results will give clues about where the water came from and whether or not students would want to drink it. Students will have the opportunity to use leading edge technology to test for chemical properties such as dissolved oxygen, nutrients, and pH.

Lab Leader: Mandy Stone

Information about water chemistry:
http://ga.water.usgs.gov/edu/waterquality.html
http://www.dnr.mo.gov/env/wpp/vmgmp/vwqm-intro07.pdf

Hydrology and what hydrologists do:
http://ga.water.usgs.gov/edu/hydrology.html

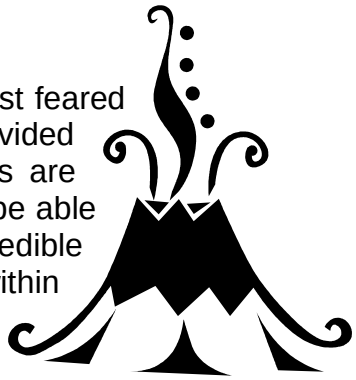
Lab 11: **From Bach to Bond: Explorations in Music, Numbers and Cryptography**

We will explore patterns both musical and mathematical. Our lab will uncover the "hidden secrets" in musical compositions and other ciphers. Come try your skills against some well-known code-breakers and learn how to encrypt information. If you are good at keeping secrets, this lab will put allow you to test your skills!

Lab Leaders: Donna LaLonde and Cathy Hunt

Lab 12: **(cancelled)**

Lab 13: **Volcanoes!**



This lab will delve into all aspects of volcanoes - some of the most feared and awe-inspiring structures in the natural world. The lab will be divided into four stations that will cover everything from how volcanoes are formed to the history and dangers of volcanic eruptions. You will be able to build your own volcanoes and watch them explode, play with edible magmas and lavas, and model the formation of magma deep within the Earth's crust.

Lab Leaders: KU Chapter of the Association for Women Geoscientists
Cori Meyers and Erin Saupe

http://en.wikipedia.org/wiki/Volcanology

http://volcanoes.usgs.gov/ (general info on volcanoes monitored by the USGS, also has tabs to more info about volcanoes/volcanology)

http://volcanoes.usgs.gov/about/faq/index.php (this link includes answers to questions like "how do i become a volcanologist?" and "what kind of schooling do i need to be a volcanologist" that might be useful for the girls)

http://volcano.oregonstate.edu/kids/index.html (OSU's website on volcanoes for kids; also has links to active volcanoes, FAQs, etc.)

http://www.volcano.si.edu/faq/ (smithsonian global volcanism program website)

http://www.kidsgeo.com/ (geology/geography site w/ info and games for kids, the lesson particularly relevant for volcanology/plate tectonics is:

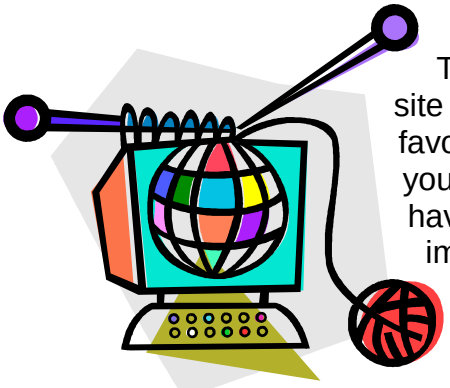
http://www.kidsgeo.com/geology-for-kids/0037-the-earth-earth-inside-out.php)

Lab 14: **The Secret Lives of Flowers**

Have you ever wondered about the incredible diversity of flowers you see around you? Whether most of the flowers you see are in florist shops, around the city, or in your home the different shapes and colors of flowers are staggering. Come learn about the evolution of the flower, the incredible diversity of flowers, and how to identify types of flowers. We will also be dissecting flowers and discussing the reproductive cycle of flowering plants.

Lab Leader: Sharon Ashworth

Lab 15: **Let's Create a Web Site!!**



This workshop is designed to help you create your personal Web site to share with family and friends. Bring information about your favorite hobby, your favorite state, favorite Web sites, or about a place you would love to visit. Using a popular Web site creation tool, we will have a page up and running in no time that includes links to pages, images, and other Web sites.

Lab Leaders: Roberta Jolly