

SCIENCE EXPLORATION DAYS 2011

SENIOR HIGH DAY

Grades (9) 10-12

Thursday, May 12

9:30 am - 1:00 pm

Sponsored by
Central Western Section
Science Teachers Association of New York State

St. John Fisher College
Rochester, New York 14618

201. COOL THINGS TO SEE IN THE NIGHT SKY

Carol Latta (Astronomy Section of the Rochester Academy of Science, U of R Teaching Assistant)
Have you ever wondered what is in the night sky above you? In this workshop, we will examine a few interesting astronomical objects that you can observe for yourself **just using binoculars**. You will get information you can take home to try this out yourself on the next clear night! And while we are at it, we'll explore some of the science behind the objects.

202. WILDLIFE DETECTIVE

Ron Schroder (NYS Department of Environmental Conservation, retired)
You'll learn how to detect the wildlife that lives around us by identifying the clues they leave behind. Hands-on samples will aid your sleuthing.

203. EYE, TISSUE, AND ORGAN DONATION

Pat Moorehouse (Rochester Eye and Tissue Bank)
Team up with others to play an interactive game "STAT RUN" that is fast paced, full of fascinating information, and designed to teach and explore the field of organ and tissue donation.

204. THE EXCITEMENT OF CHEMISTRY

Dr. Kenneth Schlecht (SUNY College at Brockport)
View an array of numerous chemical phenomena intended to surprise you and catch your interest. Witness explosions, color changes, and fire, all designed to generate thought and a scientific explanation.

205. EINSTEIN'S RELATIVITY – 100 YEARS OLD AND STILL VERY COOL!

Dr. Steven Manly (University of Rochester)
We will discuss the origin and consequences of Einstein's special theory of relativity, which was published 100 years ago. We will explore the relative nature of space and time, including bizarre phenomena such as time dilation, length contraction, and the relativistic concepts of simultaneity and causality.

206. ADVENTURES IN CIVIL ENGINEERING

William VanAlst (American Society of Civil Engineers)
The role of the civil engineer in solving problems is developed through discussions. A variety of careers in engineering will be explained.

207. STOP DWI- FATAL VISION GOGGLES

Linda Uebelacker (Monroe County Office of Traffic Safety)

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A discussion of the impact other people's choice to drink and drive can have on your life.

208. THE STUDY OF LANGUAGE: LINGUISTICS

Dr. John Rhoades (St. John Fisher College)

Humans are the only animal with “language.” While all life communicates, only humans employ a complex system of signals and arrangements that permits sending and receiving symbolic messages. Linguistics is the social scientific study of language in all of its manifold uses. Some questions we will confront: How many languages are there? Why is it hard to learn another language? What is the difference between speech and writing? Do languages change? What is the oldest language?

209. BUILD YOUR OWN WEB PAGE

Robert Palmer (Rochester Democrat and Chronicle)

There are lots of programs to help build Web pages, but you can build a simple page from scratch -- controlling images, fonts, backgrounds and other aspects -- with any simple word-processing program like Word Pad or Note Pad - and we will! Each student will have a computer to build and view his or her page, and we'll talk about more complicated pages and what's needed to get pages onto the 'Net.

210. LASER FUSION

Dr. Reuben Epstein (University of Rochester, Laboratory for Laser Energetics)

At the Laboratory for Laser Energetics, the powerful 60-beam OMEGA laser compresses and heats tiny hydrogen targets to conditions found near the center of the sun. We will explain how these experiments produce thermonuclear fusion, similar to the fusion power source of the sun, and how this could develop in the future into a commercial power source. We will also present highlights from our Summer High School Research Program.

211. FUTURE MEDICINE: GENETICS + BIOINFORMATICS = PREVENTION

Dr. Gary R. Skuse (Rochester Institute of Technology)

Modern medicine is technology-based and delivers excellent health care for individuals when they become sick. However, recent insights into the human genome, an increasingly thorough understanding of the molecular basis of human health derived from a systems approach to studying biology and advances in information technology are poised to change the way we think about health care. Before long we will combine our understanding of gene expression, and the interactions among gene products, with computing technologies to predict and prevent illness. We will visit our doctors before we get sick, a major deviation from our current system. This change will result in a need for countless new, highly skilled workers in the health care field and for individuals who have interdisciplinary expertise in the biological and computational sciences.

212. ALL ABOUT REPTILES

Tina Crandall (Conservation Education Coordinator/Seneca Park Zoo)

Are you eager to meet and learn about reptiles? Here's your chance to learn how scientists differentiate between the different groups, understand why reptiles are important, and find out what we can do to help reptiles survive. You'll meet a variety of reptiles during the presentation.

213. SALIVARY SOUP – WHAT SALIVA CAN DO FOR YOU

Ellie Phillips DDS (Author, Kiss Your Dentist Goodbye)

Healthy saliva is vital for teeth – as vital as clean water is to the fish in a fish tank!

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Any idea how can you clean your saliva? What happens if you have infected saliva, or saliva that is unhealthy for teeth? Learn how to keep saliva healthy and how to test for minerals, bacteria and the health of your body. Oral DNA testing shows many body imbalances. Don't think of saliva as spit any more, it is salivary soup – an essential liquid to keep teeth and gums healthy and provide vital information that links oral health to whole body health.

214. THE EARTH TRANSFORMED: EXPLORING HUMAN IMPACT ON LANDSCAPES AROUND THE WORLD

Mike Batek (Project Manager, Crossing Boundaries)

Have you ever wondered how much humans have impacted the environment? In this session you will learn to use cutting edge geospatial technology to travel through time and see for yourself how humans have changed and continue changing the face of the Earth. Learn about some of the most challenging and dramatic environmental issues and impacts across the globe!

215. INCREDIBLE INSECTS

Robert J. Iveson Jr. (Ward's Natural Science Establishment, retired)

Learn why insects are so successful and why “bugs” may not be as bad as most people think they are. The amazing adaptations and dynamic diversity of earth's most abundant life forms will be illustrated with actual (and live) specimens.

216. ULTRASOUND: THE WAVE OF THE FUTURE

Prof. Hamad Ghazle and Jodie Crowley (Rochester Institute of Technology, Allied Health Sciences)

You have heard of, and probably know someone who has had an ultrasound examination. You may have even had an ultrasound examination yourself. Did you ever think that a career in ultrasound might be right for you? Do you like to work, interact with and help people? Do you want to work in the medical field? Are you thinking of becoming a doctor? Do you want to be able to have a job anywhere? Join us to get the answers to these questions and learn about this exciting career.

217. LIGHTNING EXTRAVAGANZA

Jamie Oliver (Electronic Engineer, Eastman Kodak Company)

Witness a 4-foot, continuous lightning discharge from a 1,800-watt Tesla Coil. Experience plasma forming, and learn about Nikola Tesla, one of the world's true genius inventors.

218. INTERACTIVE HANDS-ON FORENSIC WORKSHOP

Mr. Timothy Wilson and Ms. Deborah Janes (Eastman Kodak Company)

The drive to unlock the mystery of some crime through the application of science is great for the forensic scientist. The result of the forensic scientist's work has real meaning with life and death implications and impact upon the criminal justice system. Participants will investigate several different disciplines of analytical sciences as they pertain to forensics. No chemistry background is needed for this exploratory workshop, just the willingness to get your hands dirty while having fun.

219. MASTODONTS IN THE MUCK

Jutta Siefert Dudley, Ph.D (SUNY College at Brockport)

Many swamps across the Great Lakes region contain the skeletal remains of elephant-like creatures called mastodons that were part of the Ice Age ecosystem. How did these animals live and why did

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they become extinct? Come find out what we know so far. You'll examine some samples and see how paleontologists digging in the muck uncover the past.

220. CAN YOU HEAR ME NOW? HOW WE HEAR: FROM EARBUD TO BRAIN.

Sarah Klimasewski (Audiologist)

Overview of basic anatomy of the ear and auditory pathway, how sound travel through the pathway, different types of hearing loss and hearing conservation; particularly how to listen to personal stereo systems safely and the hazards of too much “noise”.