



Science, Technology, Engineering & Mathematics

STEM Conference 2014

S.T.E.M Conference Science, Technology, Engineering, Math Strategies That Engage Minds

April 8, 2014

**A Unique opportunity for Gifted and Talented 7th & 8th Grade Students
Offering a variety of fun hands on activities this conference will introduce students to STEM
careers. Students will have the opportunity to attend up to 2 sessions presented at WITC and
Northland College.**

Topics

***Introduction to Biotechnology * Introduction to Earth Materials & Resources
*Exercise Physiology *Mathematics with Images *The Air Keeps Spinning Round *What is in a
Forest? *Robotic Obstacle Course *Build a Turbinator * Simulation in Nursing *Computer
Aided Design**

(See page 2 for session descriptions)

Where

**Wisconsin Indianhead Technical College, Ashland Campus
Northland College, Larson Juhl Center for Science & Environmental Studies
Ashland High School**

When

April 8, 2014

Agenda

**9:00 AM Registration at WITC Conference Center
9:15 AM Opening Session
9:45 AM - 11:20 AM Morning Sessions
11:20 - 11:50 AM Lunch (Pizza will be served at WITC)
12:00 PM – 1:35 PM Afternoon Sessions
1:45 PM Depart for Home**

Conference Fees

**Free to the members of the CESA #12 Gifted & Talented Grant Consortium
(Ashland, Bayfield, Butternut, Chequamegon, Drummond, Hurley, Maple, Mellen, Mercer, Northwood, Phillips,
Solon Springs, South Shore, Washburn, Winter).
\$25 per student for Non Consortium Members (Hayward, Superior)**

Registration

**Complete Attached Form
Registration due date is March 31, 2014
Limit of 135 students (9 students per district)
First come first served**

STEM Session Descriptions



Introduction to Biotechnology: DNA Extractions: We will extract DNA from a variety of foods and discuss how scientists are using DNA procedures in different areas of biological science. We will also discuss how DNA can be used to help us learn about reptiles. Presented by **Dr. Kayla Bieser**, Professor of Biology

Introduction to Earth Materials and Resources: Students will learn the basics of identifying minerals and rocks by their distinctive physical properties, textures and structures. We will discuss the importance of minerals and rocks as resources for society. We will also look at minerals and rocks under a specialized petrographic microscope. Presented by **Dr. Tom Fitz**, Professor of Geoscience

Exercise Physiology: Your Body on Exercise: We will discuss the importance of exercise in managing weight and on maintaining a healthy body and what we have learned about exercise in recent years. Using computer software and specialized equipment, we will see the effects that exercise has on heart rate, blood pressure and lung capacity. Presenter by **Dr. Katie Stumpf**, Professor of Biology

Mathematics with Images: Students learn the mathematics behind images through MATLAB experimentation. We will explore various mathematical operations occurring in Image Processing. Presented by **Dr. Sharad Silwal**, Professor of Mathematics

The Air Keeps Spinning Round: Extreme Weather Today and Tomorrow: Students will be introduced to the basic structure of hurricanes and tornadoes. We will examine the fundamental forces responsible for generations of these destructive phenomena. Finally, we will peer into our crystal ball (climate model) and examine whether or not we will see more hurricanes and/or tornadoes. Presented by **Dr. Luke Van Roekel**, Professor of Atmospheric Science.

What is in a Forest? We need healthy forests for producing lumber for homes and fiber for paper. Forests store lots of carbon that can help reduce carbon dioxide in the atmosphere. We will learn how trees grow, and we will figure out how much stuff (like boards for homes and furniture, pieces of paper, and pounds of carbon) is contained in a forest. Presented by **Dr. Jonathan Martin**, Professor of Forestry, Natural Resources and Ecology.

Robot Obstacle Course: Program a robot to navigate an obstacle course and learn about computer programming and mathematical concepts used in the world of robots. Learn about careers in robotic engineering. Presented by **Paul Gordon**, WITC Instructor & **Theresa Paulsen**, Ashland School District

Build a Turbinator: Design and build a simple windmill and test to see which design generates the most electricity. Learn about career in energy conservation. Presented by **Ian Meeker**, University of Wisconsin Extension

Simulation in Nursing: This session will demonstrate how nursing is now able to utilize classroom simulation to better prepare for their hands on clinical experiences. This session will talk about the uses of simulation and give a hands-on demonstration. Presented by **Tina Hagstrom**, ADN Instructor WITC

Introduction to Computer Aided Design: Students will have the opportunity to experience a CAD (computer aided design) system, students will be introduced to how computers can use software to create, analyze, render, and produce models. Presented by **Ken Zeman**, Teacher Ashland High School

STEM SCHEDULE

Registration 9:00 AM	WITC Conference Center		
General Session 9:15 AM	WITC Conference Center		
	WITC	Northland College	Ashland High School
Morning Sessions 9:45 AM – 11:20 AM	<ul style="list-style-type: none"> • Robot Obstacle Course • Build a Turbinator • Medical Technology • Simulation in Nursing 	<ul style="list-style-type: none"> • Introduction to Biotechnology: DNA Extraction and Reptiles • Introduction to Earth Materials & Resources • Exercise Physiology: Your Body on Exercise 	<ul style="list-style-type: none"> • Computer Aided Design (CAD)
Lunch 11:15 AM – 11:45 AM	WITC Conference Center		
Afternoon Sessions 11:55 AM – 1:30 PM	<ul style="list-style-type: none"> • Robot Obstacle Course • Build a Turbinator • Medical Technology • Simulation in Nursing 	<ul style="list-style-type: none"> • Mathematics with Images • The Air Keeps Spinning Round: Extreme Weather Today and Tomorrow • What is in a Forest? 	<ul style="list-style-type: none"> • Computer Aided Design (CAD)

For more information on registration contact: Nancy Harrison at CESA 12, (715) 682-2363 Ext 160 nancyh@cesa12.org

