

Agenda

Day 1 – Wednesday, August 17, 2016

8:00am Breakfast, Introductions, and Announcements - Auditorium

8:30am Key Note Speaker: - Auditorium

9:30am Michigan Environmental Education Curriculum Supplement Training Session Teasers (MEECS Facilitators) – Auditorium

10:00 MEECS Climate Change for Grades 7-9 - **Auditorium**

MEECS Climate Science Unit provides teachers with a relatively compact overview of climate science, emphasizing data relative to Michigan and the Great Lakes. The lesson sequence begins with distinguishing between weather, climate, and climate variability. Students then gain a basic understanding of the natural mechanisms of climate change through exploration of the Earth's energy balance, the greenhouse effect, and the carbon cycle (sources and sinks). This is followed by a look at climate forcing and uncertainty, evidence of change, and climate models. Climate Science includes the following lessons: what is climate?; earth's energy balance; greenhouse effect, climate models, carbon cycle, climate forces and uncertainty, evidence of change

10:00 MEECS Ecosystems & Biodiversity Grades 5-6 – **Terrace Room**

MEECS Ecosystems & Biodiversity Unit uses a Michigan context to provide students with a solid foundation in understanding basic ecological principals, as well as the importance of biodiversity as it relates to Michigan's environment, economy, and society. Participants will actively learn outside about ecosystems function threw lectures and taking lessons outside, Key concepts include: Habitat levels; biome, community, population, ecosystems, organisms

11:00am **Break**

11:15 Return to your MEECS training session

12:30pm **Lunch** at McCrary Dining Hall

1:30pm MEECS Climate Change for Grades 7-9 - **Auditorium**

Part 2: Climate Impacts on Michigan and the Great Lakes begins where Climate Science ends, with a review of the indicators of climate change, and

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then focuses on the potential impacts of changes in Michigan. Three lessons focus on the social science perspective and on the decisions which might confront citizens of Michigan in the future. The lessons are:

- Climate Change Indicators
- Plant and Animal Phenology
- Ecosystem Relationships
- Climate Change in the News.
- Water balance in the Great Lakes
- What Can I do?
- Community Conversations

1:30pm MEECS Ecosystems & Biodiversity Grades 5-6 – **Terrace Room**

Biodiversity lessons include scientific investigation, data-based decision making and reviewing factors that threaten biodiversity.

2:30 - Groups go outside and practice lesson plan activities

3:15pm **Break**

3:30pm – Facilitators and participants share what they learned - **Auditorium**

4:00pm Evaluation and Adjourn

Day 2 – Thursday, August 18, 2016

8:00am Breakfast, Introductions, Announcements - Auditorium

8:30am Plenary Speaker: Aaron McCright – “Bringing students to STEM through teaching Climate Change” – Auditorium

9:30am Concurrent Session Teasers - Auditorium

10:00am Concurrent Session 1 (2 hours Sessions)

A. **Algae in the Classroom – Jake Nalley and Connie High** – Algae just might be the answer to a number of the pressing sustainability concerns we face. Bringing algae into the classroom with this “drop in ready” kit offers students the opportunity to be phycologists! Students will cultivate their own algae, monitor its growth and discover the many reasons algae could be feed, food, fertilizer and fuel! Kits will be provided without charge by the Algae Foundation.

B. **Biomimicry – Gretchen Hooker** – What exactly is biomimicry? It's in the news, a buzzword, but how can this topic make learning about science so interesting? Well, the Biomimicry Institute has developed a number of tools to get students engaged with the wonders of biomimicry

C. **Agricultural Education at KBS – Chris Anderson** – The Kellogg Biological Station has a world renowned Long Term Ecological Research site that focuses on agricultural practices. This agricultural backdrop is the foundation for the K-12 Partnership, and in this session teachers will have the opportunity to learn more about the educational tools available about the LTER site and educators will also help continue to develop more resources.

11:00am Break (Auditorium)

12:15pm Group photo behind the Manor House

12:30pm Lunch at McCrary Dining Hall

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1:30 Concurrent session 2 (1 Hour Sessions)

A. Classroom Management Strategies – Nanette Clatterbuck - Classroom management is a challenging task. How can teachers manage a classroom of students with differing abilities and attentiveness? This session aims to offer techniques and skills that will aid teachers in managing highly functional classes that meet a range of student needs.

B. Asking a testable question – Misty Klotz and Heather Kittredge -Discover Pacific Educations Institute's guide on Field Investigations: Using Outdoor Environments to Foster Students Learning of the Scientific Practices Join Misty and new K12 Fellow Heather Kittredge to create your own field investigation question.

C. Michigan's Most Unwanted – Dustin Kincaid - How do we identify invasive species, and why do we care? In this lesson, students learn to make and use dichotomous keys to identify common invasive species. Students will gain an appreciation for why invasive species are important through a series of discussions, videos, and keying activities. A graphing activity will allow students to make graphs, interpret data from graphs, and draw conclusions based on data.

3:15pm Break & Guacamole – Auditorium

4:00pm Evaluation and Adjourn

Day 3 – Friday, August 19, 2016

8:00am Breakfast, Introductions, and Announcements - Auditorium

8:30am Plenary Speaker: – Auditorium

9:30am Concurrent Session Teasers - Auditorium

10:00am Concurrent Session 1

A. **Urban Forestry Project, Citizen Forestry Opportunity** – Margaret Studer – Friends of Grand Rapids Parks provides education and training to citizen volunteers to help them become knowledgeable in tree planting, maintenance, and identification. For this session, teachers will be introduced to the Citizen Forestry Project and the classroom opportunities this Citizen Scientist project offers.

B. **Papermaking with Invasive Plant** – Jane Kramer – Jane Kramer is a local artist who specializes in photographing extremely rare native plant species and then prints these photos on paper made from invasive species biomass. Teachers will be presented with the art of making paper from plant biomass while highlighting the importance of fostering native plant diversity.

11:00am Break (Auditorium)

Summer Presentations from KBS Research Experience for Teachers (RETs) – K-12 Partner teachers will present on their summer research experiences. Two educators worked with Dr. Doug Schemske to develop a freezing assay for *Arabidopsis* sp., while three other teachers worked with Dr. Jen Lau on a large scale prairie restoration project in the Gull Lake area.

12:30pm Lunch* at McCrary Dining Hall

1:30 Concurrent session 3 (1 Hour Sessions – Off-site Learning Opportunities)

A. **Birds of Prey Live - At the Bird Sanctuary** – Participants will go to the Bird Sanctuary to experience the Birds of Prey lesson that has been developed by the Bird Sanctuary. This lesson is offered as a field trip opportunity for students.

B. **Pond Labs and Greenhouse Tours** – Sara Garnett – The KBS Pond Labs have contributed a lot of amazing research that has advanced the field of ecology. This session will focus on introducing teachers to the Pond Lab and will cover past and current research at the site.

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C. **Outdoor Ed** – Kara Haas and Renee Bayer – We are going to go outside and it is going to be awesome! You better come, or you will regret it.

3:15pm Break & Gummy Bear Trail Mix - Auditorium

3:30pm What's next for the KBS K-12 Partnership?

4:00pm Evaluation and Adjourn