

# Tuesday, November 10, 2015

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

8:30am **Speaker: Dr. Phil Robertson**, Associate Professor, Crop and Soil Sciences, MSU. *Climate Change and Michigan Agriculture: What we've seen and what we can expect.* - **Auditorium**

9:30am **Concurrent Session Teasers - Auditorium**

10:00am **Concurrent Session 1 – 1 Hour**

- A. **Sandbox: Bringing students to STEM through teaching climate change.** Facilitator: Jakob Nalley (KBS) - **Auditorium**
  - Brainstorm ways to bring the science content from Dr. Robertson's talk to your students
  
- B. **Teaching Science Outdoors: Schoolyard Improvement Project** (elementary track), Renee Bayer (CREATE for STEM, MSU) and Kara Haas (KBS) - **Terrace Room**
  - Elementary teachers, particularly all former participants in Teaching Science Outdoors, are encouraged to attend. We will be discussing the implementation of the EPA Environmental Education grant, which will supply funds to participating schools for outdoor classroom improvements. Learn about utilizing the schoolyard as an outdoor classroom for science.
  
- C. **Mapping Land Use Change**– Tyler Bassett (KBS-MSU K-12 Fellow) and Mark Hammond (KBS) - **Classroom 145**
  - We will revisit this popular session from Summer Institute with updated and simplified maps! Maps can tell us a lot about the land. Join us to study aerial maps of the Gull Lake area dated 1938 and 2013. You will observe the map, develop questions and then learn how to quantify the land use and make a pie chart. Together we will share our findings and ways to use this activity in the classroom.

11:00am **Break** (Auditorium)

11:15am **Concurrent Session 2 – 1 Hour**

- A. **Witnessing the Changing Migration Times of Our Michigan Birds**, Misty Klotz (KBS) - **Meet Outside of the Auditorium - Bird Sanctuary Field Trip**
  - We will be observing and discussing the fall migration of the birds in mid-Michigan. As the climate continues to warm, fall migration patterns will shift to later and later in the year. We will look at ways citizen science can help your classroom track changes in bird migration patterns.
  
- B. **A Book Worth Reading: Flipping Through Ideas for An LTER Children's Book**, Bonnie McGill (KBS) and Kara Haas (KBS) - **Stack 145**



## KBS K-12 Partnership Fall Workshop 2015 – Climate Change

- The LTER site at KBS has a lot to offer, especially material for a wonderful children’s story. LTER sites across the nation have already written their own stories, so we would like to bring together teachers to brainstorm ideas on how our LTER site could make for a riveting tale of science, exploration, fun and espionage.

### C. **Challenges in helping students interpret data related to Arctic Ice Melt and The Keeling Curve**, Andy Anderson, Wendy Johnson and Hannah Miller (MSU Dept. of Education) - **Classroom 145**

- Big data is super scary, there is just so much! Sometimes when we tell students about large-scale, long term data about arctic sea ice students glaze over and fall out of their chairs. Where are we going wrong? Why is large-scale data like a Goosebumps novel? How can we overcome these challenges to excite kids about the arctic sea ice and all the changes that are happening? Stay tuned, and don’t fall out of your chair, it’s Carbon Time!

12:15pm **Group photo** behind the Manor House

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

1:30 **Lessons that are worth polishing, Lessons that are worth jettisoning.** Moderators: Michael Kuczynski, Cara Krieg (KBS) – **Auditorium**

- Work in a small team of teachers to review lesson plans created by the Partnership and develop best practices for writing, sharing and implementing each lesson plan.

2:15 **Speaker: Dr. Karel Jacobs**, Associate Professor, Biology, Chicago State University. *Thinking and Tinkering: Addressing the NGSS Science AND Engineering Practices.* – **Auditorium**

- Examine NGSS call for teaching science and engineering practices by comparing the related processes of scientific and engineering investigations. Highlight examples of engineering design in secondary science classrooms including lessons from GK-12 program. Participants will work in small groups to redesign their own lessons.

3:15pm **Break & Guacamole - Auditorium**

3:30pm **What’s next for the KBS K-12 Partnership? Spring Workshop - Auditorium**

4:00pm **Evaluation and Adjourn**



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**KBS LTER**  
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Long-term Ecological Research