

Data, Data, Everywhere! – TUESDAY, April 16th

- 8:00am **Welcome & Introductions** (Auditorium, includes breakfast): Examples of brain breaks and ice breakers to bring back to the classroom
- 8:30am **Plenary Speaker: Jen Owen**, Associate Professor in the Department of Fisheries and Wildlife at Michigan State University. *Effects of environmental stress on the health of migratory birds.* (Auditorium)
- 9:45am **Concurrent Session Teasers** (Auditorium)
- 10:00am **Concurrent Session 1**

A. Title: From Bird Beaks to Bright Coloration: Evolution in Action Activities from the BEACON Center (Stack 138)

Age range: Middle - high school

Organizer: Dr. Louise Mead (Education Director at MSU BEACON Center)

Short description: So often teaching evolution means looking at the end results – adaptations – or the fossil evidence. However, understanding evolution requires an understanding of the processes that shape populations. We will explore a few activities that help students engage in the process of evolution over time and briefly discuss possible ways for using these activities to address misconceptions.

B. Title: Resources for teaching evolution in your classroom (Stack 140)

Age range: Middle school

Organizer: Ashley Carroll (7th grade teacher Gull Lake, 2018 RET Conner Lab)

Short description: In this session, you will learn about the data nugget lesson that resulted from Ashley's RET (Research Experience for Teachers) experience. In addition, numerous other "kid test and approved" evolution will be shared.

C. Title: The coolest transformation of air carbon into matter and energy! (Stack 141)

Age range: 7-12th grade

Organizer: Dr. Caro Cordova (Postdoctoral researcher at KBS-GLBRC)

Short description: If we want to prepare our next generation of scientist, we need to be aware of the powerful carbon cycling and how biofuel production closes the carbon loop. This activity will help students to link plant biomass (i.e., matter) and energy through the carbon-transforming process (e.g., photosynthesis, respiration, and combustion).



11:00am **Break**

11:15am **Concurrent Session 2**

A. Using Data Nuggets: real research, real data, real classrooms (Stack 138)

Age range: Middle- high school

Organizers: Elizabeth Schultheis (Postdoctoral researcher at MSU BEACON Center), Marcia Angle (Retired teacher from Lawton Community Schools), Dr. Melissa Kjellvik (Postdoctoral research at MSU)

In this hands-on session we will demonstrate Data Nuggets. You will walk away with free resources that help students ask their own questions and discover relationships in data that is meaningful to them. Data Nuggets address NGSS standards, help students with their C-E-R writing and of course give your students reliable, real data.

B. Population Booms and Busts: modeling population dynamics in the classroom
(Stack 140)

Age range: 7-12th

Organizers: Robert Logan (KBS Graduate Student, Integrative Biology) & Meredith Zettlemoyer (KBS Graduate Student, Plant Biology)

Ever wonder how populations go boom and bust? We will use a game to collect data where students will model population growth rates, carrying capacity, and predator-prey interactions, as well as manipulate organisms' traits, to collect and graph their own data on population dynamics.

C. Fun online sources to talk about C cycle and biofuel production from the Great Lakes Bioenergy Research Center (GLBRC) and Carbon TIME websites. (Stack 141)

Age range: 7-12th

Organizer: Dr. Caro Cordova (Postdoctoral researcher at KBS-GLBRC)

A brief walk through available online resources with classroom materials and activities related to the carbon cycle and biofuel production provided by the Great Lakes Bioenergy Research Center and NSF in partnership with Michigan State University.

12:15pm **Lunch**

McCrary Dining Hall



1:15pm

Concurrent Session 3

A. Pollinators – How can your class make an impact? (Stack 138)

Age range: 3rd – 8th grade

Organizer: Veronica Bolhuis (MSU Extension 4-H Program Coordinator)

We'll talk about what pollinators are, their impact on our food system and how we can help to support them through pollinator gardens and native bee houses.

B. Designing classroom experiments with insects (Stack 140)

Age range: High school

Organizer: Sean Griffin (KBS Graduate Student, Integrative Biology)

Designing classroom experiments with insects can be simple and fun, and can teach students a range of skills including critical thinking, experimental design, simple statistics, and how to make observations in nature. In this session, we will discuss a few customizable experiments you can try with your high school classes.

C. Biodiversity: the vast array of life on earth! (Stack 141)

Age range: 2nd-5th grade

Organizer: Lindsey Kemmerling (KBS Graduate Student, Integrative Biology)

We will define and explore the biodiversity of earth and focus on the diversity and identification of a particular group- spiders!

2:15pm **Break** (snacks in Auditorium!)

2:30pm **Concurrent Session 4**

A. Pollinators – How can your class make an impact? (Stack 138)

Age range: 3rd-8th grade

Organizer: Veronica Bolhuis (MSU Extension 4-H Program Coordinator)

We'll talk about what pollinators are, their impact on our food system and how we can help to support them through pollinator gardens and native bee houses.

B. Inquiry in the school garden (Stack 140)

Age range: Elementary but all welcome

Organizers: Kara Haas (KBS Science Education and Outreach Coordinator) & Jaci Barrett (4th grade teacher, Lakeview School District)

We are doing a good job of using the school garden for peeking student curiosity but what does it look like to use more scientific practices in learning? We'll share



examples of student gardens at Lakeview and Gull Lake Elementary schools and use project-based learning techniques to plan inquiry projects as students.

C. Deliberating Climate Choices (Stack 141)

Age range: Middle - high school

Organizer: Misty Klotz (Outreach Educator and Volunteer Coordinator)

Deliberating Climate Choices: We will learn how to moderate a forum with students that fosters productive discussion on Climate issues. We will use Environmental Issues Forum (EIF) Climate Choices guide and show you where to access free materials and moderator guides for educators to integrate into their learning environments.

3:30pm 'Long-term Ecological Research': what and why?

Kellogg Dr. Nick Haddad, Professor, Dept. of Integrative Biology, Michigan State University and Biological Station

Our Partnership is supported by funding from the National Science Foundation's Long-Term Ecological Research program here at KBS. Let's review the basics: what is long-term ecological research and why is it important?

4:00pm Evaluation & Adjourn

