KBS K-12 Partnership Workshop October 3, 2012

Our theme for this workshop is Communicating Climate Change.

Below you'll find our agenda for the day as well as details on our concurrent sessions. Please rsvp to Robin at hibbsr@msu.edu if you plan to attend. We look forward to seeing you!

Agenda

8AM Breakfast, Announcements, and Introductions

8:15AM MSP Update with Jennifer et al.

8:30AM Speaker: "Global change: Scientific understanding and challenges for the future" with Steve Hamilton (Professor of Ecosystem Ecology and Biogeochemistry at KBS) (Auditorium) powerpoint

9:30AM Concurrent Session Teasers

9:45 Concurrent Session 1

- Gases Matter! with Sara S. in Stack 139 powerpoint, lesson plan
- Snakes on a Glade (Evolution) with Jennifer D. and Michael K. in Stack 140
- Why Fly South? with Liz S. and Dustin K. in Stack 141
- The New Farmer's Almanac with Anne R. and Tomomi S. in Stack 145

11:15AM Concurrent Session 2

- Meal Worms and Bread Mold with Jenny D. and Andy A. in Stack 139
- The Climate is Changing…with Tyler B., Cara K., and Sara G. in Stack 140
- Why Fly South? with Liz S. and Dustin K. in Stack 141
- It's Gettin' Hot in Here! with Michael K. and Jake N. in Stack 145

12:30PM Lunch

1:30PM Concurrent Session 3

- Snakes on a Glade (Ecology) with Jennifer D. in Stack 140
- The New Farmer's Almanac with Anne R. and Tomomi S. in Stack 139
- The Climate is Changing…with Tyler B., Cara K., and Sara G. in Stack 141
- It's Getting' Hot in Here! with Michael K. and Jake N. in Stack 145

2:45PM BEST Plots Fall Protocols and Restarts (Auditorium) and a chat with former Fellow Melissa Kjelvik

3:00PM District Planning and Evaluation (Auditorium)

4PM Adjourn and Teacher Advisory Committee Meeting

Concurrent Session Abstracts

Gases Matter!

With Sara Syswerda, MSP, Elementary teachers

We will be looking at common ideas elementary students have about gases, and think about how we can facilitate growth of their understanding of gases. We will conduct a series of simple experiments that elementary students can do to explore the properties of gases and help students realize that gases matter!

Snakes on a Glade Evolution: Helping students understand the role of natural selection in shaping populations

With Jennifer Doherty and Michael Kuczinski, MSP Biodiversity, MS-HS teachers

We will continue to explore the fascinating invasion of giant Burmese Pythons in the Florida Everglades and use local Michigan student interviews about these Pythons to understand how students think about evolution in natural contexts. We will then explore the MSP Biodiversity Population Change Tool that can help students reason about evolution by natural selection.

Why fly south? How climate change alters the phenology of plants and animals

With Liz and Dustin, fellows

In this lesson, we will discuss the impacts of climate change on the phenology of plants and animals. With warmer and more unpredictable transitions into seasons, what can we expect to happen to the migration timing of birds, the mating season for animals, or the flowering times in plants? Citizen science data, recorded for many years and across large spatial scales, can be used to address these questions. Using some of these datasets we will go through the scientific process of forming and testing hypotheses using real data. We will also discuss how you can start collecting citizen science data with your classes across the schoolyard or BEST Plots, making a long-term data set of your own!

The New Farmer's Almanac: Agriculture and Climate Change

With Anne and Tomomi, fellows.

In this lesson, we discuss the difference between climate and weather, and investigate how global climate change may affect our farmers. We will explore real data from the KBS long term ecological research (LTER) site and discuss what weather variation can teach us about what to expect in a changing climate. We will have an opportunity to graph data in Excel and draw conclusions based on evidence.

Mealworms and Bread mold: Inquiry for Carbon Transforming Processes

With Andy Anderson and Jenny Dauer, MSP Carbon, MS-HS Teachers

In this workshop we'll do inquiry investigations for cellular respiration, biosynthesis and digestion using mealworms and bread mold. We'll talk about what is meaningful to students when they do inquiry investigations about carbon transforming processes. What are the ways that students go wrong when reasoning about measurements, arguments from evidence, and pattern finding, and how can teachers best respond?

The climate is changing… but will it change me?

With Tyler, Cara, and Sara, fellows.

Sure, the climate is changing, but will it change me? Last summer was pretty hot and dry; last winter left a lot to be desired. Storms are more frequent, extreme, and unpredictable. But no worries, we can adapt, can't we…? This lesson will explore how climate change is already affecting our lives here in Michigan, some specific projections for the future climate, and how this might change the lives of everyday Michiganders.

It's gettin' hot in here!: Consequences of climate change

With Michael and Jake, fellows.

While public policy on climate change continues to be debated in local and national governments, the effects of global warming are already being felt by many different plant and animal populations. Rising temperatures can directly impact plant and animal populations by causing range shifts as species are forced to move into areas with temperatures they can tolerate. In the process of shifting home ranges different species that were previously isolated from one another may come in contact, leading to new biotic interactions (whether they be predator-prey, host-parasite, or resource competitor interactions). In this session participants will learn about these effects of climate change on plant and animal populations. After an in class discussion using real world examples of how global warming is currently influencing natural populations, participants will have the opportunity to go outside to play a game that put them in the role of different animals as they face the challenges of global warming.

Snakes on a Glade Ecology: Helping students understand the role of disturbance in shaping ecosystems

With Jennifer Doherty, MSP Biodiversity, MS-HS teachers

We will explore the fascinating invasion of giant Burmese Pythons in the Florida Everglades and use local Michigan student interviews about these Pythons to understand how students think about ecosystem disturbances. We will then explore the MSP Biodiversity Ecosystem Change Reasoning Tool that can help students reason about disturbances.

Participant List

Email Sara Syswerda (parrsar1@msu.edu) or Robin Tinghitella (hibbsr@msu.edu) if you would like to be added to this list.

Comstock: Laurie Anderson, Karen Rodwan

Delton-Kellogg: Todd Shipley, Dale Grimes, Rob Groesbeck, Connie High, Rob Groesbeck

Galesburg-Augusta: Mary Moreland Sutter, Terri Blake

Gobles: Becky Drayton

Gull Lake: Kim Clancy, Beth Rhodes, Jennifer Boyle

Harper Creek: Joene Joostberns, Meredith Hawkins, Alissa Renner, Sandy Erwin, Eric Crooks, Amy Smith, James Remus, Steve Barry, Shel Kunji

Hastings: Marty Buehler

Kalamazoo Area Math Science Center: Cheryl Hach, Chris Chopp

Lawton: Marcia Angle

Martin:

Olivet: Marie Toburen, Cheryl Worden, Terri Morton, Charles Bucienski, Mike Boehmer, Russ Stolberg, Jeremy Milarch

Parchment:

Plainwell: Sandy Breitenbach, Lisa Wininger, Noel Muselin

Thornapple-Kellogg: Jamie Bowman

Vicksburg: Lisa Harbour, Liz Ratashak

KBS: Tom Getty, Andy Anderson, Robin Tinghitella, Sara Syswerda, Sarah Bodbyl Roels, Jennifer Doherty, Elizabeth Schultheis, Tomomi Suwa, Michael Kuczynski, Tyler Bassett, Jenny Dauer, Cara Krieg, Dustin Kincaid, Jake Nalley, Sara Garnett

WMU Evaluation Staff: Bob Ruhf +1