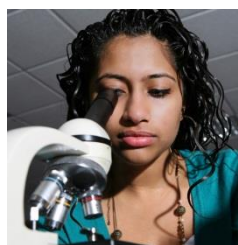




PROGRAM AGENDA

NATIONAL STEM TEACHERS WORKSHOP

Bioenergy and Bioproducts Education 2015



JULY 27-30, 2015
339 DANIEL ZENKER DR.
HORSEHEADS, NY



WINGS of EAGLES
DISCOVERY CENTER
www.WINGSOFEAGLES.com

This project is supported by Agriculture and Food
Research Initiative Competitive Grant no. 2011-67009-30055
from the United States Department of Agriculture (USDA)
National Institute of Food and Agriculture (NIFA)

**2015 National Workshop: Bioenergy and Bioproducts Education Programs
Professional Development for STEM Educators
Wings of Eagles Discovery Center, Horseheads, NY
July 27-30, 2015**

Program Agenda

Monday, July 27, 2015: 3:00 – 8:00 pm: Lodging is provided at the Holiday Inn Express in Horseheads, NY. A shuttle bus will be provided at scheduled times to and from the (Wings of Eagles Discovery Center).

HOLIDAY INN EXPRESS, HORSEHEADS, NY

3:00 Meet and greet with beverages (Poolside or Room off hotel lobby): Holiday Inn Express, Horseheads, NY

4:00 Shuttle Bus to Wings of Eagles Discovery Center (WEDC) – Hotel Lobby (Holiday Inn Express)

WINGS OF EAGLES DISCOVERY CENTER, 339 DANIEL ZENKER DR., HORSEHEADS, NY

4:05 Hors d'oeuvres, dinner and beverages with cash bar at Wings of Eagles Discovery Center

4:15 Check in and Registration - Wings of Eagles Discovery Center entrance

5:00 WELCOME – *Corinne Johnson Rutzke, Ph.D.*, Director, National Bioenergy & Bioproducts Education Programs (NBBEP) ; *Michael S. Hall*, President and Chief Executive Officer, Wings of Eagles Discovery Center

Overview of the Expo – Amy Fovargue, Program Manager, Ohio State University OBIC Bioproduct Innovation Center

5:15 – 5:35 Bioeconomy Presentation: *Melissa Jacobsen, Ecovative Design*, Introduced by *Zywia Wojnar*, BBEP Program Manager and Site Director, Wings of Eagles Discovery Center

5:35-8:00 Bioeconomy Expo – a sampling of resources for Educators – Amy Fovargue

- Tours Wings of Eagles Discovery Center (5:45 every 15 min.) – *Ed Knitter, Ed Flesch, Dave Ames, Lynda Ames*, Wings Staff
- Science on a Sphere - (5:45, 6:15, 6:45, 7:15) – *Nicole Burt, Physical Science and Biology Teacher, Elmira City Schools*
- Buildings, Industry, Transportation, Electricity Scenarios (BITES) – Greenhouse Gas (GHG) emissions reductions and how they relate to the energy sector – a software demonstration - *Abhijit Nagchaudhuri, Ph.D.*, Professor of Engineering and BBEP Site Director, University of Maryland Eastern Shore (5:45, 6:15, 6:45)
- Martian Driving Licenses – *Alison Mandel*, Director of Education, Wings of Eagles Discovery Center
- Flight Simulator – *Dave Harkness*, Wings Staff
- Biodiesel Display – *Paul Heasley*, Agriculture Science Teacher, State College Area School District, Pennsylvania
- Bio-based Forest Products - *Xinfeng Xie, Ph.D.*, Forestry and Natural Resources, West Virginia University
- Race to the Pump - *Mary Wrege*, Agriculture Bioenergy, Bioproducts and Renewable Energy Educator, Cornell Cooperative Extension Oneida County; and *Dom Fantacone*, Master Teacher Program Coordinator, SUNY Cortland
- BBEP Alumni Presentations (2011-2014) - *Amy Fovargue*, OBIC, OSU
- Bio-Preferred Products by OBIC OSU Sustainable World Tour - *Caitlin Conrad*, OBIC, OSU
- Energy Bike - *Charles Malone*, Sr. Extension Educator , Cornell University Cooperative Extension, Genesee County
- Biomass Cooking –Heat Charging Station – *Charles Malone*, Cornell Cooperative Extension Genesee County
- Biofuels: From Seed to Fuels (20 minute intervals) – *Corinne Rutzke, Ph.D.*, Wings of Eagles Discover Center
- Mushroom Packaging and Products – *Melissa Jacobsen*, Director of Communications, Ecovative Design
- Green Careers in the Bioeconomy, Video Produced by BBEP

8:00 Shuttle Bus to Hotel

2015 National Workshop: Bioenergy and Bioproducts Education
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Tuesday, July 28, 2015

7:30 Shuttle Bus to WEDC - Meet in Hotel Lobby

WINGS OF EAGLES DISCOVERY CENTER, 339 DANIEL ZENKER DR., HORSEHEADS, NY

7:35-8:15 Breakfast and registration

8:15-8:30 Welcome and Introductions

Corinne Rutzke: Overview of the Week, Expectations and Deliverables

Mike Hall: Welcome to Wings of Eagles Discovery Center and Chemung County

BBEP Topics Session 1 *Madhumi Mitra, Ph.D.*, Professor, Biological and Environmental Sciences, and BBEP Site Director, University of Maryland Eastern Shore -- Moderator and Organizer

8:30-8:45 Integrating what you learn this week into a lesson plan framework, *Nirav Patel, Ph.D. Candidate*, Department of Natural Resources, Cornell University

8:45-9:15 Mining ChoCOALate , an interactive exercise on “thinking globally” about energy resources -- *Charles Malone*, Cornell Cooperative Extension Genesee County

9:15-9:45 Sustainability, *Nirav Patel*, Cornell University

9:45-10:00 Q&A, Discussion

10:00-10:15 Break

BBEP Topics Session 2 *Zywia Wojnar*, Wings of Eagles Discovery Center -- Moderator and Organizer

10:15-10:45 Bioeconomy, *Dennis Hall*, Director, OBIC Bioproducts Innovation Center, The Ohio State University

10:45 – 11:00 Q&A

11:00 -- 11:15 How I teach it in my classroom: *Andrea Harpen*, Teacher, Blanchester High School and BBEP Alumna, Columbus, OH

11:15 – 11:20 Discussion

BBEP Topic Session 3 *Xinfeng Xie, Ph.D.*, Post Doctoral Fellow, and BBEP Project Team, West Virginia University – Moderator and Organizer

11:20 - 11:50 Biomass, *Mark Eisenbies, Ph.D.*, Environmental Researcher, State University of New York, College of Environmental Science and Forestry (ESF)

11:50 - 12:00 Q&A

12:00 - 12:15 How I teach it in my classroom: *Dom Fantacone*, SUNY Cortland

12:15 - 12:30 Discussion

2015 National Workshop: Bioenergy and Bioproducts Education
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Tuesday, July 28 Continued:

LUNCH PROGRAM

12:30-1:15 Guest Lunch Speaker: *Joseph Sempolinski*, District Director for Congressman Tom Reed; Introduced by *Mike Hall*, President and CEO, Wings of Eagles Discovery Center

BBEP Topics Session 4 *Mingxin Guo, Ph.D.*, Professor, Soil and Water Sciences, Delaware State University -- Moderator and Organizer

1:15-2:15 Bioproducts Suite-Rotations: OBIC staff

2:15-2:45 Conversion of Biomass to Products, *Donna Gibson, Ph.D.*, Research Leader and Plant Physiologist, USDA/ARS and Cornell University

2:45-3:00 **How I teach it in my classroom:** *Rachel Sanders*, Science Instructor, Global Impact STEM Academy, and BBEP Alumna, Springfield, OH

3:00-3:15 Break

3:15 – 4:00 Integration planning with assigned team members (assigned at registration)

BBEP Topics Session 5 *Abhijit Nagchaudhuri, Ph.D.*, University of Maryland Eastern Shore - Moderator and Organizer

4:00 – 4:30 Systems Thinking, *Lindsay Anderson, Ph.D.*, Assistant Professor, Biological and Environmental Engineering, Cornell University

4:30 – 4:45 Q&A

5:00 Shuttle Bus to Hotel

HOLIDAY INN EXPRESS, HORSEHEADS, NY

5:05-6:15 Hors d'oeuvres and beverages with cash bar - Holiday Inn Express, Horseheads - Poolside or room off hotel lobby

6:15 Shuttle Bus to WEDC – Meet in Hotel Lobby

WINGS OF EAGLES DISCOVERY CENTER, 339 DANIEL ZENKER DR., HORSEHEADS, NY

DINNER PROGRAM: *Corinne Rutzke, Ph.D.* -- Moderator and Organizer

6:30 – 8:15 Dinner Program begins at 7:15

Jean B. Hunter, Ph.D., Associate Professor, Biological and Environmental Engineering, Cornell University,
"FOOD IN SPACE"

8:30 Shuttle Bus to Hotel

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Wednesday, July 29, 2015

HOLIDAY INN EXPRESS, HORSEHEADS, NY

7:30 Shuttle Bus to WEDC – Meet in Hotel Lobby

WINGS OF EAGLES DISCOVERY CENTER, 339 DANIEL ZENKER DR., HORSEHEADS, NY

7:35-8:00 Breakfast

Special Session: **Communications**, Moderator and Organizer: *Zywia Wojnar*, Wings of Eagles Discovery Center

8:00 – 10:00 **Integrating Media Literacy and Critical Thinking into Biofuels Education**, *Chris Sperry*, Director of Curriculum and Staff Development, Project Look Sharp, Ithaca College

BBEP Topics Session 6: *Zywia Wojnar*, Wings of Eagles Discovery Center -- **Moderator and Organizer**

10:00 -10:30 **Conversion of Biomass to Energy** – *Tammy Morgan*, Teacher, Lake Placid high School, and BBEP Alumna, Saranac Lake, NY

10:30-10:45 **How I teach it in my classroom:** *Tammy Morgan*, Teacher and BBEP Alumna

10:45-10:50 **Break:** Grab a snack on to next session

BBEP Topics Session 7: *Tiffany Fleming*, Director of Education and Outreach, Boyce Thompson Institute -- **Moderator and Organizer**

10:50-11:05 **Lessons from Thin Air – Web Presentation**, *Mingxin Guo, Ph.D.* Professor, Delaware State University

11:05-11:30 **Biomass to Biofuels:** *Mary Wrege*, Cornell Cooperative Extension, Oneida County, Video

LUNCH PROGRAM: *Corinne Rutzke, Ph.D.*, Director, NBBEP - **Moderator**

11:30-1:00 **Biomass to Jet Fuels:** *Chris Tindal*, Director for Operational Energy, Office of the Deputy Assistant Secretary of the U.S. Navy for Energy (via Skype)

BBEP Topics Session 8: Workshops: Organizers: BBEP Staff and Site Directors

Four Rotations at 12 persons per group (assigned at registration)

- 1) **Biofuel Bumper Crop** – Lab Exercise (*Tiffany Fleming*, and *Becky Sims*, Boyce Thompson Institute)
- 2) **Anaerobic Digestion** – Lab Exercise (*Mingxin Guo, Ph.D.*, Delaware State University)
- 3) **Photobioreactor – Lab Exercise** (*Madhumi Mitra, Ph.D.*, and *Xavier Henry*, University of Maryland Eastern Shore)
- 4) **Policy** – Role-Play Exercise (*Zywia Wojnar* and *Nirav Patel*, Wings of Eagles Discovery Center and Cornell University, respectively)

1:00-2:00 First workshop rotation

2:00-3:00 Second workshop rotation

[Grab a snack on the way to 3rd rotation]

2015 National Workshop: Bioenergy and Bioproducts Education
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Wednesday, July 29 Continued:

- 3:00-4:00** Third Workshop rotation
- 4:00-5:00** Fourth Workshop rotation
- 5:00-5:15** Integration Planning: Gather in pre-assigned groups to review the events of the day

Poster Session: *Tiffany Fleming*, Education Coordinator and *Becky Sims*, Teaching Lab Coordinator, Boyce Thompson Institute-- Organizers

- 5:15-6:30** Curriculum development, idea sharing, networking – Hors d'oeuvres and beverages available with cash bar

BBEP Topics Session 9; *Dave Specca*, Assistant Director, Rutgers University EcoComplex – Organizer

- 6:30** Dinner
- 7:00 -7:20** Dinner Program Speaker: *Dave Specca*, Rutgers EcoComplex,
- 7:20 – 8:15** Dinner Program Speaker: *Kevin Lyons, Ph.D*, Associate Director for Business Development, Rutgers University EcoComplex

8:30 Shuttle Bus to Hotel

Thursday, July 30, 2015

HOLIDAY INN EXPRESS, HORSEHEADS, NY

- 7:00** Check out of hotel
- 7:30** Shuttle Bus/drive own cars to WEDC

WINGS OF EAGLES DISCOVERY CENTER, 339 DANIEL ZENKER DR., HORSEHEADS, NY

- 7:35-8:00** Breakfast
- 8:00 - 9:00** Final Survey and feedback forms; review correct answers (*laptop, tablet, smart phone necessary*)
- 9:00 – 9:15** Retooling Student Engagement with Environment through Empowering Renewable Energy Education, *Nirav Patel*, Cornell University
- 9:15–10:30** Report back by group: Innovation is about Integration

USDA BIG FLATS PLANT MATERIALS CENTER (NATURAL RESOURCES CONSERVATION SERVICE)

- 10:45 – 12:00** Field Trip
 - 10:45** Shuttle Bus to Big Flats Plant Materials Center
 - 11:00** Tour of Big Flats Plant Materials Center, *Shawwna Clark*, Natural Resources Specialist
 - 11:45** Shuttle Bus to WEDC

WINGS OF EAGLES DISCOVERY CENTER, 339 DANIEL ZENKER DR., HORSEHEADS, NY

- 12:00** LUNCH and Adjourn
- 12:45** Shuttle Bus is available back to hotel for those who need it