2017 Student Research Symposium - Description of Focus Group Activities

A menu of focus group activities is presented below. The nature of the activity dictates the maximum number and age of participants. We have provided each school with "tickets" to a variety of activities (but not all), hopefully providing enough variety to give students options that interest them. Teachers should determine who will go to which activity in advance of the symposium using whatever method you want. Provide the students with the enclosed tickets at a time when they will not lose them - the morning of symposium perhaps. *Students need the ticket to get into the activity.* Our goal is to mix students from different schools within grade levels within each activity. It is our hope that after the symposium, students can share and compare with each other what they learned as participants in the different activities.

Augmented Reality Sandbox: Get hands-on with this activity that will teach you about reading topographic maps.
Grade Level: Middle School
Location: Alden Hall Room 001
Facilitators: Camille Sicker & Paul Sutkowski, Allegheny College students
Activity Capacity: 10

Amphibian Science: Spring is mating season for the salamanders in our area. Learn why this is the time to study salamanders and how the populations in our area are doing.
Grade Level: High School
Location: Steffee Hall of Life Sciences B.112
Facilitators: Dr. Wissinger Lab Crew, Allegheny College Students
Activity Capacity: 18

Aquatic Macroinvertebrate ID: You may have already been introduced to macroinvertebrates, but this activity will take it further. Learn identification techniques from the experts.
Grade Level: High School
Location: Carr Hall 221
Facilitators: Dr. Wilson Lab Crew, Allegheny College Students
Activity Capacity: 17

Battlefield Pennsylvania: Some materials we use every day can break down and be used again by nature. Can you tell the difference between actual trash and compostable materials? Take the compost challenge and find out! This activity will show you how worms and other critters break down materials to make compost and how composting can help decrease the need for landfill space. **OUTSIDE! Dress for the weather!**
Grade Level: Middle School
Location: OUTSIDE or Upstairs Blue Court if poor weather
Facilitators: Crawford County Conservation District & Pymatuning State Park
Activity Capacity: 20

Bird Banding: This activity will teach you about how scientists collect and band birds to study them and their population health. Keep your eyes peeled for birds! **OUTSIDE! Dress for the weather!**
Grade Level: High School
Location: OUTSIDE, Meet in Campus Center lobby at ENWR table
Facilitators: Melissa Althouse, Erie National Wildlife Refuge Biologist
Activity Capacity: 20

Boating Safety Challenge: Think you know all there is to know about being safe on the water? Come try out your skills at this challenging activity. You may learn a thing or two from our local water safety experts.
Grade Level: Elementary & Middle School
Location: Wise Center Performance Arena
Facilitators: USACE & PA Fish & Boat Commission
Activity Capacity: 24

Ecosystems Engineers: What has yellow teeth, builds ponds, and is known to be an "ecosystem engineer"? The North American Beaver, of course! In this focus group, we will examine the importance of the beaver in our local watershed, and then become engineers ourselves as we build dams in the way beavers taught us. ***OUTSIDE! Dress for the weather!***
Grade Level: Middle School
Location: Carnegie Hall Room 101
Facilitators: Kala Mahen & Matt Hutchinson, Allegheny College Students
Activity Capacity: 16

Fluvial Hydrogeomorphology: Flu-what? Find out what these two words mean. Find out how streams form and why they move the way they do. And get to see the stream table in the basement of the geology building!
Grade Level: High School
Location: Alden Hall 012 – The Flume Room
Facilitators: Tom Hayden and Sam Reese
Activity Capacity: 16

Geocaching Challenge: Think there's cash in that cache? Come find out. Learn about this worldwide adventure game. **This activity will be partly OUTSIDE! Please dress for the weather!**
Grade Level: Middle School
Location: Alden Hall 210 & OUTSIDE
Facilitators: Johanna Stanley & Levi, Allegheny College Student
Activity Capacity: 30

Gone Batty: Bats are an important part of our local ecosystem. Learn all about them and what you can do to help them out.
Grade Level: High School
Location: Campus Center Room 301/302
Facilitators: Terry Lobdell, Environmental Educator
Activity Capacity: 25

iMapInvasives: We will use the iMapInvasive app to explore which invasives are already in this area and you will learn how to document invasives near you. **This activity will be partly OUTSIDE! Please dress for the weather!**
Grade Level: High School
Location: Campus Center Room 206 and OUTSIDE
Facilitators: Amy Jewett, Western PA Conservancy
Activity Capacity: 15

Mark Recapture: We will be doing estimation of the population of colorful frogs from an exotic land. Students will be introduced to the Peterson/Schnabel method of population size estimation. Students will learn the probability and assumptions behind the mathematics of mark /recapture studies.
Grade Level: High School
Location: Campus Center Room 303
Facilitators: Chris Davis, University of Pittsburgh Pymatuning Laboratory of Ecology
Activity Capacity: 30

Measuring Growth and Value of Trees: We will be measuring the value of trees of campus. This will be done by identifying the species, taking diameter measurements, and measuring the height. We will estimate the value of the tree the same way the foresters do, using a Biltmore Stick. This stick tells us how many boards we can get out of the tree. We will measure growth by looking at tree cores and deciding if all the trees of campus grow at the same rate. **This activity is OUTSIDE! Please dress for the weather!**
Grade Level: High School
Location: Carr Hall Room 220 & OUTSIDE
Facilitators: Dr. Bowden Lab Crew, Allegheny College Students
Activity Capacity: 15

Stream Table: Did you know that streams migrate? Yes! Streams need to be able to move! Find out why water doesn't like to run straight and why movement is important for stream health. YOU can be nature's engineer to find out what works best.
Grade Level: Elementary & Middle School
Location: Campus Center Lobby Balcony
Facilitators: Kristen Currier, Erie County Conservation District
Activity Capacity: 12

Tree ID: Meet Crawford County's Forester and learn how to identify trees. Learn how size may not tell you how old a tree is and how foresters chose which trees should be cut down. **This activity is OUTSIDE! Please dress for the weather!**
Grade Level: Elementary/Middle School
Location: OUTSIDE
Facilitators: Mark Lewis, PA DCNR-Bureau of Forestry
Activity Capacity: 13

Tree Rings Tell a Story: Explore the wild world of trees. You can tell a lot about an area's history by studying its trees. **This activity is OUTSIDE! Please dress for the weather!**
Grade Level: High School
Location: OUTSIDE
Facilitators: Foundation For Sustainable Forestry
Activity Capacity: 16

T-shirt Recycling: Think recycling is just about paper, plastic and metal? Turn fabric scraps or "rags" into "one of a kind" crafts! Come create items you can use at this unique activity.
Grade Level: Middle School
Location: Campus Center Room 318
Facilitators: Kathy Uglow, Crawford County Conservation District
Activity Capacity: 12

Underwater Robotics: Learn how simple remotely operated vehicle (ROV) constructed of PVC pipe, including a propulsion system and tethered controller work. Investigate concepts of buoyancy, submarine design, and ocean exploration. Scientific applications involve biological sampling and water sampling with Sea Perch units.
Grade Level: High School
Location: Meet Mr. Boughton at his display in the Campus Center, Dive basin – Mellon Pool
Facilitators: David Boughton, PA Sea Grant
Activity Capacity: 16

When the Oxygen is Gone: Aquatic animals need dissolved oxygen to survive. When there is not enough dissolved oxygen in the water, the aquatic animals respond in a way that will provide them with enough oxygen. Some fish will attempt to fan more water over their gills. Many factors influence the dissolved oxygen level in water such as temperature. The temperature of water can be changed both by natural and unnatural causes. For example, thermal pollution is an unnatural change in water temperature caused by human actions. Increasing the temperature of water can decrease the dissolved oxygen level of water. Conversely, decreasing the temperature of water can increase the dissolved oxygen level of water. The students will observe how oxygen levels affect behavior in goldfish.
Grade Level: Elementary/Middle School
Location: Steffee Hall of Life Sciences B.108
Facilitators: Bri O'Neil-Hankle, Grace O'Malley, Melissa McCann, Allegheny College Students
Activity Capacity: 20

<u>Wild About Birding:</u> Our region is known for its fabulous birding opportunities. Learn how to see and hear the birds living here and passing through. **This activity is OUTSIDE! Please dress for the weather!**
Grade Level: High School
Location: OUTSIDE Start at Alden Hall 202
Facilitator: Audubon PA
Activity Capacity: 10

<u>Wild Bees of Meadville:</u> Do you know the difference between native and non-native bees in our area? Did you know native bees are an under-studied species? Come learn the importance of native bees and how we can all help them to survive and thrive.
Grade Level: High School
Location: Carr Hall 238
Facilitators: Kaye Moyer, Allegheny College Student
Activity Capacity: 12