



# Connecting Students with Nature: Biology and the BFEC

by Sarah McPeck, '19

## First Time at the BFEC

On their very first day of class, students in the introductory biology lab leave their microscopes and lab benches and traipse down Wiggin Street and across the Kookosing River to the Brown Family Environmental Center. Armed with insect nets and jars, students spread out across the fields, their only instructions to capture a butterfly, moth, or skipper for preservation. They will use these specimens to study diversity on both community and molecular levels. For many students, this is the first time they've ever run around a field chasing butterflies - and for most, it's their first time visiting the BFEC. But for many students, it certainly won't be their last.

## Biology & BFEC: A Natural Partnership

Since the BFEC's founding in 1995, the biology department at Kenyon College has worked in tandem with the Center to connect people to nature. Ray Heithaus, who at that time was Professor of Environmental Science and Biology, along with several other biology faculty, were leaders in the efforts to conserve the BFEC property and design the diverse ecosystems it supports. Professor Heithaus was Executive Director of the BFEC for its first 8 years, and remained actively involved as an advisor for another 12 years. He and others in the biology department envisioned a living laboratory where students could experience nature first-hand from both scientific and

personal perspectives, where natural spaces are woven into the landscape of the college. Stretching almost 500 acres around the west and southern ends of campus, the BFEC offers a diverse natural world just a quick hop down the hill or up the road to a trailhead. Its proximity affords a unique opportunity to incorporate firsthand observations and fieldwork into a holistic biology education.

While the ecological side of the biology department is the most immersed in all the BFEC has to give, Dr. Drew Kerkhoff, department chair and professor of ecology, insists that "There's something at the BFEC for every class we teach!" This is why most biology students, whether a molecular biochemist or a wetland ecologist, begin their Kenyon biology training at the BFEC, where they learn to study connections in nature.

With a major focusing on ecological and evolutionary field biology, I spend as much time at the BFEC for my classwork as I do in the lecture rooms of Higley Hall. Both my ecophysiology and animal behavior labs meet whenever possible at the Resource Center or the Outdoor Classroom next to the BFEC house and we rarely stay put for long, moving our studies into the prairie or ponds or down to the river's edge. Sometimes we wade through the middle of the prairie grasses after soldier beetles, and other times we stay close to the birdfeeders next to the Center and wait for sparrows and finches to fly into our mist nets.

As a behavioral ecologist, Dr. Robert Mauck sees the BFEC as an invaluable

resource for teaching animal behavior in the wild. It's one thing to study specific behaviors in a confined laboratory setting under artificial conditions, but it's quite another to observe an animal's behavior in the field with all the complexity and chaos of its natural environment. He commissioned the building of the aviary next to the BFEC barn so he could combine field and laboratory studies for close observation and behavioral experimentation with local bird populations. Students in his classes, as well as Dr. Elizabeth Schultz's ecophysiology classes, use these spaces and equipment to investigate all kinds of questions pertaining to how birds interact with their environment, from their foraging and social behaviors to their hormonal and immune health.

One huge asset of the BFEC as an ecological site is its diversity of environments in a condensed space. In his ecology lab, Dr. Kerkhoff's students measure how different forest types at the BFEC affect the



A student in one of Dr. Robert Mauck's classes, taking measurements on an Eastern Bluebird.



flow and sequestration of carbon in soils. Each year, by taking soil samples and tree measurements from the Pine Plantation, the sycamore grove on the River Trail, and the mixed deciduous forest of the Fern Trail, students learn how carbon cycles through the environment and the diverse roles different forests play in that cycling. Some of the data collected from these experiments over the years are helping to inform the college's Carbon Neutrality plan to reduce carbon emissions by providing information about the carbon offsets provided by the surrounding BFEC forests.

### Other Academic Studies at the BFEC

Dr. Kerkhoff thinks the biology department has played a strong role as an ambassador for the rest of the college by raising awareness among the student body about the BFEC's many assets and by promoting collaborations with other departments.

In addition to biology, departments that take advantage of the BFEC's natural resources include sociology, art, dance, and more. Chemistry classes gather mushrooms for chemical experiments, anthropology courses examine how the local community is shaped by the Kookosing watershed, geology students dig for interesting rocks along its banks, and creative writing and art classes wander



*Students in Dr. Siobhan Fennessy & Professor Marcel Hackbardt's Botany and Botanical Art class, 2012.*

the fields with notebooks and brushes seeking inspiration from nature.

### A Complex Mosaic Landscape

Unlike nature areas that aim to preserve a safe haven free from any human influence, the BFEC properties incorporate natural and human landscapes. Dr. Kerkhoff describes the lands as a complex mosaic which serves as a microcosm of the larger local environment. Dr. Chris Bickford, professor of plant physiology, is interested in agroecology, studying how agricultural lands form a new type of ecosystem through the synergy of land

management by people and natural interactions between living things in the environment. He values how the BFEC connects people with nature and integrates us as an important part of the natural environment as opposed to being mere observers and beneficiaries of its resources. The BFEC is an excellent study in how human-managed restorations like the forests and prairies planted from the remains of old agricultural fields transition to natural, self-sustaining ecosystems, and how humans can work to influence and shape their success.

### Discovery and Inspiration

Biology and English double major Mia Fox '19 fell in love with the BFEC last semester during her ecology course, and she now works as a teaching assistant for Professor Kerkhoff's ecology lab class. "Every time I come [to the BFEC] I always discover new things!"

Holding classes at the BFEC encourages, and in some cases, forces students to interact with nature and she feels that "as natural scientists, it behooves us to look at our natural surroundings."

Through the BFEC, students of biology gain not only an intimate knowledge of the diverse habitats and the wildlife found there, but also the skills to be a successful, thoughtful scientist through careful natural history observation and personal interaction with wildlife. Students approach their studies in the field with an open-minded curiosity and leave each day with a deeper appreciation for the natural world, not to mention fun stories to tell their classmates about measuring mating beetles or holding feisty chickadees. These stories may even inspire return trips outside of class time, for homework, yes, but also to enjoy Kenyon's greatest natural resource.

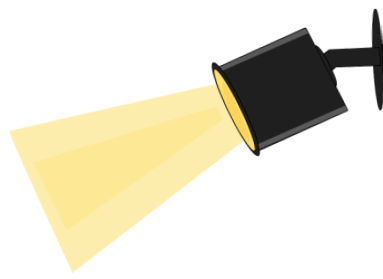
*Sarah McPeck is a junior biology major from Hanover, New Hampshire and a BFEC student manager. After Kenyon, she hopes to combine her passions for scientific inquiry and nature writing to improve public awareness, understanding and appreciation for the beauty and complexity of the natural world.*



*Students in one of Dr. Bruce Hardy's anthropology classes, building a shelter.*

# VOLUNTEER SPOTLIGHT

by Noelle Jordan



Erin Keleske, class of 2018, has been involved at the BFEC since she arrived at Kenyon as a first year. Acting as both employee and volunteer, she has been involved in many different aspects of what we do. Last year alone, she volunteered over 30 hours for the BFEC. Erin is one of those rock star students who seems to be able to do it all! During a recent interview with her, here's what she had to say....

**Q: How have you been involved at the BFEC?**

I started out as a field trip leader my freshman year and later got more involved in working all of the fun events throughout the year. I then spent my sophomore year living in the BFEC house as one of the Student Managers. After that, I started doing volunteer work to socialize the BFEC rat snakes and bring them to different animal education programs.

**Q: How many years have you been involved at BFEC?**

This is my senior year, so I'm starting my 4th year! Volunteering at the BFEC was the very first thing I signed up for at the Activities Fair when I was a first year, and I've not stopped since!

**Q: Why did you want to be involved with the BFEC?**

When I was little, I used to go on field trips to the Riverbend Nature Center in Racine, Wisconsin. Looking back, I consider those field trips as one of the major defining factors of my childhood. It led me to pursue a career in environmental and conservation work and it led me to a lifetime of playing around in the woods. Riverbend was a lot like the BFEC. I volunteer because I want to give other children the experience and the opportunities that I had.

**Q: Have you learned any new skills volunteering at the BFEC?**

Volunteering has taught me how to communicate big ideas to anyone. Whether I'm trying to explain some major ecological phenomenon in language accessible to a five year old or helping an adult finally find an answer to a question they've always wondered about the woods, I feel confident that I can help them engage with the topic.

**Q: Do you have a favorite BFEC story?**

One of my favorite nights at the BFEC was my sophomore year when I led a night-hike with my co-manager, Addison Wagner, to see the Supermoon. Sixty people showed up. It might have been the loudest parade of hikers the BFEC had ever seen and it was too cloudy to even see the moon, but everyone was so excited that it made it a ton of fun.

**Q: What do you have time to do when you're not at the BFEC?**

When I'm not at the BFEC, I'm most likely doing school work. Fortunately, I like the topics I study. I'm currently conducting biology research on paleoclimate modeling in Professor Drew Kerkhoff's macroecology lab. This has been a lot of fun. I also spend a lot of time on sustainability initiatives and I love doing community service other places as well. My spare time is typically reserved for baking with friends, exploring downtown Mount Vernon, and petting every dog, cat, and snake I can find.

**Q: Tell us a bit about your background.**

I'm a first generation college student from Wisconsin. I first got heavily involved in conservation and environmental work when I got to Kenyon. Outside of the BFEC, I've been fortunate enough

to work in the conservation education department of a zoo, the land conservation department of my home county, and in the Office of Green Initiatives with Dave Heithaus.

**Q: Are you reading anything for fun right now? If so, what?**

I'm currently reading "The Emerald Planet" by David Beerling. It's about the ways plants have shaped our entire planet through time. (Technically it's for my Senior Biology Honors Thesis but I think it still qualifies as "fun.")

**Q: What else would you like to share with everyone?**

The BFEC was one of the reasons I decided to come to Kenyon and I'm so happy that I got to be so deeply involved with it through my time in Gambier!



**If you would like to BECOME A VOLUNTEER call Noelle at 740-427-5052. There are many ways to get involved.**





# The Green Corner

*News from the  
Office of Green Initiatives*

*by David Heithaus,  
Director of Green Initiatives*

The semester is off to the races and, following a brief period of being dragged behind it, the OGI has executed an Indiana Jones-style whip crawl and we're climbing back towards the steering wheel and some semblance of control. In keeping with the theme of the film, our Nazis are the slightly less corporeal "locating responsible funding mechanisms" and "entrenched behaviors" but we're still going to kick them out of the cab, over a cliff and steer this truck of state towards a greener future.

Here are a few things that are happening:

- ◆ The OGI team has expanded to 8 of Kenyon's finest and they are already promoting carbon-neutral online transactions through U-Capture, a ride-share program, composting and recycling efforts and community outreach.
- ◆ Environmental Studies is officially a major and the OGI, together with the Kenyon Farm, the BFEC, the Philander Chase Conservancy and the Kokosing Nature Preserve are ready to step up and support this exciting new program.
- ◆ The Solar Power class is entering its third year with an eye for installing our third photovoltaic (PV) solar system on the new Village Market.
- ◆ Several proposals for large-scale renewable energy projects are being considered this fall. Both PV systems and solar thermal systems are on the table with the latter being both more promising and more fleshed out. Savings generated by these projects could theoretically be used to jump start a Green Revolving Fund dedicated to future campus efficiency enhancements.
- ◆ Finally, we are entering the final phases of developing our Climate Action Plan: *Own Your Footprint, Own Your Future*. By February, it is my hope that when queried about target dates my answer will no longer be "before the death of the sun."

**Stay Green!**

## The Rusty patched Bumble Bee: Endangered Species

*by Noelle Jordan*

In March of this year, the U.S. Fish and Wildlife Service listed the Rusty patched Bumble Bee (*Bombus affinis*) as an endangered species. In response, the Ohio Bumble Bee Survey Team launched an effort this summer to survey bumble bee species in Ohio in hopes of documenting a Rusty patched Bumble Bee. The Survey Team is headed up by Randy Mitchell of University of Akron and Karen Goodell of Ohio State University.

We're still waiting for the final results of the survey, but Dr. Goodell is not hopeful about finding the Rusty patched Bumble Bee in Ohio. "We don't know whether it's gone extinct in Ohio or just dropped to a very low population density," she reported to the Toledo Blade in August.

At one time, the range of the Rusty patched Bumble Bee extended throughout northeast U.S. reaching as far south as Georgia and as far west as North Dakota. However, that range is now drastically reduced. The Xerxes Society reports citizen sightings since 2012 concentrated only in Minnesota, Wisconsin and Illinois.

The Rusty patched Bumble Bee, like all bumble bees, is a generalist pollinator. Thanks to bumble bees, we enjoy crops like blueberries, cranberries, plums, and tomatoes. Many bumble bees have long tongues that allow them to pollinate flowers with a long, tubular corolla and unlike honey bees, bumble bees can "buzz pollinate."

Buzz pollination is a technique used by bumble bees to release pollen from certain flowers. Some plant species have evolved to be conservative with pollen because it takes a lot of energy to produce it. The flowers of these plants have anthers with very tightly packed pollen. Bumble bees contract their flight muscles, producing strong vibrations that release the pollen from the anthers. Tomatoes are great examples of these types of plants.

If you want to join the hunt for the Rusty patched Bumble Bee, keep your eyes open and submit your observations and photos to one of these websites:

- ◆ <https://www.bumblebeewatch.org/>
- ◆ <https://www.inaturalist.org/projects/ohio-bee-atlas>



# Into Green Ohio

by Kira Lancz, '21

This August, I arrived at Kenyon for the first time. I knew very little about my new home - the campus and Ohio in general. My friends back home mocked me for moving into the middle of the cornfields, but it took only half of the ride from the airport to decide that the “middle of the cornfields” is actually a magical place.

I have always lived in cities: a lively town back in Hungary, and later a “small” Chinese city of two million people. It was in China over the past two years, that I got used to looking around and seeing only the gray, angular lines of a concrete jungle. Now, taking in the Ohio landscape feels like taking a deep breath of fresh air. The green waves of the hills, the tree lines with their thousand different colors, and the never-ending open spaces fill me with a sense of peace and cleanliness.

In three short weeks, I caught myself falling for the charms of the Kenyon campus and central Ohio, and for the “wild” animals running around my new home - the squirrels that chase each other from branch to branch as I walk to my

classes, the raccoons that check out my shoes at the North Campus Apartments, and even the skunks as they patrol around McBride Residence Hall at night (of course, I only appreciate them from a distance).

In addition to the interesting critters and pleasing aesthetics, having such easy access to nature has many other benefits. Proximity to nature and green areas has been found to have a strong positive correlation to attention and cognitive functions, as well as mental health and well-being. Next time you feel like you have read that page for the fifth time, and it still makes no sense, consider some alone-time with green instead of that second cup of coffee.

If you have an hour to spare, the Brown Family Environmental Center is your best option for nearby green space. It is an easy ten minute walk to the bridge over the Kokosing, and the trails by the river offer a quiet, beautiful place to relax. Walking into the newly created labyrinth is also a great setting for some personal reflection (but be prepared - the trail to the center is half a mile long!).

I know I plan to run off to nearby nature during my study breaks. Hopefully, I will see you there!

*Kira is originally from Hungary, and spent the last two years of high school in China at the United World College of Changshu China. Kenyon is a popular choice for college among UWC students worldwide, and Kira is happy to have listened to her friends' recommendations. She plans to double major in Environmental Studies and English. Kira recently started working with the OGI as an intern, and is excited to take part in making Kenyon even greener.*



*BFEC Labyrinth from google maps*

## Echoes of Summer

by Dr. Rebecca Abbott

This past summer, a program called “Nature’s Music” met for seven sessions from July 6 to 25. This program, designed for families, was presented to a core group of four guardians and seven children from babies to age nine, with occasional guests. Participants explored the rhythms and music of nature with a summer Musikgarten curriculum.

After spreading gym mats on the floor, we moved and tumbled in response to musical prompts. We also used simple instruments like sand blocks and scarves to imitate sounds and represent move-

ments of insects and small creatures.

The BFEC was an ideal setting for this curriculum, offering real-life examples of creatures within the center and just outside the window. We sang “Here Comes a Bluebird” and wove in and out of a circle after looking at a poster of a bluebird, hearing a bird call, and watching actual birds at the feeder; we sang about slithery creatures after looking at the turtles and snakes in the lab. The joy on the children’s faces and in their bodies was so clear that the adults often laughed when they saw it.

I served as the primary teacher, with assistance from two teenagers, Meagan Abbott (no relation) and Apolline Besse, a visiting student from France. This was the second year “Nature’s Music” was offered at the BFEC, the first year being the summer of 2015.

*Dr. Rebecca Abbott is an accompanist in Kenyon’s music department and owns Abbott Music Lab, LLC, creating custom compositions and educational opportunities for all ages.*

# Programs & Events

*All programs and events are free and open to the public unless stated otherwise.*  
9781 Laymon Road, Gambier Ohio | 740-427-5052 | [jordan2@kenyon.edu](mailto:jordan2@kenyon.edu) | <http://bfec.kenyon.edu>

## **Plein Air Painters — every Wednesday until it snows, 5-8pm**

Meet at the BFEC Picnic Pavilion. Paint, draw, or sketch at the BFEC! Bring your supplies, including a chair and/or easel, and spend the evening hours painting in a peaceful setting. The Resource Center will be open for restrooms.

## **Knox County Nature Photography Contest - Submit your photos NOW!**

Submit your photo entries for the 20<sup>th</sup> Annual Knox County Nature Photography Contest! Deadline to enter is October 6<sup>th</sup>. The Resource Center is open Monday through Friday, 8am to 4pm. Entries will be displayed at the Fall Harvest Festival on October 14. Details at [bfec.kenyon.edu](http://bfec.kenyon.edu).

## **Fall Harvest Festival - October 14, 2-5pm**

This **FREE** family event includes hayrides, live music, children's activities, farm animals, campfire, cider press, pumpkin decorating, the Knox County Nature Photography Contest show, and so much more! Join us!

## **Bird Walk - October 21, 9-10am**

Meet at the BFEC Resource Center. Join Professor Tim Shutt to commune with the birds! Learn to use visual field marks and songs to identify our feathered friends.

## **Habitat at Home: Build a Bat House - October 26, 6:00 - 7:30pm**

Meet at the BFEC Resource Center. Learn about the importance of bats in our environment, and then build your very own bat house! To play your part in protecting Ohio's bat community, you'll be able to take your box home and set it up. **FREE.** Space is limited! **Call now to register 740-427-5052 or email [jordan2@kenyon.edu](mailto:jordan2@kenyon.edu).**

## **The Future of Bobcats in East-Central Ohio - November 11, 2-3pm**

Meet at the BFEC Resource Center. The bobcat is an ecologically important top-predator native to Ohio. As a result of habitat loss and over-hunting, it was one of the first species listed as endangered in Ohio. By 2014, their numbers had increased enough to be removed from the state listing. Dr. Shauna Weyrauch of The Ohio State University at Newark will discuss the findings of "Project Wild Coshocton," a study of the bobcat population in Coshocton and southern Holmes counties. **FREE.**

## **Family Fun Day - November 25, 1-4pm**

Meet at the BFEC Resource Center. Enjoy a fun afternoon at the BFEC with the whole family. Take a short nature hike, jump in on a nature investigation, create something crafty using natural materials, and more! **FREE.**

## **The Night Sky - December 8, 7-8pm**

Meet at the BFEC Farmhouse. Admire the season's constellations as you listen to Professor Tim Shutt tell mythological stories about the stars. Weather permitting; will be cancelled if it's too cloudy. Call the BFEC for program status.

## **Holiday Wreath Workshop - December 16, 1-4pm**

Meet at the BFEC Resource Center. Relax and celebrate the season while you create your very own holiday wreath. All materials will be provided. **Space is limited - call now to save your seat. Call 740-427-5052 or email [jordan2@kenyon.edu](mailto:jordan2@kenyon.edu) to register. Materials fee for Members \$20, Non-members \$25.**

## **Christmas Bird Count - December 17, 7am-4pm**

The Christmas Bird Count is a national initiative that has been going on for over 100 years. Be a part of it! Help us count birds in Mt. Vernon, Gambier, Apple Valley, and Fredericktown. Volunteers are needed at home feeders, and in the field along roads and trails. **You don't have to count the entire day.** Lunch provided at noon at the BFEC for all participants. **Call 740-427-5052 or email [jordan2@kenyon.edu](mailto:jordan2@kenyon.edu) to register.**

# Thank You

## Members ~ July, August, September

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2016 Photo Contest, Adult Division, 1st Place  
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## Volunteers ~ in the garden, on the land, in the office, and with programming

*\*In the Garden:* Betsy Billiter, Terri Heironimus, Drew Kerkhoff

*\*In the Office:* Diane Mack, Audrey Neubauer, Bronwyn Mroczkowski

*\*On the Trails:* Kenyon Land Lords, Pat Corbin

*\*Public Programs:* Eric Holdener, Matt Baugher, Maddie Moss, Ben Miller

*\*Field Trip Volunteers:* 25 students plus community members Brian Miller

and Estelle Parker have trained to lead field trips this fall.

*\*Bluebird Monitors:* Our 35 bluebird boxes were monitored by 4 volunteers this summer - Brian Miller, Sarah Goslee-Reed, Keith Kitchen, and Keith Robinson.

*\*Unpaid Summer Interns:* These hard-working college and high school students worked in the garden, on the trails, and led programs for us this summer: Maddie Moss from Muskingham College, Jacob Essenmacher from Ohio State Universi-

ty, Matt Baugher from Ohio State University, Ben Miller from East Knox High School, and Logan Meyer from Mt. Vernon High School.

*\*Program Support:* Kathy Dean

**Invest NOW! Help us with our mission of conservation and education.**

**Use the enclosed envelope or donate online at [support-bfec.kenyon.edu](http://support-bfec.kenyon.edu).**

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Your donation is tax deductible as allowed by law. The Brown Family Environmental Center at Kenyon College is a 501(c)(3) nonprofit organization.





**Brown Family  
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*at Kenyon College*

9781 Laymon Road, Gambier, Ohio 43022  
(740) 427-5050 ~ <http://bfec.kenyon.edu>

*Our Staff*

Jill Kerkhoff, Facilities & Volunteer Coord.  
Shane McGuire, Land Manager Naturalist  
Noelle Jordan, Manager

To conserve natural diversity and connect people to nature.

## *Upcoming Programs & Events*

Nature Photography Contest

**October 6 - deadline to enter**

Fall Harvest Festival

**October 14** | Resource Center | 2-5pm

Bobcats in Ohio

**November 11** | Resource Center | 2-3pm

Make a Holiday Wreath

**December 16** | Resource Center | 1-4pm

P.O. Box 508, Gambier, Ohio 43022

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