



MOUNTAIN LAKE ECHOES

MOUNTAIN LAKE BIOLOGICAL STATION

UNIVERSITY of VIRGINIA

Fall 2013, vol.9

Artist Colony 2013

Eric Nagy and Megan Marlatt

ArtLab, Mountain Lake's three-year-old program integrating science and art, took an unexpected turn this summer. After Megan Marlatt's (UVA Dept. of Art) regular drawing class had to be cancelled it was decided to supplement the planned Artist-in-Residence program, featuring Ana Golici, with a small collective of additional artists.

Megan was excited by the notion that the field station could also be an artist colony. She was right.

Field stations and artist colonies both contain and nurture groups of creative individuals inquiring into the workings of the universe - asking "why?" or perhaps "why not?" and "how does this work?" Artists, like scientists in this setting, confer

with one another and draw inspiration from the insights of those around them.

The artist colony experiment was a huge success. Over 4 weeks, 14 visual artists from as far away as Australia set up shop at the Station, and were immediately at home in the communal synergy of working professionals driven by a purpose.

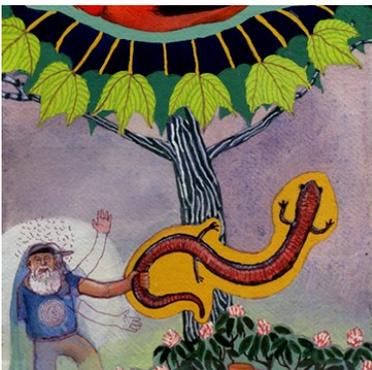
During our Open House for the local community, ArtLab exhibits were one of the most popular stops.

The 2013 ArtLab collective brought tangible and permanent impacts to MLBS in the form of installations



Stick installation, Annabel Nowlan

on the lawn, donated works of art hanging in the dining hall and Lewis Hall, and lasting human impacts. ArtLab is an evolving program surviving on an uncertain and fledgling budget. But the Station certainly hopes to host a group like this again soon. ♦



"The Wilbur Muse," Megan Marlatt



Insect wing exploration, Ana Golici

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From the Director

Butch Brodie

With the high season behind us, we can finally whisper what many people were afraid to think – “no major catastrophes this year.” After the last few years of epic storms, water supply issues and the like, we were all waiting for the other shoe to drop in 2013. Instead, we had a year with seemingly incessant rain, but no systemic problems of the kind that had come to be expected as par for the course. The rains have helped to refill Mountain Lake, and the erosion sediment that was plaguing the Lake through most of the summer has begun to settle out. The water is already up to the low-water boat dock and seems to be rising noticeably every few weeks.

One of the highlights of my summer was the NSF Writing and Mentoring workshop that we hosted in August, organized by Heather Bleakley of Stonehill College. We welcomed roughly 35 postdocs and early stage faculty from a huge diversity of institutions around the country to spend a few days talking with mentors about writing and publication strategies, professional trajectories, and the tenure



Umbrellas at Lewis Hall

process. I felt like the Station made a number of great new friends and that we were able to offer some genuinely useful insights into processes that are often opaque to the people who need the information the most. Initial reports from participants suggest it was a huge hit, and hopefully we'll find a way to support similar activities again soon.

In September, UVa President Sullivan visited the Station for the first time in her tenure. Unfortunately, her schedule prevented her from visiting during the active season, but she was kind enough to leverage a few hours out of time at a conference in Blacksburg to get a tour of Salt Pond Mountain. She is a great supporter of field stations and is quite familiar with the kinds of programs and experiences that we offer. It was

a thrill to get to show off the great work that Tom Mc Namara and Jaime Jones have done over the last year, and she left most impressed. ♦

Student Corner

Melissa Wender

Several of Katie O'Donnell's professors at James Madison University suggested MLBS as an excellent place for her to finish her undergraduate degree. “I applied to take Wildlife Disease Ecology to broaden my perspective and gain field skills. On the first day the class collected bugs and dissected them and looked for parasites. It was like a scavenger hunt, only it was not hard to find the bugs or the parasites; I thought it would be harder.”

Katie also enjoyed spending a morning in the field processing data on small

mammals: blood samples, weight, ectoparasites, species, sex. “Field trapping of mice is really cool.”

For her independent research project, a component of most MLBS classes, she looked at immune defense in crayfish and how fighting for food can affect immune response. She extracted hemolymph and counted cells before and after fighting to see if there was an increase in hemocytes. Hemocytes are the crayfish equivalent of white blood cells and their presence indicates stress or injury. “Getting the hemolymph is a two person

job and people from both classes (Wildlife and Behavioral Endocrinology) were willing to help.”

Katie's crayfish were released back into Sinking Creek. This fall she hopes to find work in the field of conservation biology ♦



Left to right: Albert Chung, Robbie Richards, Alex Edwards, Chloe Pendlebury, Jake Seidenberg, Katie O'Donnell, Ryan Avery.

REU Spotlight

Melissa Wender

Glancing at a photo of crayfish in a spare classroom, 2013 REUs Laurel Sacco, Alison Post and Brianna Bero-Buell began identifying ones they had seen and commenting on their morphology. Their excitement about science was palpable.

Brianna, who works with chameleons at Arizona State, worked on a mark-recapture project studying movement patterns in pregnant and non-pregnant garter snakes. Laurel, University of Maine, examined the toxicity and defense mechanisms of eastern spotted newts and juvenile red efts. Alison, who works in the greenhouse at the University of Maryland, studied the American Bellflower and why populations at varying elevations have different rates of self-pollination.

Laurel’s morning started out with a trial on stimulating newt anti-predator behavior. “When threatened they lift their tails and form their bodies into a circle.” Originally she tried to stimulate this using live snakes as the threat, but the newts did not respond, perhaps because in the east, newts account for only 2% of the garter snake diet. So Laurel found herself imitating a bird attack using a forceps to lift and drop the newts. She said, “Studies indicate that newts and efts don’t differ in toxicity, but this may not be true. They

may develop it over time perhaps in relation to bacteria, but then maybe lose it again as well.” Laurel used the afternoon to change out leaf litter for the newts.

Alison finds plants and their ability to change sex very interesting. Her project was part of a study looking at the evolution of mating systems and cross pollination. “When the North American glaciers retreated, they allowed the bellflower to expand northward; the plant lost genetic diversity and a new mating system evolved.” Her field tools were a shovel and a bucket to collect plants from the native population to study in the greenhouse. While she was waiting for the flowers to bloom she explored ways

to gingerly harvest the style of a flower without disturbing the pollen. She used a fluorescent stain to differentiate viable and non-viable pollen and analyze



Red eft displaying defensive posture

how viability decays over time. Limiting pollen availability is one way plants reduce self-pollination.

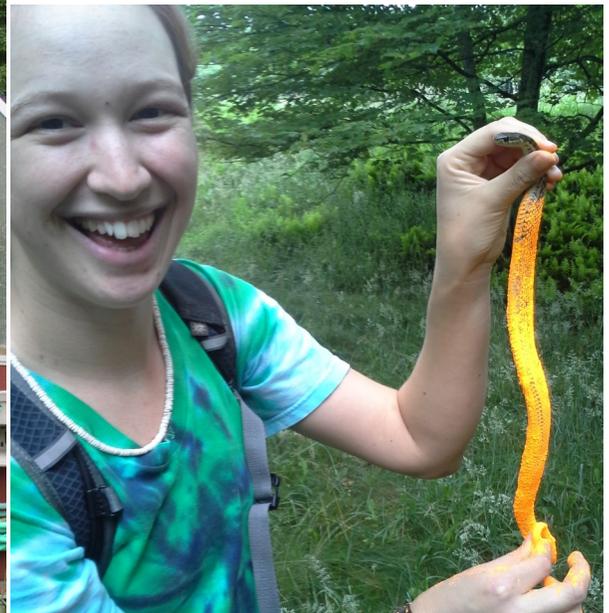
Fluorescent powder has been used with bee pollination and flowers but it also can be used to monitor snake movement. Brianna

collected snakes, coated them with non-toxic dye powder (avoiding the head), let them go and then went out at night with a fluorescent flashlight to see the trails of where the snakes had been. Movement patterns have implications for predator interactions because a snake that doesn’t move may be more vulnerable. This summer’s rains made finding the snakes challenging. Brianna suggested, “It would be cool to have radio transmitters to see where they go”.

All the REUs enjoyed cooperating on projects. “Sometimes you will help with transplanting, or go eft hunting or just lend a hand to who needs it. It’s not about the individual. And, you get to learn about new organisms!” Like crayfish. ♦



Alison Post with American Bellflower



Brianna Bero-Buell and garter snake covered with fluorescent powder

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REU greenhouse research

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News and Notes

◆ On July 13, MLBS renewed its Open House tradition. Over 80 guests attended and enjoyed guided nature hikes, historical tours, art exhibits, live mountain music, pond exploration, microscope activities, kids' games, plant and mushroom displays, and more. Visitors learned about the Station's history, its research, and the ecology of Salt Pond Mountain.

◆ We welcomed UVA President Teresa Sullivan to MLBS on September 10th. President Sullivan recognizes the central role of research experiences to



**UVA President
 Teresa A. Sullivan**

the life of a great university. We look forward to working with her to create ever richer opportunities.

◆ [Notes from Nature](#), is a crowdsourcing project that engages the public in making museum collections

(including the Mountain Lake Biological Station Herbarium) digitally available to scientists around the world. More than 3,500 volunteers have transcribed over 250,000 records so far. Later this month, UVA Innovation will launch a 45-day campaign to support Notes From Nature through [USEED](#), a pilot crowd-funding platform.

◆ [SEPEEG](#), South Eastern Population Ecology & Evolutionary Genetics, is returning to the Station September 27-29. The keynote address will be given by Dr. Mark Rausher from

Duke University. Dr. Rausher's work has explored the evolution of floral color, morphology, and biochemistry at the level of phenotypes, genes, and metabolic networks. This integrative approach to the study of adaptation and speciation, involving both field and lab-based investigation, perfectly encompasses the focus and goals of the SEPEEG conference.

Corrections to News and Notes Echoes Fall 2012, vol 7: Kraig Adler (spelling corrected) is a recently retired professor of Neurobiology and Behavior at Cornell. The Harvard professor collecting wood roaches was Professor Cleveland who worked on the endosymbiotic protozoa of *Cryptocercus* while at MLBS.