The Update, December 2013

University of Northern Iowa. College of Humanities, Arts and Sciences.

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In large or small scale ecological restoration projects, it is important to use native seeds or plants that originated within the same region where they are being planted. Plant species can develop different traits in different geographic regions that make them more suitable for that particular region. For this reason, using locally sourced seeds in restoration projects can help to promote a higher degree of success in the plants being established in the area and can minimize genetic “pollution” by plants sourced from outside the region.

The Monarch Joint Venture is working closely with the Iowa Department of Natural Resources Prairie Resource Center to restore milkweed and nectar plant habitat in prairies throughout Iowa, but also to create a supply of local, native milkweed seeds for use in future restoration projects. In 2013, the Prairie Resource Center planted 2,621 acres to native grasses and forbs, including four different species of milkweed and two important nectar sources (Liatris pycnostachya and Liatris ligulistylis). They also partnered with the Tallgrass Prairie Center at the University of Northern Iowa to establish milkweed seed plots for Asclepias tuberosa and A. sullivantii.

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ART

• Art Department Head Jeffery Byrd recently presented performances at Mobius in Boston. While there, he taught workshops at Massachussetts College of Art & Design and the School of the Museum of Fine Arts. He also lectured at Montserrat College of Art in Beverly, MA. Additionally, Byrd presented work in performance festivals in Salt Lake City and Helsinki Finland.

COMMUNICATION STUDIES

• Gayle Pohl was the keynote Speaker for the Omicron Delta Kappa National Honor Society induction ceremony on Sunday, Nov. 3.

LANGUAGES & LITERATURE

• Graduate Assistant, Daryl Veatch and Kyle Talbot submitted separate proposals to the prestigious International TESOL Arabia Conference that will be held in Dubai in March and both were accepted. Talbot and Dr. Tammy Gregersen will be presenting on affective alternative assessment and Veatch will be presenting on creatively engaging young learners.

MUSIC

• School of Music professor and conductor Rebecca Burkhardt was invited to conduct the Chengdu Symphony Orchestra of Sichuan, China, in an all-Mendelssohn program, Nov. 11-16.

TECHNOLOGY

• Edgar Guzman, a student in the department of technology, won second place award in the Vahradian Technology National Competition for Technology Students during the Annual Conference of the Association for Technology, Management and Applied Engineering (ATMAE) which was held in New Orleans this November 2013. The competition is named in honor of one of our DIT graduates Dr. Haig Vahradian who was instrumental in developing this competition. Dr. Vahradian passed away last year.
The National Council of Teachers of English (NCTE) Annual Convention was held Nov. 21-24, at the Hyatt Convention Center in Boston. This event is free and open to the public.

The various environmental facilities in the department will help students investigate environmental concerns and undertake research projects concerning the state of the world around them. The well-stocked Environmental Hydrology laboratory includes instruments such as an ion chromatography system, spectrophotometer, spectrophotometer, a portable purge pump system, and a flow simulation system. In addition, the department maintains an active web site on campus with continuous monitoring of a branch of Dry Run Creek with a water quality logger, minisonde and radar level sensor.

The geological aspects of the environment can be examined using an x-ray fluorescence analyzer to study heavy metal contaminants. Rock and soil samples can also be analyzed by students using the petrographic microscopes in the optical mineralogy laboratory. Students have access to a wide array of field equipment for work at sites around the state and a rock preparation laboratory to ready samples for further study. Students with an interest in air quality have access to a SODAR (sonic detection and ranging unit), and LIDAR (light detection and ranging unit) to measure characteristics of the atmosphere. There is also a roof-top weather station with real time data of the atmosphere, as well as a microwave temperature profiler to study higher layers of the atmosphere. Students will also become familiar with the various air dispersion modeling software packages currently in use by environmental firms and the public sector.

The degree was formally approved by the Board of Regents in Aug. 2013, and in that short amount of time ten students have signed up for the degree program. In addition, prospective majors to the department show an overwhelming interest in pursuing the environmental science degree. The geological aspects of the environment can be examined using an x-ray fluorescence analyzer to study heavy metal contaminants. Rock and soil samples can also be analyzed by students using the petrographic microscopes in the optical mineralogy laboratory. Students have access to a wide array of field equipment for work at sites around the state and a rock preparation laboratory to ready samples for further study. Students with an interest in air quality have access to a SODAR (sonic detection and ranging unit), and LIDAR (light detection and ranging unit) to measure characteristics of the atmosphere. There is also a roof-top weather station with real time data of the atmosphere, as well as a microwave temperature profiler to study higher layers of the atmosphere. Students will also become familiar with the various air dispersion modeling software packages currently in use by environmental firms and the public sector.

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Milkweed Seed Harvesting and Prairie Restoration

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Seed from these plots will be utilized to enhance Prairie Resource Center and Tallgrass Prairie Center restoration projects, and will also be used by private seed producers to start local ecotype plots for the species, which will in time provide seed for other restoration efforts. This year’s harvest of the Tallgrass Prairie Center’s A. tuberosa plots yielded 8.29 bulk pounds of seed in September, which were harvested both by hand and mechanically.

The next sections will describe different tips and methods for collecting milkweed seeds. Thank you to Brianna Borders of the Xerces Society for providing this information on harvesting milkweed seed. Xerces has also collaborated with milkweed growers like the Iowa DNR and Tallgrass Prairie Center to help inform a new document that they will release in winter or spring 2014, Milkweeds: A Conservation Practitioner’s Guide. It is a comprehensive publication that includes information on milkweed ecology, the plants’ value to monarchs, pollinators, and other beneficial insects, and detailed guidelines for milkweed seed production. Once finalized, the document will be freely available for download from the Xerces website.

Milkweed Seed Harvesting

Milkweed pods within a given population or production stand ripen over a period of a few to several weeks and a subset of them will likely be ready for collection each day during that time. Due to the wind-aided dispersal of milkweed seeds, the window of opportunity for harvesting mature seed from any individual pod can be narrow. There are several strategies for milkweed seed collection, depending on the scale of the collection effort and the equipment and labor force available. Here we highlight approaches to both small-scale hand harvesting and large-scale mechanized harvesting.

Tips for Hand-harvesting:

When collecting between several grams to a few ounces of seed (e.g., one to several handfuls) from a wild population, garden-grown plants, or a small seed production plot, hand harvesting is a straightforward method that doesn’t require any specialized equipment. If it is challenging to visit the plants on a regular basis within the seed collection window, there are a few tricks you can use to increase your chances of making a successful collection. Seed capture bags, made from a variety of materials, can be affixed over maturing pods and retrieved at a later date. Using these bags can give a seed collector several days of flexibility in scheduling a return visit. Also, rubber bands or cable ties can be applied to the widest part of nearby mature pods, to prevent them from fully dehiscing. As compared to seed capture bags, rubber bands and zip ties are lower cost and less conspicuous, but their use may only extend the collection window by a couple of days. The seeds are likely to fall out of the pod if one does not attempt to collect them soon after the pod splits. One notable drawback to leaving the bags in place until after the pods have fully opened will increase the amount of time and labor required to later separate the seeds from floss (as compared to strategically harvesting pods that have not yet dehisced). Before attempting to collect seed from wild populations, it is essential that you acquire the necessary permission for land access and seed collection activities.

Mechanized Harvesting:

At the opposite end of the spectrum, as far as scale, is the challenge of harvesting seed from production stands that consist of several hundred or even thousands of plants. Some commercial milkweed seed producers report that hand-harvesting is an efficient approach for milkweed production stands less than an acre in size. However, a significant labor force can be required to complete the harvest over a period of several days, and some producers opt to utilize mechanized harvesting equipment, for efficiency. The milkweed seed crop is ideally harvested during the estimated peak of pod maturation. Some hand-harvesting can be done toward the beginning of the seed ripening period, to capture early-maturing pods. Combines in particular are very effective at breaking up harvested plant material and separating seeds from their attached floss fibers (which helps save significant time on post-harvest seed processing). The threshing action of the combine releases seeds from the pods and breaks down vegetative material, while most of the floss fibers exit the machine. Combines are so effective at removing milkweed floss that even if the equipment has not been used for harvesting, some seed producers feed large quantities of hand-collected pods into a stationary combine, to complete the initial phase of seed processing. Due to the variable growth form among milkweeds, some species may combine more readily than others.

You may not own a milkweed seed plot, or a combine for harvesting the seed, but there are plenty of ways for you to help spread locally sourced milkweed seeds to your community. First, using the tips outlined here, collect some, but not all of the seeds from your milkweed patch when they have ripened and share them with friends and neighbors, encouraging them to plant the seeds to help monarchs by creating habitat.

Second, if you have an abundance of seeds, consider sharing some with a local native plant nursery for them to grow and distribute the following spring.

Source: monarchjointventure.org/news-events/news/
CARY PINT
Physics

Since graduating from UNI in 2005 with a BS in Physics, Cary Pint has found success both in research and teaching pursuits. He attributes his passion for these activities to his experience in the physics and computer science departments at UNI.

“I would not be in the place I am today without the positive interactions I had in the physics department at UNI. I never considered myself a stellar student before coming to UNI, and my ambition early-on was to develop a career track in the military,” recalled Pint. “However, when I developed a passion for doing research and realized that I could pursue a life where I could find a synergy between having fun and passionately working on important projects that could truly make an impact, I found the faculty in the physics department (as well as a few outside of physics) to go out of their way to enable me to have the resources and capability to foster this. I will always attribute the success that I have in life to a select number of career choices that I made while at UNI, and these choices were molded by mentors, research advisors, and other faculty in the physics (and computer science) department.”

When his time at UNI came to an end, Pint continued developing his research advisors, and other faculty in the physics (and computer science) department.

His research primarily explores the development of energy devices, as well as the conversion of storage of solar energy.

“The key research projects that my group pursues are focused around trying to develop energy devices, such as batteries, with energy densities competitive with fossil fuels, and in parallel trying to develop multifunctional materials that can be structural materials and batteries at the same time,” Pint said. “I also work along with my wife, Prof. Ruzi Bandhan, who performs research on solar energy conversion, where we try to integrate the concepts of solar energy harvesting and energy storage together into unified, integrated systems. We have very sophisticated tools in my research lab to develop nanomaterials and electronic devices.”

Corey Cooling
Philosophy & World Religions

In addition to balancing two majors, senior Corey Cooling is passionately involved in multiple campus organizations. His interests include environmental preservation, higher education, global politics, student activism, electronic dance music, and fantasy football. When he is able to make time, he enjoys listening to Iowa Public Radio, going to speakers and lectures on campus, spending time with friends, and eating spicy food. He is currently working towards a BA in Philosophy and a BS in Physics. He also pursues his interests through his participation in campus organizations.

“My involvement with student organizations has been a highlight of my time at UNI and something that I am most passionate about. My work with several student organization have afforded me unique opportunities like spending time with campus speakers and attending regional conferences. The friendships I’ve formed in addition to the organizational leadership skills I’ve developed and things I will never forget. I highly encourage all future and current students to get as involved as you can, and there is a group out there for everybody,” Cooling said.

Cooling’s involvement with student organizations has included working with UNI Freenibhikers and Inquirers, a free-thought group on campus; One Iowa at UNI, a LGBT political advocacy/activism organization; and Physics Club. He has also held several positions in student government, including Election Commissioner; and is currently the Vice President of the UNI Philosophy Club.

Cooling’s involvement with these organizations has given him the opportunity to meet many interesting people. As Field Director of One Iowa, he had an amazing encounter with LGBT activist Zach Wahls, in which he caught him dancing and singing along to “Thrift Shop” backdrop, before his talk. These interactions have been some of the most memorable moments of his college career.

“[Another] highlight was when the Philosophy Club brought in Massimo Pigliucci, a renowned philosopher of science in the CUNY system. As a club, we got to give him a tour of campus and in general interact with him before his lecture and at dinner afterwards. In light of my double major, it was rewarding to hear his opinion of his career progression from biologist to philosopher and his perspective of the world.”

The study of both philosophy and physics has helped Cooling develop a wide range of skills.

“UNI has been really good to me. In my study of physics I’ve engaged in some undergraduate research, which has been really interesting and will be a bonus for me while I pursue graduate school. Beyond that, classes I’ve taken in the Philosophy department, have prepared me by honing my critical thinking and writing skills,” he said. “I’ve also developed a knack for analyzing arguments and debates, which is essential in thinking through the sea of media sources and bias. The skills I’ve developed through my student organization work and other projects will hopefully make me an attractive candidate to whatever endeavor I choose to pursue.”

If he could do anything with no limitations, Cooling would be installing solar panels on a house in America, building an efficient public transportation system, doing research to solve the energy crisis, and spreading awareness of the causes and effects of climate change.

“I also think I’d enjoy being a coconut farmer in Sri Lanka,” he added.

After graduation, he plans to pursue a graduate degree in physics while researching alternative energy technologies.

“It is my hope to utilize both of my degrees to make a positive impact on those around me and in society at large,” he said.

Like Philosophy Club page at www.facebook.com/UNIphilclub
UNI INTERPRETERS THEATRE

UNI Interpreters Theatre is a nationally recognized co-curricular program in the Department of Communication Studies. The program was established at UNI in 1976 and emphasizes the exploration of contemporary and evolving forms of group performance, based on scripts from a variety of texts, including fiction, oral history, diaries, and folklore. The program’s home is the 90-seat black box theatre located on the ground level floor of Lang Hall.

The Interpreters Theatre program is open to any qualified undergraduate or graduate student, writer, performer or technician, who has successfully completed the Interpreters Theatre course, or an approved equivalent, and whose application for a production assignment is approved by the teaching and production faculty. Student performers have come from a range of departments in the College of Humanities, Arts and Sciences.

Student directors are usually Communication Studies or Communication and Theatre Arts majors, minors, or graduate students. Many graduate students in Performance Studies choose to script and direct creative thesis productions as a part of completing their Master’s degrees.

The Interpreters Theatre presents six to eight student and faculty directed productions annually on our main stage. UNI is the only university in the state of Iowa that features degree granting, comprehensive academic undergraduate and graduate curricular programs, along with working production programs in Performance Studies.

GRADUATE STUDENT & FACULTY PERFORMANCE HOUR*
February 20 & 21
7:30 p.m. Curtain
Performance Studies faculty and graduate students take the stage.

WASTED*
Conceived, Written and Directed by Danielle Dick McGloough, Ph.D.
March 6, 7 & 8
7:30 p.m. Curtain
This ensemble (co-)production takes a tour through trash to explore, criticize, and recuperate the habitual practices of “throw away culture.” Using playful as-stages, Image Theatre, poetry, art installations, and dance, this serious and silly performance examines the relationship between performance and environmental activism.

(RE)ORIENTATION*
Conceived, Written and Directed by Armandalean North, MA with the students of SAYE (Students Against a Violent Environment)
April 10 & 11
7:30 p.m. Curtain
A performance/dialogue mash up examining our responses to violence, and exploring the assumptions that underlie Sexual Assault Awareness and Prevention Month.

PERFORMANCE POWER HOUR
April 17
7:30 p.m. Curtain
See the “best of the best” performances from our beginning and advanced level performance classes.

*Denotes world premier production

IOWA TEACHERS Named Finalists for Math, Science Teaching

Five Iowa teachers have been named state finalists for the Presidential Awards for Excellence in Mathematics and Science Teaching. The finalists in math are Alyssen Lovstuen of Decorah High School, Brian Reese of Central Academy in Des Moines, and Jeff Marks of Roosevelt High School in Des Moines. The finalists in science are Marcia Powell of West Delaware High School in Manchester and Shannon McLaughlin of Norwalk High School.

The Iowa finalists’ applications have been submitted to the national selection committee. One math and one science award-winner may be selected to represent Iowa. Award-winners receive $10,000 and a trip to Washington, D.C., where they will participate in an award ceremony and receptions, professional development programs and discussions with policy-makers on how to improve math and science education.

The Presidential Awards for Excellence in Mathematics and Science Teaching are the nation’s highest honors specifically for kindergarten through 12th grade teachers of math and science. Awards are given to math and science teachers from each of the 50 states and four U.S. jurisdictions. The program recognizes teachers who develop and implement a high-quality instructional program that is informed by content knowledge and enhances student learning. Awards alternate annually between elementary and secondary teachers. Iowa’s finalists were chosen by a panel of science and math educators from across the state. Read more about each finalist on the Iowa Department of Education’s Website.

Marcia Powell has been designated as a NGSS Curator; she will work with a group of 50 educators across the country to help develop a database of online/blended resources for NSTA. Curators are expected to:
• participate in discussion forums with teachers about their topic;
• identify and describe 20-50 resources that address the goals within their topic;
• review the work of other curators and provide feedback;
• participate in telephone or online discussions with one another and NSTA staff.

Marcia is excited for all the possibilities this collaboration can make for STEM, regardless of the final Task Force decision.
A throng of University of Northern Iowa marching band members tuned in Cedar Heights Elementary School students to important character-building skills during a theatrical “musicale” Friday [Nov. 8.]

Twenty three marching band members, clad in their newly-minted uniforms of purple and gold, played a round of spirited tunes for an appreciative bunch of over 460 elementary students.

“The energy was amazing. The kids were very engaged and excited,” said Jeni Barry, Cedar Heights school counselor.

Barry and UNI Marching Band instructor Danny Galyen worked together to bring in the band for its first-ever appearance at the school.

A few other Cedar Falls schools jumped on the bandwagon. Orchard Hill Elementary synchronized a similar event during their Friday assembly. On Nov. 22, the UNI group will travel to Southdale Elementary for a 3:00 p.m. assembly.

Barry wanted to incorporate live music into the school’s monthly assembly, which highlights the school’s Character Counts program. It’s based on six pillars of character building: trustworthiness, respect, responsibility, fairness, caring and citizenship.

For the first lesson, one band member entered the stage late and without his uniform pants, sparking raucous laughter from the children seated around the gymnasium.

“I don’t think you’re quite ready to play; you don’t have your pants on ... Could someone tell me which one of the six pillars he could have done better?” Kody McCracken, a UNI Drum Major, asked the crowd. “That’s right, he could have been a little more responsible.”

Similar slapstick skits highlighted how musicians and students should be trustworthy members of a group by practicing and preparing their music.

One particularly tenacious tuba player tried to steal the show, claiming his instrument was the best and could serve as a band on its own.

“Maybe he could be more caring by playing with the whole group,” McCracken said.

McCracken and the other band members volunteered to participate in these school assemblies. Many of them, including McCracken, are education majors who stayed after regular marching band rehearsal to practice their skit.

“It’s a good medium to teach them how to treat people and how to treat each other while having fun and playing music,” McCracken said, a senior music education major. He also learned Character Counts while growing up in the Johnston School District.

Galyen said UNI’s College of Education donated funds to transport the band to and from each school.

A few lucky students also got a chance to direct the band and received a free pep band CD.

Parents of Cedar Heights students may have witnessed their child coming home pumped full of Panther spirit Friday since the band got everyone on their feet to jump around for the UNI fight song.

Barry said she hopes to have the band back again for future assemblies.