The Update, January-March 2016

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

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FEATURED STORY: IEEE DEMONSTRATION AWARDS

CHAS
CHAS DIVERSITY TRAINING
CHAS students are cited in recent news article about UNI-CUE diversity training.

BIOLOGY
Celeste Underriner
Current biology student with extensive laboratory and cancer research.

THEATRE
RENT
RENT Musical production breaks attendance records for Theatre UNI productions.

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AMS CHAIR APPOINTMENT
The American Mathematical Society (AMS), a professional organization which is known worldwide for its significant contributions to mathematics, serves the nation and international community to promote mathematical research. AMS members elect five new representatives to the council each year, for three-year terms. Each council member serves on one of five policy committees of the AMS. Mathematics department head Doug Mupasiri was appointed a chair member of the American Mathematical Society (AMS) Committee on Education, effective February 1, 2016. "I am deeply honored to have been asked to lead such an important committee of the AMS." — Doug Mupasiri

2015 NATIONAL COUNCIL OF TEACHERS OF ENGLISH ANNUAL CONVENTION
At the end of the Fall 2015 semester, Languages and Literatures instructors Rick Vanderwall, English Education coordinator; Sheila Benson, assistant professor, and six students in English Education participated in the 2015 National Council of Teachers of English Annual Convention in Minneapolis, where students were able to attend presentations on practice and theory. Students chatted with Dave Eggers, author and keynote speaker at one of the convention’s General Sessions, and Adrienne Lamberti, associate professor, co-presented with student Katy Benway on “Teacher Reflective Practice: Growing Pedagogical and Cultural Knowledge across Contexts.”

HYDROLOGY NEWS
Dr. Mohammad Iqbal received a grant from the Iowa Nutrient Research Center to investigate loss of nutrients (nitrogen and phosphorus) from agricultural lands within the Cedar River Watershed. Dr. Iqbal and several of his students are studying temporal and spatial distribution of these nutrients and their negative impacts on water quality. This project is part of the state’s initiative to develop Iowa’s nutrient reduction strategy. The project started last spring and will continue until 2016. The project is UNI’s important contribution toward protecting local and regional water bodies from harmful effects of farm chemicals.
Kyle Gray started as a professor at the University of Northern Iowa in the Fall of 2009, since then he has taught thousands of students about the field of Earth Science. He was awarded the Liberal Arts Core Excellence in Teaching Award, as well as his most recent honor, the Biggs Award, which honors professors for their outstanding work in Earth Science teaching.

“I love explaining how the Earth works, so it is very rewarding to help my students better understand the world around them,” Gray said. His curriculum is centered around the students, providing real-world experiences on how nature impacts day to day life, as well as how it shapes society. He teaches Inquiry into Earth and Space Science, Earth History, Elements of Weather, Earth History and many other classes that focus on how one can study the ever-changing nature of the world around them. “During lecture, I take time to talk about the different geological hazards (earthquakes, volcanoes, floods, etc). In the lab, I have the students work on a project where they evaluate the geological hazards for a particular town and provide recommendations on how to protect the citizens of the community.”

In the future, Gray hopes to expand on the geology courses offered at UNI, both for teachers and students. He is always looking for ways to create a better classroom, like as how he has incorporated learning tools such as “clickers” in his class, and has developed engaging class and research projects.

Kyle Gray was awarded with the Biggs Award due to his innovative research and his student-centered hands-on approach to teaching and learning. During his classes students are always participating in some capacity, whether it be answering questions with the “clickers” or working with students in the community through yearly events like “Sunday at the Quarry” or “Earth Science Week.” These events help the students at UNI to teach others in the community about the importance of Earth Science. Dr. Siobahn Morgan, the head of the Department of Earth Science nominated Gray for the award, which he received at the Annual Meeting of the Geological Society of America.

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– KYLE GRAY
CHAS NEWS
DIVERSITY TRAINING

BY DEREK HOLT

Student interns working at the University of Northern Iowa’s Center for Urban Education recently engaged in diversity training. The students are mainly white Iowans, from a mix of urban and rural backgrounds. They get experience working with students and families from various cultures in the educational programs UNI-CUE provides, including tutoring, college prep and other services.

The UNI-CUE internship program is intended to expose young people to as many life experiences as possible. Through collaborates with other University departments and community programs, UNI-CUE then matches its resources with community needs. Educational opportunities for minority and non-traditional students is a high priority. UNI-CUE Director Robert Smith believes the program can provide a bridge of understanding between minority cultures and the majority community.

“When we hire students here who come from backgrounds that don’t have a lot of diversity, they leave with a great experience, and the best experience you have is working with people who come from a different way of life,” Smith says.

“They’re the future,” Smith said of the young people. “They’re going to share those experiences. What I would hope is it becomes campus wide, it becomes community wide, and we’re all open to try to learn. I think you can understand people and not necessarily agree with them. But I think when we understand, we at least live together better. I’d like them to be as comfortable as I am living and working in Iowa, no matter where they go.”

Rachel Kuhn, a UNI student graduating in May, said, “What I really took out of it is how important education is and how blessed I was to have the chance to get that education; how important it is for those who never really had a chance.”

“Another UNI student McKensie Nicholson, will graduate in May and is studying construction management. She’s worked at UNI-CUE for two years now. “I graduated in a class of 44, so I was a lot less exposed to other cultures, she said. “Everyone coming to UNI and Cedar Falls, it’s kind of a big change for me.” She explained how her UNI-CUE experience will benefit her in her chosen field. “In construction management, I’m a minority myself. I’m a female in a male-dominated industry. I have my own voice. I think all of our worlds are different. In reality, you have to be non-resistant to change, get to know other people, and communicate.”

“Having a supportive and caring relationship with my research mentor, Dr. Wiens, has made a huge difference. Had I not gotten involved in research with my research mentor, Dr. Darrell Wiens, she said.

Dr. Wiens is a developmental biologist in the Biology department, and Underdiner works with him in the laboratory. Their research has been concerned with chick embryos, how they develop, and how that development is related to human development. Underdiner’s research project looks at very high concentrations of unmetabolized folic acid affects neural development.

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Over the past summer Underdiner was a research intern at the Hormel Institute, a cancer research center in Austin, MN. There Underdiner worked in a Cell Signaling lab focusing on Melanoma. The research goal was to figure out why melanoma cancer cells acquire a resistance to the current drug therapy. The Post-Doctoral Research Assistant in the lab is continuing the research project she helped start.

Underdiner has recently been accepted to a PhD program in Molecular and Cellular Pharmacology. Her long term goal upon completion of her PhD is to become a Post-Doctoral Research Assistant, and then become a professor.

“I hope to become a professor because I aspire to help students learn and I hope to leave an impression on them the way the professors at UNI have impacted my life.”

Celeste Underdiner, a senior Biology major with a chemistry minor, will be graduating this May and attending graduate school in the fall to obtain her PhD in Molecular and Cellular Pharmacology. Underdiner is from a small town, St. Ansgar, Iowa. She says that growing up in a small town has made all the difference in her ability to excel in her undergraduate career.

Underdiner has been highly involved with the sciences here at UNI. She is a Peer Teaching Assistant for the general biology course Life Continuity and Change, an Organic Chemistry Laboratory Assistant, and a Biology Department Student Ambassador. Additionally, she tutors for 12 different science and math courses.

“The professors are my reason for choosing my career path,” especially my research mentor, Dr. Darrell Wiens, she said.

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The direction of this project originated in the psychology department when Dr. Cathy Desoto did a correlational meta-analysis on maternal folic acid intake and the incidence of autism spectrum disorder. This sparked an interest in one of her students, Alexandra DrWitt, who began the biological study under Dr. Wiens’ advisement. Underdiner started working on this project three years ago and the research manuscript was recently accepted into the Cells, Tissues, and Organs Journal.

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January 9 through 12, two UNI doctoral students, Ranjana Joshi and Ziyuan Li, presented their research paper and demonstrated the prototype board developed by them at the IEEE Consumer Communications & Networking Conference held at Las Vegas, NV. The demonstration attracted great interest from many conference attendances and the research project was awarded the only best demonstration award in this prestigious international conference.

The demonstration by UNI was driven by the popularization of smartphones, various smartphone universal sensing applications have emerged, which use a smartphone in conjunction with external sensors for data acquisition, processing, display, communication, and storage. Because smartphones do not have universal data interfaces, many universal sensing applications use the earphone and microphone channels of the 3.5mm audio interface for data communications so that they can work with different types of smartphones. The earphone channels of the 3.5mm audio interface can only send AC signals out of a smartphone, and hence DC power needs to be harvested from the earphone channels.

The project presented by Joshi and Li was a joint power harvesting to harvest double or more power from both earphone channels (instead of one earphone channel) without affecting data communications is demonstrated with a prototype system, which can power both external microcontroller and sensors through the 3.5mm audio interface of a smartphone, display sensor measurement results on the smartphone, and control the outputs of the microcontroller from the smartphone.

Head of this project, Dr. Hong was responsible to generate the core technical ideas, algorithms, and solutions for the project. Joshi and Li applied these technical ideas, algorithms, and solutions with electronic hardware and software programming.

Both doctoral students are emphasizing on Electrical Engineering Technology, and are Graduate Assistants in the department of technology, so besides performing the research for the project, they also participate in teaching a few Electrical Engineering Technology courses.

The plan for future work on this project includes contacting all conference attendees who are interested in their demonstration and explore the opportunities for academic and industrial collaborations.

The conference included a peer-reviewed program of technical sessions, special sessions, business application sessions, tutorials, and demonstration sessions. CCNC especially welcomes demonstrations of emerging and innovative technologies that have potential commercial application. More than 300 people attend IEEE CCNC 2016 and 231 papers are presented at the conferences.

The IEEE leadership conference held the 12th through the 14th of February at the ISU campus was a success. Phil and Josh competed in the Brown Bag competition where they placed second place and won a couple hundred dollars for the UNI student organization. The brown bag competition is an event where each team is given a bag of miscellaneous electrical components and they have four hours to build a circuit. It was a great networking opportunity and a good chance to show other schools and companies that UNI produces talented graduates. Students are encouraged to engage more in the conference, which provides them with possibilities for their future.
ALUMNI SPOTLIGHT
MEGHAN REYNOLDS
SCIENCE EDUCATION

BY RHIANNON RASMUSSEN

Since graduating with her BA in Science Education and Music, Meghan Reynolds has gone on to earn her Ph.D in physics and began a career teaching AP classes at Cedar Falls High School.

For Reynolds, Working in the Cedar Falls school district has been a wonderful experience. Her favorite part is the students. “They crack me up, impress me, frustrate me to no end, inspire me and I enjoy figuring out how to best teach them,” she said. Prior to her job in the high school, Reynolds worked at UNI teaching “Inquiry into Physical Science” as well as holding a position on the Iowa Governor’s STEM Advisory Council.

During her time at UNI, Reynolds was given many opportunities to participate in scientific and educational research that helped broaden her knowledge of both fields. One of Reynolds’ favorite memories of UNI was working closely with the professors in her department and how those relationships influence the way she currently teaches, “The small class sizes allowed for many extensive and in-depth conversations on what we teach our students about science and the ways in which we teach them.” She continues to work with many of the professors she studied under through professional development courses offered by the university.

Another passion of Reynolds is her love for engineering, “I enjoy building and fixing things, and working with my robotics students.” She is working on building the First Tech Challenge (FTC) robotics program in the Cedar Falls school district to encourage students to become interested in engineering and STEM fields.

When Reynolds isn’t teaching she is enjoying time outside, hiking or taking her cat Charlie and tortoises Tesla and Tardis outside. She is working on implementing an outdoor classroom in the Cedar Falls High School, as a way to share her love of nature with her students.

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A senior majoring in Music Performance and Communication Disorders, Alyssa Adamec is an active member of the UNI community. She serves as an ambassador for the UNI School of Music, performs in the Northern Iowa Symphony Orchestra, and is a frequent substitute violist for the Waterloo-Cedar Falls Symphony. Other roles that Adamec is taking on include being a member of the National Student Speech-Language and Hearing Association, and a volunteer for the student-led Iowa Conference on Communication Disorders, which is hosted at UNI. She said that her involvement in many roles at UNI has enhanced her learning experiences, and recently she became the music director for UNI Spectrum Project, and an intern for the UNI Suzuki School.

As a music ambassador Adamec gives tours in the two music buildings and represents the School of Music during Panther Open House and Upclose days. She also participates in the audition days in the fall and spring to answer prospective students’ questions. She feels that the most rewarding thing about being a music ambassador is sharing her pride in UNI, and helping perspective students to feel that they belong at UNI.

Due to Adamec’s passion for music and her state of the art music education at the Preucil School of Music in Iowa City, she decided to continue with music in college. However, she wanted another major besides music, so her mother suggested looking into speech pathology. Adamec became interested in Communication Disorders when she volunteered at the Iowa City V.A. Hospital. “I noticed the parallels between the keen ear of an audiologist and that of a musician,” she said. When she started the communication disorders major, her intention was to become a speech pathologist, but later she decided to focus on learning the basics of hearing. Observing audiologists at the UNI audiology lab helped her to realize, “I had spent my whole life taking for granted my precious gift of hearing.” She added, “My future job will allow me to give back the gift of hearing and help people experience their world and all it has to offer.”

One of her most memorable experiences at UNI was when she traveled to Brazil with the Northern Iowa Symphony Orchestra, where they collaborated with another orchestra and played Mahler’s Symphony No. 1 in D Major for about 1,000 people. Adamec remembers how unforgettable happy the audience was and she said it was an example that music is a universal language.

Within the next few years, after graduation and besides continued play in a local orchestra or chamber ensemble, Adamec is considering acquiring a Suzuki Certification to teach in a Suzuki Community School or have her own studio. She is also interested in working toward a doctoral degree in audiology.
RENT was a fantastic show for TheatreUNI from the technical expertise, to the extensive work with the School of Music and to the amount of people who attended the show. Rent was seen by 3,181 people, the highest ever attendance at a TheatreUNI show. They had 107 students audition for roles in the musical and called back forty students, eighteen of which played major roles.

The musical covers the story of a group of young artists trying to make a living in New York, while struggling with the injustices of poverty, disease and identity.

TheatreUNI worked with the School of Music during the production of this musical. The department worked closely with professors Rebecca Burkhardt, Seth Butler, James Healy, Elisabeth Bieber and Mitra Sadeghpour in order to meet the needs of this sung-through musical. Many students in the School of Music played a major role in the production. “We had SOM faculty and students contribute their expertise as cast members, players, conductor, music director and voice coaches,” said Jay Edelnant. They also brought in choreographer, Mandy Masman, to help choreograph the show.

One of the highlights was the technical side of the show. Faculty and students brought in cutting-edge technology and control systems, providing “rock concert quality light.” During the last five years, TheatreUNI has been pushing the technical side of theatre, incorporating new lighting equipment and software as well as video projections during productions.

The show took over a year to produce and involved a team of thirty students, guest artists, and faculty along with the other fifty members in the cast and crew. This production proved to be one of the most successful in TheatreUNI history.

“RENT was an awesome experience. We did a flashmob in the student union building to promote the show - the next day sales went through the roof. The show had a skilled and collaborative production team, and student performers who came from across campus. In recent TheatreUNI history, this was one of the most successful projects we’ve had. I even helped wire some of the 141 LED candles onstage!” –Eric Lange, department head
Kyle Spurgeon, a senior from Bloomfield, Iowa, is majoring in physics. Spurgeon is a member of the UNI Physics Club and the president of the UNI Climbing Club. Getting involved with clubs really helped Spurgeon acclimate when he first arrived here. He mentions how great of an opportunity it is to make friends with people that are interested in the same things you are, and meet new friends from all different kinds of majors and backgrounds, which really opens up your options.

Spurgeon decided to attend UNI after a visit and discussion with physics professor, and then department head, Dr. Cliff Chancey. Dr. Chancey’s passion for getting students involved pretty much sold Spurgeon.

He says, “That was a huge deal to me when going into physics, and the department here is incredibly willing to get all of their students involved in real research.” The physics department has allowed Spurgeon to do a lot of research in his time here. He is even a co-author of a few academic papers. Spurgeon has worked with a variety of majors, which he feels is an accurate representation of the “real world.”

Spurgeon has some insight for prospective students joining the Department of Physics. “They really work hard to make sure you get the education you need to excel in the field you wish to go into. Whether you want to go into academia or engineering, the professors here will make it their personal goals to prepare you for that.”

Spurgeon plans to attend graduate school after graduation. He is in the process of applying and deciding now. Outside of class, Spurgeon enjoys rock climbing, and coding/electronics projects too.

The University of Northern Iowa Construction Management Program sent six members to San Diego, CA to compete in the Associated Builders and Contractors Construction Management Competition (ABC) from November 8-11. The team is composed of four competing members: Eric Bridgewater, Logan Bredesky, Matt Murphy, Taylor Pedersen and two alternates: Trevor Brown and Adam Byrne.

Eric Bridgewater, President of the UNI Construction Management Club and will be graduating in the spring of 2016 with a degree in Construction Management and a minor in General Business Concepts. He will be working for a General Contractor in Des Moines, IA called Ryan Companies. They work on projects in the retail, healthcare, office, build-to-suit and many more sectors of the market.

In the middle of September, the students were sent plans and specifications for a Discovery Museum in Fort Collins, CO. The students were required to analyze the plans and put together an estimate, project management plan, schedule, safety plan, and quality control plan based off of the information given to them. The proposals were due upon arrival in San Diego.

The team then participated in a competition on November 9th, 2015 against 22 other teams from around the nation. Some of the other teams included Cincinnati, Florida, Ohio State, Purdue, Colorado State, and LSU. The students were given 3 separate addendums that changed the scope of the project. A few items included in these addendums included value engineering options, material alternates and site restrictions due to surrounding railroads. The students completed the competition in the allotted five hours and turned in their revised proposals to a panel of 15 judges. The judging panel was comprised of members from ABC and members from the original project team that constructed the Fort Collins Discovery Museum.

The UNI team was then was short-listed along with 9 other teams. The short listed teams gave a presentation about their proposal and how they were going to construct the facility. The presentation was then followed by a five minute Q&A session.

Scoring criteria for the competition was based on four different categories: Project Management and Scheduling, Estimating, Safety Plan, and Quality Control Plan.

Awards were announced on November 11th during a luncheon held with all of the teams and the team's sponsors. The UNI team received First Place in the Project Management and Scheduling category and finished in the top 10 in all other categories.

The most challenging part of the competition was utilizing time efficiently before and during the competition. Each team member had to work diligently to finish the assigned tasks. There also had to be a lot of coordination between team members to ensure that all elements of the project were completed. The most rewarding part was being able to see all of our work come together into one 45 page proposal. It was also rewarding to beat out 22 other teams from around the nation in Project Management and Scheduling and be ranked the top school in the country for that category.
ANNUAL JURIED STUDENT ART EXHIBITION
March 21 – April 16
UNI Gallery of Art

SPOTLIGHT SERIES: PERFORMANCE COMPETITION FINALS
March 28, 7:30 pm
Great Hall, GPBAC

2016 BEGEMAN LECTURE
March 29, 7:00 pm
Auditorium, Lang Hall

FINAL THURSDAY READING SERIES FEATURING JOE BENEVENTO
March 31, 7:00 pm
Hearst Center for the Arts

CME FIRST FRIDAY
April 1, 7 – 11:00 pm
Center for Multicultural Education

ARTIST SERIES: THE LETTERMEN
April 3, 3:00 pm
Great Hall, GBPAC

SPOTLIGHT SERIES: JAZZ BAND ONE W/ GUEST JOHN WOJCIECHOWSKI, SAXOPHONE
April 8, 7:30 pm
Bengtson Auditorium, Russell Hall

THEATRE UNI: THE TROJAN WOMEN
April 7 – 9, 7:30 pm
April 10, 2:00 pm
April 14 – 16, 7:30 pm
April 17, 2:00 pm
Strayer-Wood Theatre

ARTIST SERIES: THE ILLUSIONISTS
April 26, 5:30 pm
April 26, 8:30 pm