WELCOME

New Online Masters Students for Summer 2020:
Babylon Anderson, ND; Kerrigan Anspauch, NE; Amal Atie Sobaiti, KS; James Babcock, TX; Holly Baijnauth, CA; Nikki Beardsley, MI; Iszac Burton, MO; Kayla Chiodini, IL; Christina Daum, PA; Katelyn Dennis, NE; Collette Foster, OH; Clarissa Furlong, OH; Jennifer Gallagher, CA; Louisiana Gomez, FL; Jose Gonzalez, IL; Dwayne Harrington, NJ; Kevin Hintz, CO; Patricia Howell, GA; Mollie Hutton, TN; Lindsey Johnson, CO; Thomas Lopresti, OH; Kaitlyn McSweeney, MA; Michael Mills, SC; Amy Minas, IL; Richard Nee, CA; Kevin Ostaszewski, MA; Katherine Ostrowski, IL; Francis Platas, NJ; Keeley Ramaekers, NE; Gwen Reynolds, KS; Shannon Rogers, NE; Harry Sanders, KY; Jenna Sanders, IL; Emily Schmit, NE; Beau Schwenka, NE; Matthew Sepich, IL; Emily Skibinski, WI; Francesca Spirito, KY; Alycia Summers, IA; Erin Thibodeau, NC; Lorraine Thomas, NC; Erin Vera, VA; Barbara Wendt, MN; Holly Westad, MN; Laura Yany, FL

New Online Faculty

Dr. Gregory Pec joined the Department of Biology at UNK as an Assistant Professor in Fall 2019. Prior to UNK, Pec was a postdoctoral fellow at the University of Alberta, where he examined the role of ectomycorrhizal fungi in boreal forest restoration. This was followed by a postdoctoral research associate position at the University of New Hampshire, where he investigated the response of soil and root-associated fungi to hemlock woolly adelgid infestation in New England forests. At UNK, his lab group addresses both basic and applied questions to the restoration and management of terrestrial ecosystems, with specific interest in how plant and soil microbial communities respond to biological invasions, biotic disturbance, and other drivers of change. He is teaching BIOL 812 Microbial Diversity online this Summer 2020.
Dr. Pricila Iranah joined the Department of Biology at UNK as a postdoctoral research associate in August last year. She moved to Nebraska following a postdoctoral position at Colorado State University in the Department of Fish, Wildlife and Conservation Biology, where she worked on a study funded by the Strategic Environmental Research and Development Program and assessed programs that enable species and habitat conservation on private and Department of Defense lands. Dr. Iranah graduated from the Department of Earth and Environmental Studies at Montclair State University in New Jersey with a PhD in Environmental Management. Her doctoral research explored the economics and policies associated to forest conservation in small island developing states, using the Republic of Mauritius (her home country) as a case study. Before coming to the US, she worked with the Climate Change Impacts Group of the Zoological Society of London and with the first public-private partnership for conservation in the Republic of Mauritius, the Vallée de Ferney Conservation Trust, where she gained experience in conservation management, acted as a stakeholder at national level and actively engaged the media in raising awareness about biodiversity conservation. Pricila has degrees in biology and environmental management from the University of Mauritius and Coventry University (UK) respectively. Her current work still revolves around species and habitat conservation on private lands, but adopts a system dynamics perspective that looks at the varying effects of conservation funding, agency roles, non-governmental organizations, farming demographics and conservation attitudes on the success or failure of conservation programs. Dr. Iranah will be teaching BIOL 823 Environmental Biology as an online course this summer.

NEWSFEED

Three Biology Professors, Drs. Mary Harner, Kimberly Carlson, and Surabhi Chandra, were featured in New Frontiers, the Research and Creative Activity publication at the University of Nebraska Kearney.

Dr. Mary Harner’s article is entitled “The Water’s Edge”. Below is an excerpt from the article; for the full article click on the link: https://www.unk.edu/academics/gradstudies/new-frontiers/#p=11
“People are searching for ways to manage rivers to meet societal and ecosystem needs as human populations and demands for freshwater increase globally,” says Mary Harner. (Photos by Corbey R. Dorsey, UNK Communications)

By KIM HACHIYA

The most interesting things seem to happen at the edges where two disparate entities meet. A seed touches the soil; a city creeps into the country; a river rubs against the bank. The proximity triggers all sorts of reactions that scientists love to explore. They sometimes observe them in labs, manipulating environments in a test tube or predicting outcomes using computer models. But some systems are too big to study inside the lab – then maybe the lab goes outdoors.

A river system is like that.

A watershed that drains thousands of square miles is just too big to see what individual events can cause. But what if you could study river ecosystems over a long period of time, comparing changes you can see, trying to deduce what induced those changes? That’s what Mary Harner does. And this scientist adds a new wrinkle – she’s also an accomplished communicator, so she not only knows the science, she can tell others, too, using photographs and other visualizations to exchange knowledge and educate others about her favorite environment – rivers.

Kearney, Nebraska, Harner notes, is a great place for someone who likes to study rivers. The Platte River flows nearby, and the Platte plays a prominent role in her research. Harner came to Nebraska in 2008. Her husband, biologist Keith Geluso, had joined the University of Nebraska at Kearney faculty, and soon after she began a shared position as an assistant professor of biology at UNK and as wetland ecologist for the Crane Trust. In 2012, she was named director of science for the Crane Trust and in 2015 joined UNK as a research associate professor. Since 2016, she has been an associate professor in the departments of communication and biology. The dual appointment is unusual, she acknowledges, and is a recurring
theme of those intersecting edges that fascinate Harner.

“What I have come to really appreciate about the Platte and other rivers is the edges, the ecotones,” she said.

Ecotones are a region of transition between two biological communities, such as the river and the shore. Ecotones often are richer in species and variations than either of the two habitats alone. Harner is especially interested in sloughs, the linear depressions on the edges of the river through which water periodically pulses – creating floods, drylands, wetlands. The slough’s boundaries constantly change as the river ebbs and flows. This, she notes, creates a lot of interesting situations for the plants and animals that live there.

Drs. Kim Carlson and Surabhi Chandra articles are part of a series entitled “Life in the Lab” starting on page 31 (https://www.unk.edu/academics/gradstudies/new-frontiers/#p=31). Below are excerpts from the articles; for the full article click on the link above.

**Kim Carlson: ‘Well-Behaved Women Seldom Make History’**

Kim Carlson discovered her love of genetics as an undergraduate at the University of Nebraska at Kearney. She was inspired by her former biology professor, Doug Lund, who retired in 1999 after a 37-year career here.

“He encouraged me to pursue genetics,” Carlson said. “His advice was, ’If you love it, then do it. You will be happy you did.’”
Now in her 17th year as a UNK faculty member, the professor and assistant chair in the Department of Biology takes the same approach with her students.

She views research as an opportunity to mentor and teach students while passing along the passion she has for molecular genetics.

“I love seeing their excitement when they succeed in the lab,” Carlson said of her students. “I like to see them grow as researchers, from the student who comes to my lab as a freshman and is just learning, to the senior who is on a stage in front of a room full of people presenting their research and doing it with confidence.”

Unsurprisingly, Carlson puts students at the center of her work, allowing them to experience every aspect of a project.

And they have a little fun along the way. Her perfect day in the lab?

“I’m working with my students. The radio is on. And we’re talking and laughing. I love this. My students would say my perfect day is one when I didn’t do something wrong, like set the cabinets on fire. Yep, I did that. They made a taped square on the counter for me to put the Bunsen burner so that never happens again.”

**Surabhi Chandra: ‘I want to understand and provide a molecular basis for diabetes-related diseases’**
Breast cancer is the second most common cancer in the world, with an estimated 2 million new cases diagnosed in 2018 alone.

In the United States, about 1 in 8 women will develop invasive breast cancer during their lifetime.

Like many other forms of cancer, there are certain factors that impact a person’s breast cancer risk and their chances of beating the disease. Diabetes is one of them.

Surabhi Chandra, an associate professor in the University of Nebraska at Kearney’s Department of Biology, is researching diabetes and its effect on breast cancer progression.

“Diabetes and cancer are closely related as cancer cells feed on glucose and thus worsen the prognosis of diabetic cancer patients,” Chandra said. “However, there is a gap in knowledge about the pathway that causes these effects. We’re working to understand the mediators involved in an effort to propose a therapeutic option.”

---

**CONGRATULATIONS**

**May 2020 Graduates:**

Cara Allingham, Denise Chiles, David Corbin, Roni Deever, Sarah Franks, Bryn Wesley Harmer, Amy Hill, Alyssa Hines, Joshua Holloway, Krystal Li, ShereKay Liberman, Olivia Myers, Laura Nelson, Elissa Odgren, Veronica Randall, Stephanie Sandy, David Satterfield, Kamber Scott, Thomas Sullivan, Kathryn Thompson, David Topolewski, Heather Webster, Allison Zyla

Due to COVID-19, the May 8th graduation ceremony was cancelled. It will be combined with the summer commencement ceremony held on July 31st. We look forward to celebrating with our spring and summer graduates at that time and sharing pictures with you.

---

**Publications, Meetings, Grants**

**Grants**

**Chandra, S.** Title: Polyamine regulation: Role in diabetes mediated breast cancer advancement. 2020. Agency: Nebraska Institutional Development Award Program (IDeA) Networks of Biomedical Research Excellence (INBRE). Amount: $45,000/year for 3 years.
Meetings


Peterson, B.C. 2020. Exhibitor Booth to Promote the Master of Science in Biology Graduate Program at UNK. Nebraska Chapter of the Wildlife Society. Kearney, NE.


Publications


Continue to send us updates on any meetings, publications, grants, or awards that you have been involved with. Please email details to msbiology@unk.edu.

---

**Director’s Desk from Dr. Austin Nuxoll**

Greetings, I hope this message finds you well after such a unique semester. I know many students (and faculty) have had a challenging semester while adapting to these unexpected changes. Whether it is
working increased hours because you are an essential employee, falling ill, or working from home while watching kids, it was not easy for many of you. As we look to the summer semester, many of the faculty and a few research students are trying to resume some level of normalcy as we return to campus and our research labs.

This summer we have two online classes offered by new faculty. Dr. Greg Pec joined us last fall but will teach his first online class this summer, Microbial Diversity. Dr. Pricila Iranah is a Postdoctoral Research Associate that joined us last fall as well and will be teaching Environmental Biology this summer. While both of these courses are currently full, there are still plenty of available seats in our other courses. Fall classes are also filling fast so if you have not registered, please plan to do so soon. For a list of course offerings and descriptions, please visit our webpage: www.unk.edu/academics/msbio/Course_Descriptions.php

---

**Faculty News**

Long term white-tailed deer antler research findings conducted by Brian Peterson and Dr. Casey Schoenebeck within the Platte River were highlighted in an article written by Lindsay Thomas entitled “Seal of Approval: Antler Science” in Quality Whitetails, 2020, Volume 27, Issue 2, pp. 24-28. Additionally findings were highlighted on the Quality Deer Management Association (QDMA) website: https://www.qdma.com/how-to-read-shed-antlers-for-health-and-habitat-clues/

During the COVID-19 crisis, Dr. Letty Reichart, decided to help out elementary students that were now stuck at home doing distance learning. She has been livestreaming fun science labs through Facebook every Tuesdays and Thursdays since late March. http://unknews.unk.edu/2020/03/25/unk-professor-turns-kitchen-into-virtual-science-lab-for-kids-stuck-at-home/
Student News

Riana Fisher (May 2019 graduate) recently began a new job as an on-call wildlife biologist for Alluvion Biological.


Jennifer Suter (current distance student) was recently promoted at Pfizer from a Primary Care Pharmaceutical Representative to Specialty Pharmaceutical Representative.

Ken Wood (December 2016 graduate) has been an adjunct instructor at Hillsborough Community College teaching Nutrition and Drugs and General Zoology since 2017. He has also continued to work as an AP Biology and Biology teacher in Hillsborough County, Florida.

Please let us know what is going on in your lives; email us your news at msbiology@unk.edu.

Office Space

Still looking to register for a class this summer? The following courses are being offered during the 2nd & 3rd summer session and have a few spots left:

May 26-July 17 session:
BIOL 805P – Range and Wildlife Management (3 hrs)
BIOL 830P-02 – Avian Life History (3 hrs)
BIOL 830P-03 – Wildlife and Fisheries Laws and Policies (3 hrs)
BIOL 830P-09 – Human Microbiome (1 hr)
BIOL 881-01 – Current Issues (1 hr)

June 8-July 31 session:
BIOL 830P-06 – Neglected Tropical Diseases (2 hrs)
BIOL 830P-08 – Vaccines: Concepts & Controversies (3 hrs)
BIOL 881-03 & 04 – Current Issues (1 hr)

Students can register for open classes through MyBlue up until the first day of the class.

Students planning to graduate this July 2020 must apply for graduation on MyBlue. Even if you do not plan to attend ceremony you must apply in order to receive your degree. The deadline to apply for July graduation is June 15th. There is a $25 application fee which can be paid on-line during the application process. Commencement ceremony will take place at 10:00 am on July 31st in the Health
and Sports Center. Please consider making the trip to Kearney to walk in graduation and if you do, please let the Biology Department know so we can plan some special events for you.

Reminder: If you haven’t registered yet for Fall 2020 classes, we encourage you to do so ASAP. Classes fill-up quickly so if there is a course you really want/need to take, you should register now. Fall 2020 classes begin August 24th.

A one credit topics course was recently added to the Fall 2020 schedule, Readings in Biotechnology (BIOL 830P-04). Below is the course description and you can find a sample syllabus on our website at https://www.unk.edu/academics/msbio/Course_Descriptions.php.

**Readings in Biotechnology (BIOL 830P-04)**
In this course, students will read and analyze scientific literature about recent advances in biotechnology. We will discuss emerging methods in biotechnology as well as the novel applications of both established and new techniques. It is strongly recommended that students have had at least an introductory course in either genetics, molecular biology, or cell biology, prior to taking this course.

Remember, if a class you are interested in taking is full, contact Brian or Robyn at msbiology@unk.edu to be put on a waitlist. Should a spot become available you would then be contacted via your lopers email account to register.

---

**Comprehensive Exam**

Some of you may have wondered “what does the comprehensive exam entail”? In order to meet graduation requirements students are required to take a comprehensive exam. Typically, this exam is taken in a student’s final semester in the program. Students are given 2 hours to complete the exam and it is closed book, closed note, and closed electronic device. Here is the breakdown of the exam:

- There are 50 multiple choice questions (1 point each) from the required courses: Intro to Graduate Study, Biological Statistics, Organic Evolution, and Current Issues.
- Depending on your catalog year, you either need to answer 5 long essays (Fall 2017 catalog or later) or 3 long essays (catalogs prior to Fall 2017) from your electives. Students are given multiple essay question options to pick from. Each essay is 10 points.
- If you are on a catalog prior to Fall 2017, and 831 research series is required, you will also be given 4 short answer questions related to research methods and design. These 4 short answer questions are 5 points each.

The exam is now being proctored online, so there is no need to identify a proctor in your area, and it is administered in Canvas. We recommend saving materials from each of your courses as Canvas sections may not remain active once the semester ends or faculty members may leave the University.