



Published Summer 2020

By: Dr. Kristy Kounovsky-Shafer

**2020**

## Letter from the Department

We hope all of our readers are healthy given the current conditions with Covid-19. Faculty had to adjust to putting all their classes online in less than a week. It was intense but it was worth it, so we could protect our students and community members. In this past year, we have had three faculty receive INBRE DRPP research grant awards that start May 2020: Drs. Michael Moxley, Mahesh Pattabiramann, and Kristy Kounovsky-Shafer. In the 2019-2020 school year, our faculty and students were busy presenting at the regional American Chemical Society meeting in Wichita, KS and Dr. Moxley presented at the National Biophysical Society Meeting in San Diego, CA. Many other meetings that faculty were going to attend were canceled this year, including the national ACS meeting where Dr. Haishi Cao was going to present and Hannah Way (student) was selected to present at the prestigious Posters on the Hill that was moved to online rather than in Washington, D.C. Congratulations to the students and faculty that were accepted to present at these conferences, including the conferences that were cancelled. Additionally, our Chemistry Club donated safety glasses to a local hospital during the pandemic. We are very proud of our students and their response to the situation.

## Three faculty have been awarded Pratt-Heins Awards

The Pratt-Heins award is a university-wide award that is handed out to one faculty member across the university for each area: teaching, research and service.



**Dr. Christopher Exstrom**  
Inorganic Chemistry  
Service, 2018



**Dr. Scott Darveau**  
Physical Chemistry  
Service, 2017



**Dr. Kristy Kounovsky-Shafer**  
Analytical Chemistry  
Teaching, 2019



## Meet two of our Graduating Seniors

### Bryant Menke

Where are you from?

I was born and raised in Hastings, NE.

What are you going to do after UNK?

After UNK, I plan on attending medical school at the University of Nebraska - Medical Center.

What is one of your favorite moments at UNK?

Laying on Dr. KS's floor contemplating what I wanted to do with my future.

What is your favorite part about doing research?

One of my most memorable moments was when I worked with Dr. Kounovsky-Shafer's lab. We would try to figure out how to set up our experiment to measure electroosmotic forces in the lab. We did a lot of problem-solving.

What is your favorite class?

Biochemistry and Inorganic chemistry.



### Akshay Kashyap

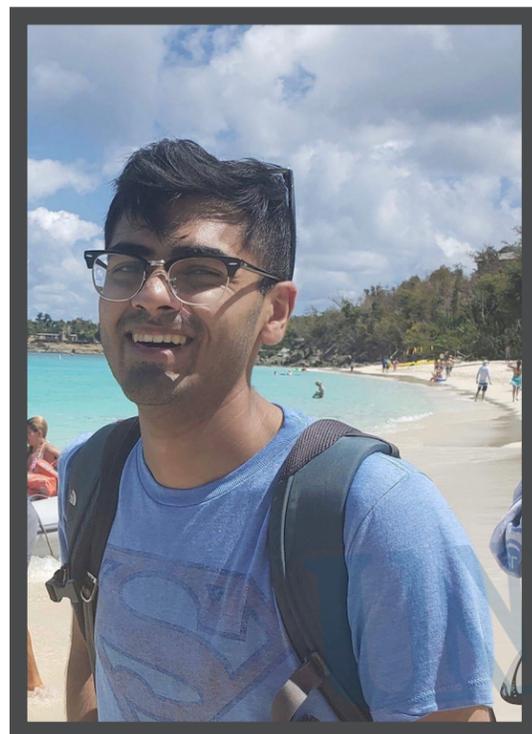
Where are you from? I am from Kearney, NE.

What are you going to do after UNK? I will be going to medical school at UNMC in Omaha.

What is one of your favorite moments at UNK? It's pretty hard to pick a single favorite moment. In general, some of my favorite moments at UNK have been around my friends whenever we are around one another, whether it's playing video games, hanging out, or studying.

What is your favorite part about doing research? My favorite part about doing research is being able to apply the things I have learned in class and actually see it done in practice.

What is your favorite class? My favorite class, at least Chemistry-wise, has been Organic (sorry, I enjoyed analytical but I loved Organic).



## COVID-19

We hope all of our readers are staying safe and healthy during this time. We wanted to highlight how we were responding to the pandemic. Some of us are pulling their hair out.



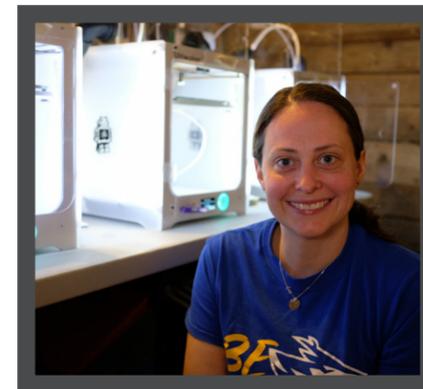
Dr. Carla Kegley-Owen has made 226 cloth face masks for hospitals, Brookstone, etc.



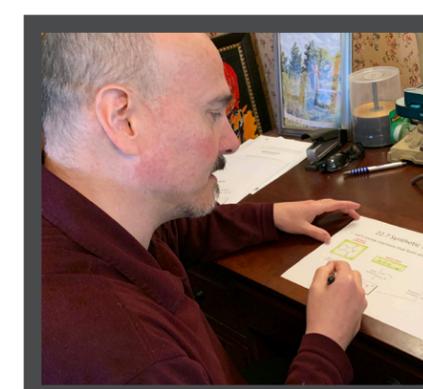
Jeramie Ellis and her two kids are completing works of art on the sidewalks for the elderly people in the neighborhood.



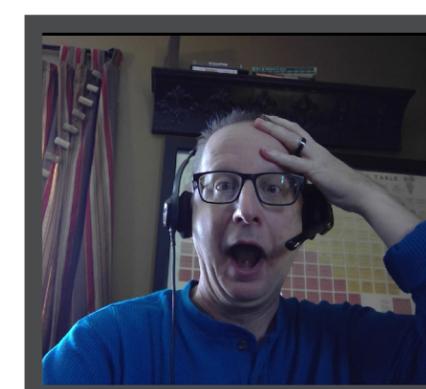
Dr. Letty Reichart (Biology) is actively engaging kids through Facebook to showcase science experiments.



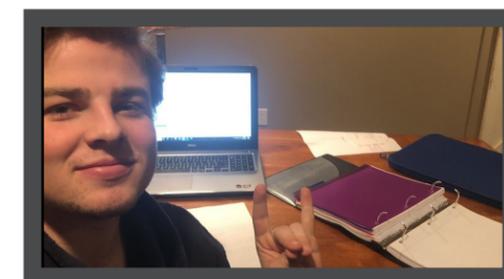
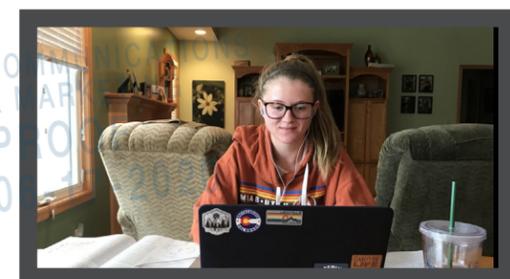
Dr. Kristy Kounovsky-Shafer and her daughter Zia are 3D printing face shield components and ear savers.



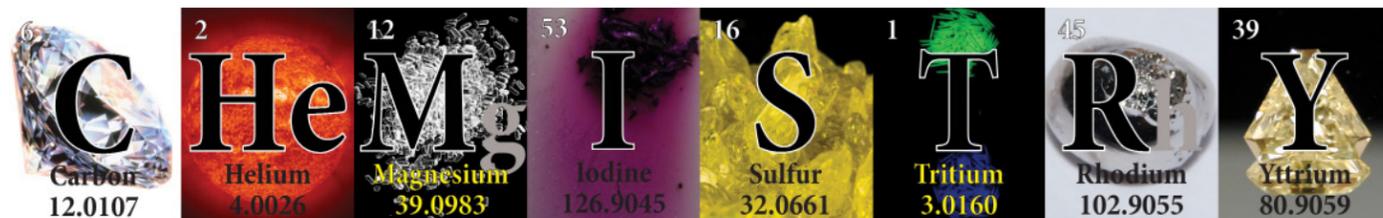
Dr. Allen Thomas is diligently working on material for his Organic Chemistry class.



Dr. Christopher Exstrom is pulling his hair out. Just kidding. He is also working on his material for general chemistry.



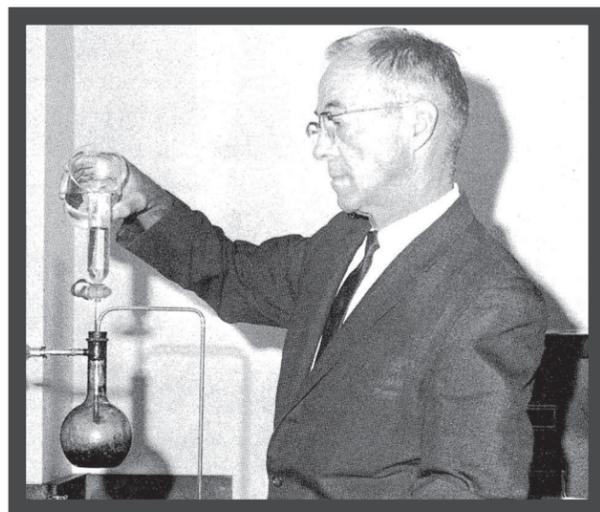
Two of our students [Samantha Rau (left) and Joe Griffith (right)] are hard at work during this time. It may be in a different location than normal, but they are making it work.



## 40th Anniversary of Don Fox Lecture Series

During our 40th Anniversary of Don Fox Lecture Series, we will be inviting back seven of our former speakers to give another talk on seven Friday afternoons during the Fall 2020 semester. Dr. Donald Fox has had a lasting impression in our department, and we wanted to celebrate our 40th Anniversary with a special Don Fox Lecture Series.

Don Fox was hired by Kearney State Teachers College in 1936. At that time, the department had a very large number of majors as interest in the sciences began growing dramatically. He was a prominent and influential figure in the department; serving as its chair and expressing his interest in science, and in the success of students that were fortunate to call him their instructor. His dedication to the education of students and his development of a solid and vibrant chemistry department continues to live on in the current faculty.



Dr. Donald Fox performing a reaction.

### Alan Luedke

Friday, September 4, 2020

**What are you doing now?** I am still working at ICT Chemicals in Georgia as a research chemist. Largely focused on making new-old chemistry effective/more effective as replacements for fluorinated products.

**What will your presentation be about in the fall?** My talk will be entitled, "Commercial Chemistry – is there anything interesting it it...other than money? Redux."

**What was your favorite memory at UNK?** I have many great memories at UNK ranging from afternoon pick-up basketball games to my summer research project with Dr. Blickensderfer to the occasional late night outing with friends (when perhaps I could have focused a bit more on studying).

**Who was your favorite chemistry professor?** As a freshman I recall covering in the back row (if there was room) in Dr. Swanson's 8 a.m. general chemistry lecture hoping I would not hear my name as he would frequently ask 'Mr. or Miss \_\_\_\_ what do you think happens next?', and feeling a sense of accomplishment that I survived at the end of the semester. I recall Dr.'s Kaufman and Roark bringing a clarity to organic chemistry at a level that I began to believe I might like a career in chemistry. Dr. Blickensderfer gave me a foundation to analytical chemistry which I consider a strength to this day (and hopefully that is not a Dunning-Kruger effect). And finally after getting through physical chemistry with Dr. Kuecker and some help from Dr. Sterner, I believed I had a shot at surviving graduate school.



### Joe Macomber

Friday, September 18, 2020

**What are you doing now?** I am still the Separation Sciences Product Manager at Molex, LLC. I manage the fused silica capillary tubing line of products.

**What will your presentation be about in the fall?** I will stick to a similar script from my 2015 seminar, but expand the presentation with graphics of the technology and recent uses of capillary tubes in clinical diagnostic platforms, especially with our new commercially available sub-1um capillary tubing.

**What was your favorite memory at UNK?** It is hard to pick just one. But I'd have to say it is the day that Paula Geist (aka Paula Walla Bullfrog) decided to play with the Velcro on my tennis shoes in the middle of a lecture in a class called The Tragic Vision. It's a great story about how the smallest thing can change the trajectory of one's life.

**Who was your favorite chemistry professor?** Dr. Roark challenged me like no other and instilled an unquenchable desire to achieve perfection. I'd have to put him at the top of the list. But, Dr. Kaufman's summer project on the Synthesis of Lactones from Omega-halo Carboxylic Acids using Crown Ethers as Phase Transfer Catalysts without question got me my first job (its part of the tennis shoe story above). Dr. Blickensderfer's Instrumental Analysis course proved "instrumental" countless times in my career and he is the first one to mention PittCon, a show I've now attended 29 times. I could go on.

### Dori Hunt

Friday, October 9, 2020

**What are you doing now?** I am in private practice at Piedmont Plastic Surgery & Dermatology in Hickory, NC. I am one of the dermatologists and have been with the practice for 17 years.

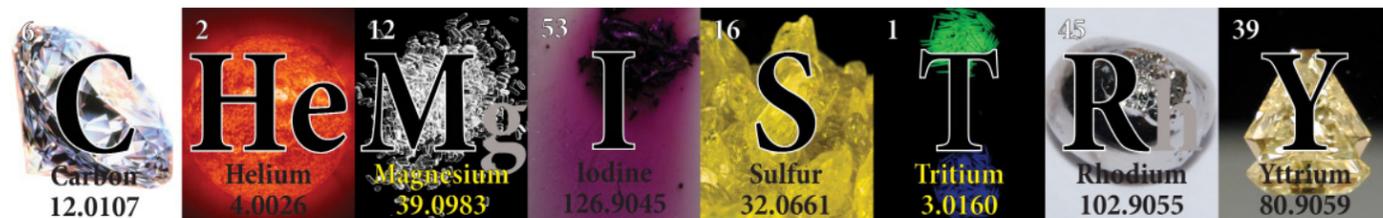
**What will your presentation be about in the fall?** My talk will be entitled, "A Day in the Life of a Dermatologist." I will present different patient scenarios and discuss how chemistry applies to each one.

**What was your favorite memory at UNK?** My favorite memory was spending time studying for exams with other chemistry majors.

**Who was your favorite chemistry professor?** My favorite professor of all time throughout all of my schooling (not just chemistry) was Dr. Don Kaufman. He was world class.



COMMUNICATIONS  
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## Tyler Martin

Friday, October 16, 2020

**What are you doing now?** I am the CEO of Adjuvance Technologies in Lincoln NE. We are a vaccine adjuvant company working to enhance the immune response to vaccines, including COVID-19.

**What will your presentation be about in the fall?** The chemistry that lead to our lead product. Our story involves the reduction to synthesis of a complex botanical molecule, then the rational interrogation of the structure to determine specific activities of different parts of the molecule, then the identification and synthesis of improved analogues that resolve some problems of the natural molecule. The presentation will include both chemistry and immunology with some clinical medicine background.

**What was your favorite memory at UNK?** Hard to select one.....I met my wife at Kearney, grew as a person, student and athlete.....perhaps my favorite memory was P Chem with Carl Sterner! Most of my scientific or medical friends don't have a positive memory of P Chem....but Dr. Sterner's class was fantastic! Great Professor and great student colleagues.

**Who was your favorite chemistry professor?** I had many favorites in Chemistry, Biology and English.... but my absolute favorites were Jim Roark and Carl Sterner.



## Charles Sizer

Friday, November 6, 2020

**What are you doing now?** I am putting on a zoom session for Lakeland University on how to minimize your exposure to the coronavirus by changing your food habits. We will talk about shopping for groceries once a month, disinfecting surfaces etc. Should be a fun session. I also have a project in the UK developing a shelf-stable dairy creamer dispenser. We are filing patents next week on the concept. In general, trying to stay out of trouble.

**What will your presentation be about in the fall?** For my session next fall, I am planning to talk about a probabilistic approach to food safety based on the Arrhenius equation. We will take a look at modeling microbial inactivation for thermal, chemical and high-pressure processing. It is so amazing in that it all goes back to basic chemical kinetics.

**What was your favorite memory at UNK?** My favorite memories of UNK are working construction on the Chemistry Building and Bruner Hall of Science, being introduced to calculus and falling in love with chemistry.

**Who was your favorite chemistry professor?** I remember Dr. Swanson, Dr. Blickensdorfer and Dr. Fox...also Bruce Stuart introduced me to calculus.



## Brian Leonard

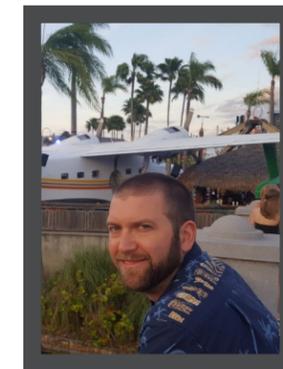
Friday, November 13, 2020

**What are you doing now?** I just returned from a sabbatical in Aachen Germany where I was studying computational chemistry with Richard Dronskowski at RWTH Aachen University. While the sabbatical was cut short due to the outbreak of COVID, we are still collaborating on a couple of projects.

**What will your presentation be about in the fall?** We are currently studying novel two dimensional (2D) metal oxyhalide materials such as  $WO_2Cl_2$ .

**What was your favorite memory at UNK?** My favorite memory was going to a regional ACS meeting in Lawrence KS with Prof Michael Mosher and several other students. It was my first ACS conference and the first time I presented a poster outside of UNK. The experience really changed the way I thought about chemistry and research and got me interested in graduate school.

**Who was your favorite chemistry professor?** Chris Exstrom was my favorite professor. During my time at UNK I did research with him on Cadmium based complexes their solvatochromic behavior. The project got me hooked on synthesis and showed me that not all reactions work as well as the ones in general chemistry labs. Failure is a necessary evil of research and more of an opportunity to problem solve than a dead end. His inorganic chemistry course also introduced me to many brilliantly colored compounds. His classes were always fun and exciting and he was a great research mentor.



## William (Bill) Clark

Friday, November 20, 2020

**What are you doing now?** I'm a Professor of Pathology and Clinical Chemist at Johns Hopkins in Baltimore.

**What will your presentation be about in the fall?** I will speak about the use of mass spectrometry in clinical toxicology and substance use treatment research.

**What was your favorite memory at UNK?** I don't have a specific favorite memory; most all of them are good ones. I enjoyed the courses and professors, intramural sports, and campus life in general.

**Who was your favorite chemistry professor?** My favorite Chemistry professor was Pete Blickensdorfer; he taught me Analytical Chemistry (Quantitative Analysis, Instrumental Analysis). Working with him is what got me pointed toward graduate work in Analytical Chemistry.

Depending on how the fall semester turns out with COVID-19, we are planning for the talks to happen on campus, but we are prepared to have them done through Zoom depending on what is happening on campus. It will be decided on a week-by-week basis. If you have questions about a given talk, please email Drs. Darveau (darveusa@unk.edu, Chemistry Department Chair), Kounovsky-Shafer (kounovskykl@unk.edu, Don Fox Lecture Series co-chair), or Kegley-Owen (kegleyowencs@unk.edu, co-chair Don Fox Lec. Series) about each talk.



## Recognition of Our Graduates

Students listed have a Chemistry major or minor. Students that graduate with a Chemistry major have an asterisk (\*).

### Fall 2019

Brandon Shundoff\* Kearney, NE

Kearney, NE

### Spring 2020 continued

Carli Pofahl\* Kearney, NE

Allison Riley York, NE

Brooklyn Venteicher\* Omaha, NE

### Spring 2020

Treyvon Bokoskie\* Kearney, NE

Kearney, NE

Lydia Fritsche\*

Maywood, NE

Akshay Kashyap\* Kearney, NE

Hastings, NE

Although we couldn't have the normal end of the year celebration, we wanted to wish all of our graduating seniors the best!



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DEPARTMENT OF CHEMISTRY

University of Nebraska Kearney



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