Year Eight Was Great!

We are almost finished with year eight of the UNMC High School Alliance program. As some of you know, we started this journey in the 2010-2011 school year and have been growing ever since. We had 32 students that first year and now with the addition of our stellar seniors, we have over 70 students in the program. We had four classes and now we have 10.

As we conclude year eight, we have to look ahead to 2018-2019. Next year you will see us with six class offerings in the fall semester and six class offerings in the spring semester. We are going to bring back a class for next year and add a brand new one. More on that in our Fall 2018 newsletter next October.

I am looking forward to the 2018-2019 school year and seeing our alumni return to campus to begin their professional school careers and meeting the new students who want to be a part of this program.

I want to thank everyone who makes this program what it is. The Sherwood Foundation, the Omaha Public Schools, all of our participating school districts, the UNMC faculty, the UNMC staff and professional students; Nebraska Medicine, and of course all of the students who come to class everyday ready and willing to learn about healthcare and all of the different careers they can pursue.

Have a great summer everyone. We will be back in August 2018! -- Heidi
Pharmacy

For the third year, Dr. Christopher Shaffer led the Introduction to Pharmacy course. Within this course, students were exposed to the different aspects that make up the role of a pharmacist. They were also given the opportunity to learn the role pharmacists play as part of a medical team when caring for patients.

Dr. Shaffer invited 10 Pharmacy students, ranging from 2nd to 4th year, to present specific concepts to the students through lectures and activities. Dr. Shaffer's tag-line “Better living through Chemistry” guided instruction. Students were introduced to multiple concepts including: pharmacognosy, drug discovery, drug formulation, pathophysiology of cardiovascular disease, anti-cholesterol pharmacology and therapeutics, and personalized medicine.

Through lectures and hands-on activities, students gained an understanding that the role of a pharmacist goes well beyond just being able to count by 5’s. Students were given the opportunity to learn about drug development from Dr. Martin Conda Sheridan and Dr. Corey Hopkins, and spend a day in their labs seeing first-hand the process of developing new drug therapies. Student were also able to utilize the model pharmacy to try their hands at creating IV bags for ‘medication’ distribution.

Dr. Patrick Fuller with Nebraska Medicine provided the students the opportunity to shadow different pharmacist, from varying specialties, within the hospital. Spending the class time with the pharmacist, and seeing the different professionals that the pharmacist interacted with, really connected the students to the concept that the role of a pharmacist is changing, with one student saying “my biggest take away was learning the wide range of roles a pharmacist plays in clinical care and how they make rounds with the other specialists, rather than being a second party that's reported to, pharmacists are making decisions for patients and they help determine different treatments.”

By: Jaynie Bird, MS Certified High School Teacher
Behavioral Health

Intro to Behavioral Health: Concepts and Career from Family Therapy to Forensic Psychiatry was led by Dr. Kristen Hembree. Two doctoral student interns, Christian Klepper and Patty Nuhfer, joined Dr. Hembree in presenting content and leading activities.

Students have been fortunate to hear from behavioral health researchers and clinicians, who talk about not only their field of expertise and practice, but also their educational background and career path. During our class time, students completed an eight-hour certification course in Youth Mental Health First Aid. Each student successfully completed the course and the exam and now carry the certification.

Throughout the semester, students developed mini-lessons to give their peers a bit of background information before a guest speaker or field trip went deeper into a subject. It was nice to see how many of the high school students have natural teaching ability.

A highlight of semester was visiting Project Harmony, as well as Quality Living, Inc. While the mission of each is vastly different, behavioral health clinicians play a key role in caring for some of the most vulnerable members of our community. We are so fortunate to have both agencies in Omaha and we appreciate them opening their doors to the High School Alliance students.

By: Michele Merrill, MA, Certified High School Teacher

HOSA – Future Health Professionals

Nebraska Medicine and UNMC hosted the annual state leadership conference for HOSA – Future Health Professionals on March 19-20, 2018. The UNMC chapter won medals in 13 different events and qualified for the international conference in Dallas, Texas which will be held the last week of June 2018.

Thank you to all of the students who participated and congratulations to all of the medal winners including our students who competed with their home high school HOSA chapters and our alumni.

Good luck and have fun in Dallas!
Anatomy

This year marks the eight year of the HSA Anatomy course and for the first time the class was supported by numerous Masters of Anatomy students. Masters students were able to provide insight during specimen exploration and examinations. The Masters students were also available to help answer questions during open review times.

Thirty-six High School Alliance students were enrolled in the Anatomy course this spring. Drs. Simet and McCumber, faculty in the Genetics, Cell Biology, and Anatomy Department, completed their second year as co-leads for the course. Dr. Binhammer, a veteran within the department, also played a critical role in lectures and lab support. This year focused on both the upper and lower limbs, but also included materials on the cardiovascular, respiratory and GI systems. These new additions allowed for the students to expand their knowledge of all the different parts working as whole within the human body.

Dr. Simet and Dr. McCumber strengthened the discovery of the human body through hands-on activities and the use of the Complete Anatomy app. The students were able to use iPads on loan from the Genetics, Cell Biology, and Anatomy Department to complete many of the assignments from the course. They were also encouraged to use the iPads as a study tool to utilize the Complete Anatomy app, online resources, and materials found on Canvas. The students were presented the chance to complete the anatomy units threaded with gross anatomy, radiology, physiology, and living anatomy elements. The students had opportunities to take what they had learned during small group sessions and apply it to resistance training in the UNMC Student Life Center Gym.

By: Jaynie Bird, MS Certified High School Teacher
Study of Patient Care

Under the direction of Dr. Connie Miller, students have explored the many roles of nurses and other providers in today’s healthcare environment. A constant thread throughout the semester was improving communication with patients and families.

Students learned from professionals in the fields of neonatal intensive care, trauma/flight nursing, speech language pathology, dietetics, athletic training and orthopaedics to name a few. Students discussed the impact of seizures, diabetes and stroke on the individual, the family and the community. One highlight of this semester was visiting the Madonna Rehabilitation Hospital-Omaha Campus. We not only had a presentation by Madonna staff, but were able to tour their amazing facility.

Students participated in a class with staff from the Nebraska Medicine orthopaedics clinic where they learned about a variety of traumas. The class included a lesson on how to apply a cast to the arm, and students had an opportunity to practice on a classmate. Needless to say, many photos were taken that afternoon!

The semester is ending with student presentations. Each small group is responsible for teaching their peers about working with special populations in a healthcare setting, as well as in the community. Students created an awareness campaign to go along with their teaching project and are hoping to help their peers and family learn more about the needs of members of our community.

By: Michele Merrill, MA, Certified High School Teacher

Samantha Wood (Omaha Burke) learns how to take the blood pressure on Jon Paul (Omaha Central).

Htee Klee Paw (Omaha South) has her blood pressure taken by Sekina Yaseen (Omaha Central) in the Study of Patient Care class.
Genetics

The Genetics class was a challenge for its students this semester. However, with the expert help of Dr. Maurice Godfrey the students expanded their knowledge. Students completed simple Punnett squares determining the genotypes of offspring and traced inherited diseases through a pedigree. Students explored how genes can be linked and how often recombination events occur. Students also learned how to calculate the frequency of recombination events and how to map the location of genes on a chromosome.

Genetics students each submitted a saliva sample to the 23 and Me company. Results of the 23 and Me testing were used for ancestry analysis and discussion of ancestral origins.

Of course, with scientific knowledge there are ethical and societal implications. As students delved deeper into the procedures used to explore the human genome, discussions about why and if these procedures should be used arose. Students viewed the futuristic movie “GATTACA” and reflected on whether or not parents should be able to choose to take out genetic alleles for disease, or to choose phenotypic traits including; height, weight, eye or hair color. All Genetics students read DNA USA by Ryan Sykes. Sykes uses genetic markers to trace the ancient origin of different populations and speculates the migration patterns that lead to their modern locations. Each student also chose a novel to read that discussed different aspects of modern genetics and the role they play in today’s society. Students wrote a book report based on their novel choice and reflected on the concepts presented and the influence they would have on them personally.

During the rest of the semester, students explored how DNA fingerprinting for identification and to solve crimes. Once students became experienced in running electrophoresis gels, students spliced DNA and inserted the resulting pieces into bacterial plasmids, which expressed a new phenotype. They glowed! Students were introduced to the use of genetically transformed bacteria as an intricate part of producing and delivering medication. Students also learned that while gene transformation can be used to transform the phenotypes of bacteria to make them glow or to produce human insulin and hormones, they can also be used by UNMC researchers in the quest to cure cancer.

By: Terri Gulick, MS Certified High School Teacher
UNMC High School Alliance Alumni
The Classes of 2011 · 2012 · 2013 · 2014 · 2015 · 2016 · 2017 and 2018


Elkhorn High: Emma Fanning 2017


Louisville: Madalyn McFarland 2012.


Murray Conestoga: Kaylyn Weilage 2018.


**Papillion La Vista:** Courtney King 2011; Stephanie Schiffert 2013; Nathaniel Vaughan 2013; Dylan Ashby 2015; Sydney Rheault 2015; Emma Taylor 2017, Isabella Haave 2018.


**Platteview:** Mitchell White 2017, Braedyn Lenker 2018.


^ Denotes Second Year Senior 2015
*Denotes Second Year Senior 2016
+Denotes Second Year Senior 2017
#Denotes Second Year Senior 2018

The Class of 2018 ice skating at the Ice of UNMC.
The Stellar Senior class this year completed independent studies in labs that researched types of pediatric cancers, pancreatic cancer, infectious diseases, and mosquitoes that carry the Zika virus. The Stellar Seniors also took classes and served on the Honor Council. We wish this class of Stellar Seniors the best of luck on their future health care careers.

Alicia Hogan, Omaha South: College of St. Marys

Mohamad Hazim, Omaha Burke: University of Nebraska Omaha UHOP or Brown University

Delaney Murphy, Papillion LaVista South: University of Nebraska at Omaha

David Bridges, Papillion LaVista South: University of Nebraska at Omaha

Alexandra Gaeth, Omaha Burke: University of Nebraska at Omaha

Madelene Portillo, Omaha South: University of Nebraska at Omaha UHOP

Top and bottom photos left to right: Alicia Hogan, Omaha South, Mohamad Hazim, Omaha Burke, Delaney Murphy, Papillion LaVista South, David Bridges, Papillion LaVista South, Alexandra Gaeth, Omaha Burke, and Madelene Portillo, Omaha South – The UNMC High School Alliance Stellar Seniors 2018.