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SEPA PROGRAMS— 2022

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SEPA Program Co-Directors

Welcome to a new academic year and we are all very hopeful that we can begin to return to pre-pandemic engagement with your schools and communities. As you know, we are always willing and available to bring health and science programs to your schools.

This past summer saw the return of all of our in-person programs and for that, we are grateful to all our community and school partners and most importantly our student and teacher participants. Our flagship program, the middle school Health and Science Fun Camp, returned following a two-year pause. Students were treated to some of our usual activities, like the chemistry show and some new programs featuring virtual reality in medicine. A trip to the Omaha Zoo and Aquarium was another highlight of the camp.

Our career exploration at the Munroe-Meyer Institute featured a survey of various research careers in working with people with disabilities. The one-week program introduced students to working with people with developmental and neurological disabilities, speech and language pathology, recreational therapy, feeding disorders, genetics and genetic counseling, and psychology and severe behaviors.

Our Indigenous Summer Program for Advancing Research Knowledge (I-SPARK) moved from a virtual program in the summer of 2021 to an in-person program in the summer of 2022. The one student who participated in both praised the return of being able to work in person. Over the course of five weeks, high school students participated in a variety of team building, career exploration, skills enhancement, and health and science investigations. Field trips to

various campuses including Creighton University, University of Nebraska Omaha and Lincoln campuses augmented their time at UNMC. We hope in future years to be able to host students in dorms for at least two weeks of I-SPARK.

Our teacher professional development workshop returned as well. Teachers from five partner schools helped to re-design and enhance some of the mathematics activities that we have used to better reflect their needs. You will see these math cards have a new look. To reach more students we developed a set for elementary grades. We look forward to your feedback and sharing how these cards impact your students. Thank you to all the teachers who participated and helped to share their knowledge, passion, and creativity in math. Images of some of these cards can be seen in this Newsletter.

Having students come to UNMC on class trips is welcomed. Fifth grade students from the Wagner Community School returned to UNMC for a day of "Technology in Medicine". We are happy to help arrange visits for others as well.

The NIH Science Education conference returned to an in-person meeting in Washington, DC. You can read a brief summary in the YES Newsletter. As noted there, we are offering to take a teacher from one of our SEPA-YES partners to the next NIH SciEd conference May 30 to June 2, 2023. If you are interested, please let us know.

As always please let us know how we can help, we look forward to visiting your schools during the 2022-2023 academic year.

Marty Indian High School and Andes Central Elementary School Visit May, 2022

SEPA has been involved in outreach

activities for many years, and our program provides a great opportunity to expose students to science at this early stage, to help them build a continued interest and plan a future career in science. SEPA team members visited Marty and Lake Andes Schools (May 9-11, 2022) and organized **Family Science Day: Magic of Chemistry, Chemicals and Cancer**. Students loved to see some of the magic of chemistry experiments (e.g., elephant toothpaste, turning copper to silver then gold, etc.) performed by SEPA team member Dr. Kumar. Although these were very inspiring and entertaining science experiments using various chemicals, during this family science day interactive learning event for native American elementary, middle, and high school students, the causes of cancer and exposure to chemicals and radiation during childhood and the risk and ways to prevent cancer were also discussed with a focus on youth.





Wagner School Students (5th Grade) Visit to UNMC—May 13, 2022

More than 40 students visited the University of Nebraska Medical Center (UNMC) and engaged in various hands-on activities related to “Technology in Medicine.” The pictures below show the Motion Analysis lab at the Munroe Myer Institute (UNMC), where students are engaged in learning biomechanics, engineering, and brain imaging to quantify movement disorders for the treatment of individuals with cerebral palsy and other movement disorders. They also visited a recreation therapy lab to improve physical, cognitive, social, and emotional functioning. This was a great opportunity for them to explore science, engineering, and technology outside of the classroom.



SEPA Math Teacher Focus Workshop

At the Marriott Hotel, Sioux City, Nebraska from June 27-29, 2022.

After a gap of two years, our teacher professional development workshop returned as well. This year the topic of the workshop was “Exploring Math vocabulary and Visual Aids”. Our teacher professional development workshop returned as well. We had teachers from five of our partner schools (McLaughlin School District, Walthill Public, McLaughlin Middle School, Winnebago Public and Marty Indian School) participated in this workshop. They were asked to help to re-design and enhance the math cards that we have used to better reflect their needs. You will see that the math cards have a new look. We also took some of the cards and created an elementary set for K-3, which has 24 cards. The regular set of math cards has increased in number from 38-69. We are excited to get feedback on the new look and additional cards to hear what you think and how it impacts the students in your classrooms. Thank you to all the teachers who participated and helped to share their knowledge, passion for math and creative ideas.

SEPA SUMMER HEALTH & SCIENCE FUN CAMP (JUNE 5-8, 2022)

SEPA science camp is one of our key programs which stimulate interest in science and provides direct interaction with scientists and researchers. This year more than 20 students (K-12) from 5 different schools participated and the topic was “Technology in Health Science” held in Omaha. The participating schools were McLaughlin Public School, Umo^{ho} Nation Public School, OPS NICE program. And Winnebago Public School. The program started with a camp rules by Ms. Liliana Bronner and a very exciting and entertaining chemistry show by Dr. Eric Hass. As seen several pictures below, four days programs were filled with many science hands-on activities which included Robotics Coding at the University of Nebraska at Omaha, Anatomage lab: digital viewing and learning of different parts of human body. They also visited one of the premiere facility at the UNMC—Davis Global Center which is a highly advanced clinical simulation facility designed to foster the practice of patient care.





SEPA SUMMER HEALTH & SCIENCE FUN CAMP (JUNE 5-8, 2022) : As shown in the pictures below, students are engaged in varieties of the visualization modules at the iEXCEL (Interprofessional Experimental Center for Enduring Learning) which included clinical and surgical simulation lab. We also visited the Omaha zoo behind the scene activities —learning about science careers and different animals habitat. Students were deeply engaged in several fun science activities. They loved all the programs and were involved in discussions and asked many questions - that was great learning interactions. This is a huge for the students to get excited about science and continue their interest to finish schools and hoping that they become science professionals.



Career Exploration for High School Students—June 20-24, 2022

SEPA organized a week long shadowing and learning experience at the

Munroe-Meyer Institute (UNMC). This year six students from the following schools Omaha North High School, Central High School, Benson High School, Millard South High school, Omaha South High School took part to learn science in a fun way geared towards career opportunities. The program provided a better understanding of professions that help people living with disabilities. Students were actively engaged

in the following professions: Speech language therapy, Physical and recreation therapy, Genetics, Psychology, Pediatric feeding disorders, Neurodevelopmental related disorders and Motion analysis and virtual reality lab to quantify movement disorders for treatment strategies.





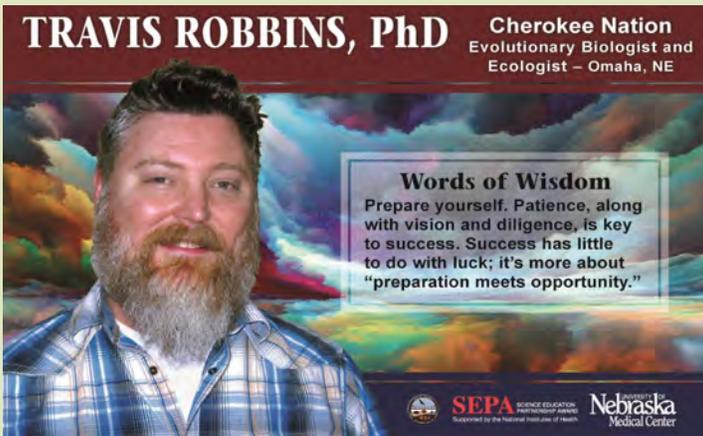
Summer Program For Research & Careers in the Health Sciences for High School Students - I-SPARK (Indigenous Summer Program for Advancing Research) June 27 - July 29, 2022

I-SPARK is a new program offered by SEPA. It stands for Indigenous Summer Program Advancing Research Knowledge. Up to 12 high school students can take part in this five weeks summer program that provides an understanding of basic laboratory procedures and techniques. The program aims to make participating students competitive applicants for college and other summer research internship programs offered by NIH and other institutions. Due to pandemic, we could not host this program in person last year. However, this year we were fortunate to organize this program in person. We had total 8 students from the following schools: College of St. Mary, Benson High School, Omaha North High School, Central High School and Westview High School. Students enjoyed the hands on activities and learned a lot about research careers in health sciences. Several faculty members from UNMC, UNO and Creighton University took part and the following topics were covered: **Lab Safety 101, Intro to Chemistry & Chemistry Lab, Engineering for Healthy Communities, Computational Biology, Ethics in Genetics Research, Neuroscience Clinical and Lab Research, Professional and Personal career and Academic Development Topics.**



SEPA Role Model Poster Project

The Role Model Poster Project features Native Americans in many health and science professions. Each poster includes the name, photograph, and tribal affiliation of the person featured. Additional information for teachers include: education, benefits, motivation, special job skills, and words of wisdom. These posters proved to be a great source of inspiration and motivation to the students and teachers. There are currently ten sets of posters and each set features five tribal members.



ANNOUNCEMENTS /UPCOMING EVENTS / NEWS

1. **SEPA BOARD MEETING**
Date: Friday, September 17, 2022
Time: 10 AM - 2 PM
2. **I-SPARK—Fall Program at UNMC**
Date: October 31st, 2022
Time: 10 AM - 3 PM
3. **I-SPARK—Spring Program at UNMC**
Date: February 20, 2023
Time: 10 AM - 3 PM
4. **Visit to Different Partner Schools**
September—December

Email us with your questions at sepa@unmc.edu
Visit our website: www.unmc.edu/sepa