

# YES! Newsletter

Youth Enjoy Science

## September 2024 Newsletter Volume 11

University of Nebraska Medical Center, Munroe-Meyer Institute, Eppley Institute and College of Public Health

### Cancer Education Resources

The YES program offers cancer curriculum resources, including e-learning modules, cancer vocabulary tools and comic books.

#### Access these at:

<https://www.unmc.edu/eppley/outreach/cancer-education-resources.html>

### Newsletter Committee:

Genesis Saul-Hooper  
Regina Idoate  
Joyce Solheim  
Misty Pocwierz-Gaines  
Aislinn Rookwood  
Maurice Godfrey

## Join us in welcoming, Genesis Saul-Hooper!

We would like to welcome the newest YES team member, Genesis Saul-Hooper. She will be taking on the position of YES! Program Manager working closely with Drs. Aislinn Rookwood and Regina Idoate.

Genesis Saul-Hooper is an enrolled member of the Isanti Dakota Nation located on the Santee Reservation in Northeast Nebraska. She received her undergraduate degree in Child, Youth, and Family Studies at the University of Nebraska-

Lincoln (UNL) and will be starting a master's program in the fall at UNL to further her experience in student affairs focusing on Native Youth interest and retention in higher education. Before being the YES Program Manager, she was an Education Specialist for the Omaha Public Schools, Native Indigenous Centered Education (OPS NICE) Title VI-funded program where she was able to work with YES and other community-based programs that supported local Native students in Omaha and surrounding areas. She has also supported and led a multitude of youth educational programming in higher education settings through UNL, YMCA, and TRIO/Upward Bound.

She is eager to be a part of our team and continue working with our students and staff in her new role.



# Education Spotlight: Cancer is a Native American issue!

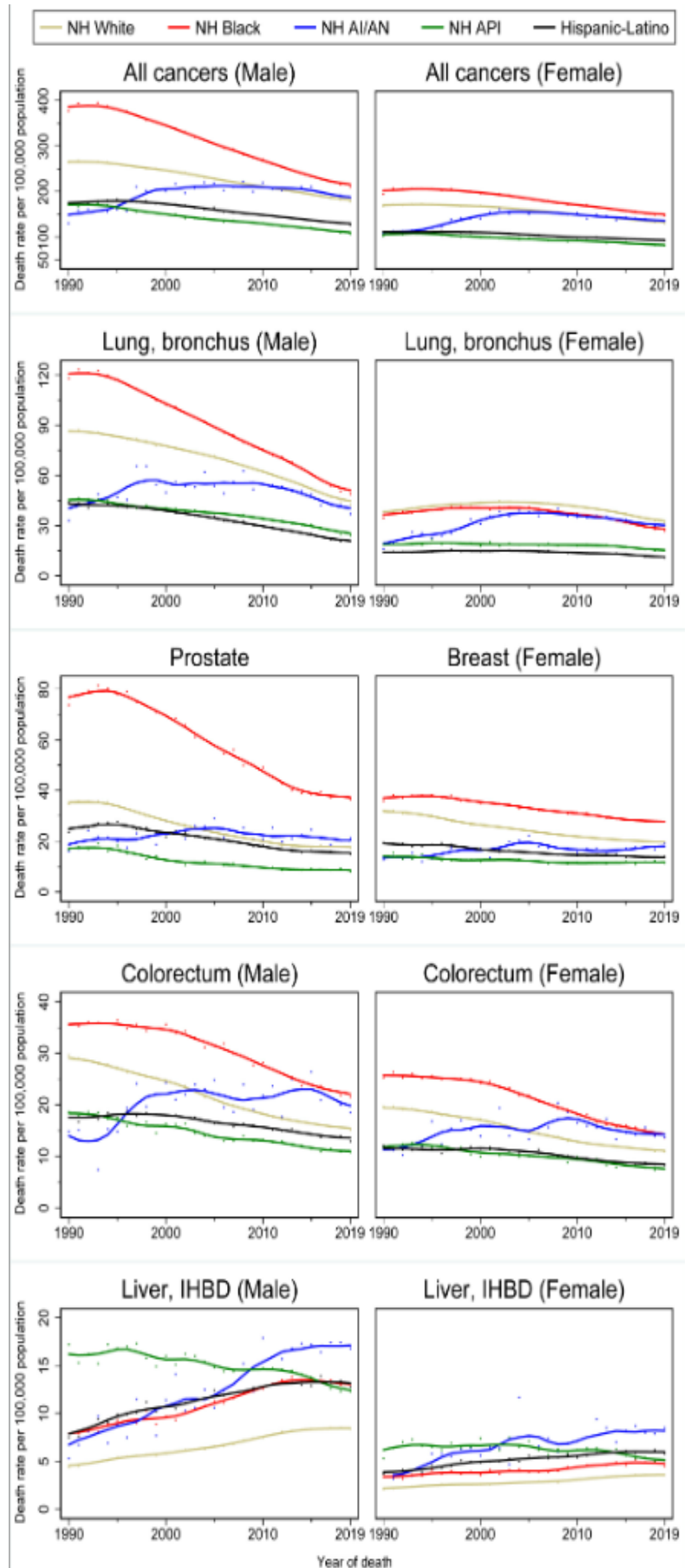
Within Native communities, there are a wide range of *health disparities* that affect our communities, including urban and rural, more than others across the country. Some of the disparities often heard are diabetes, obesity, asthma, sexually transmitted infections (STIs), and even mental health, especially suicide and substance use.

Cancer is a less discussed health disparity that is also greatly impacting Native communities. A recent study published by Islami, Farhad, et al. found that American Indian and Alaska Natives are more likely to die from cancer diagnoses than most other racial groups in the United States (2022).

As shown in the figure on the right from this article, there is an increasing trend in cancer deaths such as lung, breast, prostate, and liver for American Indians, whereas these trends are decreasing for most other groups, with the exception of liver cancers (Islami et al., 2022). How do we decrease these numbers and stop these trends?

There is not one simple answer to this question. Some steps could be promoting cancer awareness in Native American communities through educational events, promoting cancer screening, and having discussions about what cancer means to the community.

Youth Enjoy Science (YES) has also been identified as a cancer awareness and prevention method that involves training and educating Native middle school, high school, and undergraduate students in cancer research (Islami et al., 2022). Many of the studies students work on utilized community engaged research methods, so they are learning a known approach to helping address these disparities (Islami et al., 2022). Let's keep up the good work and continue bringing up cancer as a Native American Issue!



Islami, F., Guerra, C. E., Minihan, A., Yabroff, K. R., Fedewa, S. A., Sloan, K., ... & Jemal, A. (2022). American Cancer Society's report on the status of cancer disparities in the United States, 2021. *CA: a cancer journal for clinicians*, 72(2), 112-143.

## YES! Outstanding Research & Creative Activity Award Winner – Carmela Rigatuso

Carmela Rigatuso has been working with the University of Nebraska Medical (UNMC), Youth Enjoy Science (YES) research education program for five incontinuous years. She is currently working to complete her final year of her undergraduate degree in criminology with a minor in public health from the University of Nebraska-Lincoln (UNL) and plans to pursue a Master of Public Health in Health Promotion at UNMC. Ms. Rigatuso is a member of the Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS), American Indian Science and Engineering Society (AISES), and American Association for Cancer Education (AACE). Ms. Rigatuso has developed extensive experience in qualitative, community-engaged, and environmental health research methodologies. She has completed CITI and CBPR training, obtaining certificates in these critical ethics courses. She began participating in the YES program in high school. In her early participation in the YES program, she worked with Dr. Aislinn Rookwood and Abdoulaziz Abdoulaye investigating how heat may vary between historically redlined communities and areas not historically redlined and how this specifically affects Native American communities that experience significant health disparities, including cancer disparities. This project led to a presentation with the Pediatric Environmental Health Specialty Units (PEHSU) Region 4 program's Break the Cycle conference at Emory University in Atlanta, Georgia in April 2023. As an undergraduate at UNL, she reconvened her participation in YES with an internship through the Summer Undergraduate Research Program (SURP) with YES. With her mentors, Drs. Regina Idoate and Aislinn Rookwood, she conducted interviews, coding, and scoring as part of a community readiness assessment to address cancer amongst the urban American Indian community in the Omaha metropolitan area. Through this internship, she is contributing to two publications. For one publication, she will serve as the lead author. This publication will be part of her honors thesis research at UNL. In addition to her academic contributions, Ms. Rigatuso has been active in promoting opportunities for youth through her own personal commitment and involvement in the YES, UNMC, and greater Omaha and Lincoln communities. Carmela is exceptionally active in a multitude of community and extracurricular activities. Notably related to her academic goals, she was the president of the Health Occupations Students of America (HOSA) chapter at her high school. She is also an active member of the American Indian Science and Engineering Society (AISES) and is currently the president of the University of Nebraska Inter-Tribal Exchange (UNITE) chapter at UNL. She also participated in the College of Medicine cohort of the Robert Wood Johnson Foundation-funded Summer Health Professions Education Program (SHPEP) at the University of California-Los Angeles in 2023. Throughout my experience working with her, she has shared that her goals go beyond personal achievement alone. Her motivation in pursuing public health and research is to serve the Native American community with which she identifies.

### Team Spotlight: Education & Curricula Consultant – Sonja Kirksey



Sonja Kirksey, MA, is a certified teacher in Texas and Nebraska. Mrs. Kirksey was born and raised in Omaha, Nebraska. She received her Bachelor of Science in Education and Master of Arts in Leadership & Ethics from Bellevue University in Bellevue, Nebraska. She is married with four children. She lived in the Dallas, Texas area for about 13 years and where she primarily raised her children. She has had a broad range of experience in education ranging from early childhood education (ECE) to middle school. Her primary teaching areas have been mathematics and science, although she has taught all subject areas. ECE was her start in education and where she found her calling as an educator. Mrs. Kirksey currently serves as an ECE Observer and Coach with the Nebraska Department of Education, Science, Technology, Engineering, Art, and Mathematics (STEAM) Director for Cues Catholic Schools, and now the Education Curricula Consultant for the YES Program.

# Current YES Programming

## YES Indigenous Research Education Science Experiences and Real Community Habitats (IRESEARCH) Club for 2023-34 school year

In 2023-2024, 36 middle school students participated in IRESEARCH and learned about one of the leading causes of lung cancer, radon. Students were presented with a Radon & Cancer Comic book, developed and illustrated by Eliana Sitting Eagle (Oglala Lakota, high school STEAHM club and Cancer Research Intern participant). A review of radon and the significance of radon as a health concern amongst NA communities was discussed. Several examples of tribal health and environmental protection agencies that were conducting outreach, training, testing, and mitigation for radon were specifically identified. During facilitated small group discussions, different careers of individuals working to address radon exposures and the importance of identifying radon as a significant health hazard attributable to cancer risk were identified.

In response to the overall research question "Does my home have elevated Radon levels (or levels greater than 4 pi/L)?," students shared their individual hypotheses in response to the research question. About 90% of students believed that their homes would have elevated radon levels greater than 4 pi/L. Students were offered the opportunity to measure radon in the indoor air of their home. Students learned about radiation, how radon is measured, the health effects associated with radon, how radon is hypothesized to damage the lungs in the body, how much radon occurs locally in Nebraska, and what we can do if radon levels are too high in our homes with the help of Healthy Housing Omaha. As part of this project, students also completed the Radon & Cancer e-learning module.

Student participants learned how to: conduct radon samples, transcribe field notes, manage data, and summarize data. Students met at the University of Nebraska Medical Center, College of Public Health with the YEs program to review the results of the data from their sampling and discuss how this data could be presented. Students created their own t-shirt design

incorporating concepts of health promotion to address the importance of protecting water from contamination (Figure 9). students found several notable results:

- Of the students who tested, 100% were above the regulatory limit set by the Environmental Protection Agency.
- Radon exceeded the regulatory limit set by the Environmental Protection Agency for one student by 10 times the limit (4 pi/L).



The YES IRESEARCH Club is a middle school program that is a school-based. This club builds an understanding of how protecting the environment can also protect one's health and culture. Participants in the IRESEARCH club apply principles from citizen science, environmental health, basic cancer biology, and Indigenous research methods and learn to measure International Agency for Research on Cancer (IARC) classified carcinogens in water, air, and soil.

# Current YES Programming (continued)

## Science, Technology, Engineering, Arts, History, Mathematics (STEAHM) Camp – June 3 – 15, 2024

UNMC-YES personnel, mentors, and participants, partnered with the Salt River Pima Indian Community and Scottsdale Community College's Indigenous Cultural Center to deliver a two-week non-residential day camp program from June 3rd through June 14th, 2024. A total of 15 students in 7th and 8th grade participated along with 4 teachers. In week one, students and teachers learned about Indigenous Research Methods, explored their own ways of being, knowing and doing and wrote individual researcher positionality statements. In week two, students and teachers learned about NA understandings of cancer, explored data and resources from the American Indian Cancer Foundation and discussed data from a scoping review of arts-based cancer research in Indigenous communities. STEAHM club participants worked together with mentors (Rowdy Duncan, Regina Idoate and Aislinn Rookwood) to analyze the data and share out findings. In addition, all participants created their own works of art to demonstrate their understanding of cancer.



## Summer Health Professions Education Program (SHPEP), Youth Enjoy Science, Weeklong Institute for Students in High School (YES WISH) – July 7 – 13, 2024



had the highest number of SHPEP-YES WISH participants since its inception. A total of 15 high school students with NA ancestry (3 males and 12 females) participated in the SHPEP-YES WISH program. Students visited UNO, UNMC, and Creighton university campuses to gain a first-hand account of the college experience and participated in culturally grounded college readiness activities, strengthening their writing, science, and study skills. learn about a variety of opportunities in cancer research progressions. Students also learned about cancer research projects across multiple disciplines and spent time with cancer researchers and UNMC-YES cancer research interns discussing various aspects across the cancer control continuum, including causes and cures for cancer. In addition, students gained clinical exposure through small group simulation experiences and seminars in the health professions of nursing, pharmacy, and medicine hosted by the respective colleges at UNMC. Students interested in public health learned about health equity from the Division of Health Equity at the Nebraska Department of Human and Health Services. Lastly, students participated in sessions that fostered their identity and strengthen their self-esteem, a strong predictor of success in the pursuit of a science education. These sessions included Question, Persuade, Refer suicide prevention training and ribbon skirt/shirt workshops delivered by Bluebird Cultural Initiative.

The goal of the Summer Health Professions Education Program (SHPEP) Weeklong Institute for Students in High School (WISH) is to strengthen the career development of students underrepresented in health professions. This summer program is a part of the larger summer health progressions education program (SHPEP) for undergraduate students funded by the Robert Wood Johnson Foundation. In 2024, the UNMC-YES program

# Current YES Programming (continued)

## YES Science, Technology, Engineering, Arts, History, Mathematics (STEAHM) Club for 2023-34 school year

In 2023-2024, a total of 54 students from six different schools developed individual research projects that aimed to answer identified questions about cancer. STEAHM Club participants worked together in project-based learning with peers and mentors including NA artists, art-based researchers, Native science teachers, and UNMC-YES team members. The research projects were based on topics of interest that were identified by the local community, including the students.

STEAHM Club participants focused on creating research questions aimed to answer ways NA people in our community are addressing cancers. Students were supported in reviewing existing literature about NAs addressing cancers (particularly in the Great Plains). They took a field trip to the Union for Contemporary Art to see the exhibition *We Are Our Medicine*. As a cohort, they analyzed the artworks as data to find answers to their

research questions. During STEAHM Club meetings, participants heard from guest speakers and engaged in hands-on learning experiences. Each participant was asked to share their positionality in relation to cancer and this project. During school meetings, students developed their art projects, which ranged from drawings, paintings, soft sculpture with buckskin, textiles with ribbon skirts and shirts, digital art, poetry or prose, to mixed media. These pieces will be on exhibit at the upcoming Intergenerational Echoes: Indigenous Cancer Stories exhibit at the Mule Barn on the Fort Omaha Metropolitan Community College campus in Omaha, Nebraska. More details about the exhibit can be found on page 10. STEAHM Club participants will visit the exhibition to discuss and interpret the salient findings to come to a consensus on these findings to be shared in the YES Research Forum.



The YES! High School STEAHM Club projects are aimed at promoting a sense of community, personal responsibility, and civic engagement in addressing cancer in the NA community. STEAHM Clubs provide students with NA ancestry early exposure to various cancer-related research and health careers and opportunities to participate in ongoing arts-based research projects with a focus on learning about cancer throughout the cancer control continuum.



# AMERICAN INDIAN SCIENCE AND ENGINEERING SOCIETY

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## Join AISES Today!

AISES supports K-12, undergrad and graduate students in STEM and Healthcare studies through mentorship, scholarships & community building events.

### Member Benefits!

**Career Development**  
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Winds of Change Magazine  
Annual College Guide

### Contact AISES:

<https://www.aises.org/membership>

**Omaha Student Advisor:** Scot Ouellette

[scot.ouellette@unmc.edu](mailto:scot.ouellette@unmc.edu)



### Nebraska AISES Program Partners



# Current YES Research & Creative Activity

## Comparison of the microbiome in lizard populations across the latitudinal thermal gradient - Hayli Spellman & Kayden Ramirez with Dr. Travis Robbins at UNO's College of Arts & Sciences

Hayli Spellman and Kayden Ramirez worked on a project with Tiffany Hegdahl and Dr. Travis Robbins over the summer at the University of Nebraska-Omaha (UNO). This project aims to build off of research and explore the differences in the gut bacteria of the *S. consobrinus* species using fecal samples of those caught in the field, including the different bacteria one favors over the other and determine why that may be, as well as how it helps the species adapt to its climate.

We found that when lizards reside upon the latitudinal gradient, the more specialized the microbiome becomes. The lizards found in the NAC area have more diverse microbiomes than those found in the SH area. The data also revealed that the further away and north the microbiome communities become less similar. The research done into this also will help us gain a better understanding of the differences and adaptations of the *Sceloporus consobrinus* species, with the gut microbiome being an insight into how the internal world of the species works and has adapted noninvasively.



## Community Readiness Assessment of Urban American Indian and Alaska Native communities - Carmela Rigatuso with Drs. Regina Idoate and Aislinn Rookwood at UNMC's College of Public Health

The University of Nebraska Medical Center's Youth Enjoy Science (UNMC YES) is a cancer research education program that serves an urban AI/AN community in the Great Plains region (formerly NPR). UNMC YES program's overall goal is to increase the number of AI/ANs pursuing cancer research careers.

A Community Readiness Assessment (CRA) was conducted in 2018 (initial) and 2024 (follow-up) to Inform UNMC YES program implementation and investigate impact over time.

The CRA is based off the Community Readiness Model (CRM) which consists of five dimensions (knowledge of efforts, knowledge of the issue, leadership, resources, community climate). Scores can range from one (no readiness) to nine (community ownership).

From 2018 to 2024, the overall CRA scores did not increase; however, dimension scores increased for community climate (3 to 4) and knowledge of efforts (2 to 3). Readiness to address cancer in an urban AI/AN community improved over time as a result of cancer education research programming. Additional efforts are needed to increase community readiness by developing leadership, resources, and community knowledge of cancer.



Dimension Scores	2018 (Baseline)	2024 (Follow-up)
Knowledge of Cancer Efforts	2	3
Leadership	3	3
Community Climate	3	4
Knowledge of Cancer	4	4
Resources	3	3
Overall Score	3	3



## Arts-Based Cancer Research Studies – Shiloh King, Samaris Biglake, Tain Half, Hayden Rathkamp Robbins, and Elliana Sitting Eagle with Drs. Regina Idoate and Aislinn Rookwood

Drs. Regina Idoate and Aislinn Rookwood in the College of Public Health are excited to continue their work in arts-based cancer research with American Indian and Alaska Native Communities. The following interns have been working on various projects in this area. Shiloh King, Samaris Biglake, Tain Half, Elliana Sitting Eagle, and Hayden Rathkamp Robbins have been working on exploring ways to raise cancer awareness in American Indian and Alaska Native communities through traditional arts, such as ribbon skirts/shirts, applique designs, and beading, and other arts media, such as painting. These artworks will be exhibited through multiple platforms to support cancer research and education among American Indian and Alaska Native communities.

Shiloh King will be working on evaluating the findings from the *We Are Our Medicine* exhibition at the Union for Contemporary Arts on February 4<sup>th</sup>, 2024, as well as investigating concepts of painting on buckskin as a methodology for raising awareness. Similarly, Samaris Biglake will be working on investigating concepts of painting as a methodology.

Tain Half and Hayden Rathkamp-Robbins will be exploring the use of textiles through ribbon skirt/shirt making and beading as a methodology for raising cancer awareness in Native American communities. This project will examine the artmaking process, collective artworks, and exhibition process as methods for raising awareness.

Elliana Sitting Eagle has been working with digital media to create several artworks to contribute in the *We Are Our Medicine* and *Intergenerational Echoes: Indigenous Cancer Stories*. She has also been working to contribute to the publication examining the impact of arts-based cancer education provided through the inaugural science, technology, engineering, arts, history, and mathematics (STEAHM) camp, in which she was a participant in middle school.

## Research Internships at the University of Arizona

Cooper Baines, mentored by Dr. Karen Hastings in the College of Medicine at the University of Arizona, has been exposed to clinical, laboratory, and computational research. He assisted with writing an IRB proposal for a study to investigate referrals to dermatology given different skin cancer risk factors to evaluate for differences in referral by race or ethnicity; he learned PCR to assess for Mycoplasma contamination of cell culture; and he is learning how to perform differential gene expression and immune cell deconvolution to evaluate differences between sun-exposed and sun-protected skin.

Lisa Williams, mentored by Dr. Amelia Gallitano in the College of Medicine at the University of Arizona, has been trained in several research laboratory methodologies and animal behavioral studies. She is currently learning the background and methodology for single-cell RNA sequencing and has begun working with a dataset produced in our laboratory.

## Pancreatic Cancer Research – Promise Saufley-Moore with Dr. Joyce Solheim

Patients with pancreatic cancer have a very low survival rate, and the frequency at which Native Americans develop pancreatic cancer is higher than that of the general U.S. population. A common chemotherapy that is used for pancreatic cancer is gemcitabine. Promise's research showed that gemcitabine increases the amount of a protein on pancreatic cancer cells that signals to the body's immune cells that the cancer cell is abnormal and that the immune cells should eliminate it. Her work was included in a publication on which she is a co-author (Larson et al., *International Journal of Molecular Sciences* 2024).





**METROPOLITAN**  
Community College

P.O. Box 3777 | Omaha, NE 68103-0777

*Intergenerational Echoes:  
Indigenous Cancer Stories*  
September 9 - October 4

**Closing Reception:**

Friday, September 27, 5:00-6:00 p.m.

**Mule Barn Gallery**

Fort Omaha Campus, Bldg. 21

5300 N 30th St

Omaha, NE 68111

Front Image: *Mni Wiconi*

by Eliana Sitting Eagle, Digital Painting, 2024



**Galleries are free and open to the public.**

Nondiscrimination and Equal Opportunity Statement- Metropolitan Community College does not discriminate on the basis of race, color, national origin, religion, sex, marital status, age, disability or sexual orientation in admission or access to its programs and activities or in its treatment or hiring of employees.

**The Indigenous Health, Education, and Resources Taskforce (IHEART) Conference – September 4, 2024**

The Indigenous Health, Education, and Resources Taskforce (IHEART), is a national collaborative, formed in 2021 to address the scarcity of American Indian and Alaska Native (AI/AN) communities in the health professions. IHEART is an AI/AN led collaborative consisting of a national coordinating committee and regional networks to amplify, herald, and sustain systems level solutions by uniting allies, organizations, institutions, and communities dedicated to improving AIAN educational and health outcomes. It includes about 350 health professions educators, learners, organizational leaders, and community members who are committed to AI/AN communities and workforce diversity.

At the annual summit, YES! research interns and high school participants (Audrey Bavari, Rudy Smith Jr., Kylesse Walker, and Frankie Archambault) took part in a panel sharing their experiences in middle and high school health profession pathway programming with Dr. Regina Idoate, Genesis Saul-Hooper and Steve Tamayo.



# Are you or someone you know interested in participating in a cancer research internship at the University of Nebraska Medical Center, University of Nebraska at Omaha, or University of Arizona?

Please see the below flyer with more information about this program and how to get involved.



## Part-Time Online and In-person Internships for College and Advanced High School Students

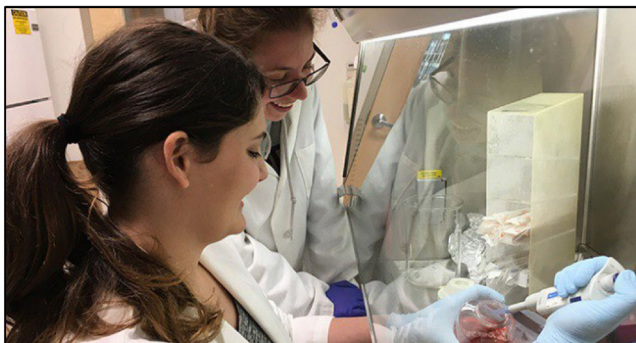
### Program Description

The Youth Enjoy Science (YES!) Research Internship allows students with Native American heritage to learn about cancer research. Participants' time will be dedicated to building knowledge and experience critical to all researchers working in community-based public health or lab-based research projects at the University of Nebraska Medical Center, University of Nebraska-Omaha or University of Arizona in relation to cancer prevention, treatment, and research. Participants can learn about ongoing research and opportunities in health careers, engage with community through health interventions, virtual meetings with scientists and public health practitioners and support existing studies through data collection, analysis and/or presentation.

### Program Requirements

- Native American heritage
- Undergraduate or advanced high school student (≥16 years old)
- Interest in a health profession and/or research career

More information about the YES! Program can be found at <https://www.unmc.edu/eppley/education-outreach>



### Commonly Asked Questions

#### What research experiences are available for students?

Students can participate in an online program in which they will learn the fundamental science behind several laboratory techniques or public health research methods through participation in various research projects. Students can meet virtually to talk with graduate students and/or faculty members to learn about current cancer lab or community-based research projects and career options. Research projects and experiences will be matched to each student individually and can be somewhat flexible to accommodate students' schedules and interests.

#### Is this a paid internship?

Yes, students will be compensated \$12/hour

#### Can this internship be used to satisfy college program requirements?

We will do our best to create experiences that fulfill college program requirements for internships, capstone projects, or service-learning.

For specific questions about this program, please e-mail us at [yesgrant@unmc.edu](mailto:yesgrant@unmc.edu).



## Contact Information:



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## Upcoming Events

### IHeart/AAIP Conference

Hilton Salt Lake City Center, Salt Lake City, UT  
IHEART: September 4<sup>th</sup>  
AAIP: September 5<sup>th</sup>-8<sup>th</sup>, 2024

### SEPA/YES! Advisory Board Meeting

Marriott Hotel, South Sioux City, NE  
September 20<sup>th</sup>, 2024

### 2024 International Cancer Education Conference

The Campbell House Lexington, Lexington, KY  
September 24<sup>th</sup>-27<sup>th</sup>, 2024

### YES! Intergenerational Echoes: Indigenous Cancer Stories

Metro Community College, Fort Omaha, Mule Barn Gallery.  
Exhibit runs September 9<sup>th</sup>-October 4<sup>th</sup>  
Exhibit Closing Ceremony: September 27<sup>th</sup>, 5 - 6 pm

### YES! Research Forum

University of Nebraska at Omaha, Omaha, NE  
February 4<sup>th</sup>, 2025

## Announcements

YES! has started a new way to promote local events from our organizations and partners. Please scan QR to sign up for promotional opportunities and updates on community events.



Please reach out to [gsaul@unmc.edu](mailto:gsaul@unmc.edu) for any questions or concerns.

