



Mission

To alleviate the unequal burden of cancer among Native Americans of the Southwest through research, training, and community outreach programs in collaboration with the communities we serve.

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The Partnership for Native American Cancer Prevention (NACP) is a partnership of Native American communities, Northern Arizona University, the University of Arizona Cancer Center, and the National Cancer Institute to address cancer health disparities in Native Americans.

Greetings!

We have an abundance of riches for the August *NACP Insights*: New grants from our Partnership, Dr. Jani Ingram's team's work to make hand sanitizer for the Navajo Nation, a description of the cervical cancer research project, and an article about The Navajo Healthy Stomach Project that was written by the students on that project.

We hope you enjoy reading this issue.

Jani Ingram

Margaret Briebl

Francine Gachupin

Highlighting New Grants: R21 and R01

A Mixed Method to Identify Causes of Kidney Cancer Surgical Disparities in Arizona is a research project funded by the National Cancer Institute to **Dr. Ken Batai**, Principal Investigator (R21 grant). American Indians and Alaska Natives (AI/AN) and U.S.-born Hispanic Americans (HA) have a heavier burden of kidney cancer than non-Hispanic Whites (NHW). They have multiple barriers to health care and they are often diagnosed with more advanced stage kidney cancer. Kidney cancer health disparities research focuses on differences in clinical characteristics between NHWs and non-Hispanic Blacks often using national-level data ignoring heterogeneity across U.S. regions or sub-populations. AI/AN and HA are underrepresented in kidney cancer clinical studies. Moreover, there is no qualitative study in AI/AN and HA to identify factors that affect surgical treatment and if they are contributing to high mortality. The goal of this study is to identify causes of kidney cancer surgical disparities using a mixed method approach combining semi-structured, in-depth interviews and analysis of clinical data using data from Banner University Medical Center, the Arizona Cancer Registry, and the National Cancer Database. Dr. Batai is assisted by Drs. Benjamin Lee, **Francine Gachupin**, Juan Chipollini, and Paul Hsu.

Using components of Social Cognitive and Self-Determination Theories and Mind-Body Medicine skills training, the goal of the **Achieving American Indian Youth Energy and Mental Health Balance (AYEM-B)** project is to develop a comprehensive intervention to achieve healthy lifestyle choices for Arizona's American Indian youth ages 10-15 years-old. The project includes a holistic perspective of health. The 6-month program includes a one-week intensive residential camp experience and bi-monthly booster sessions for 5 months, integrating health promoting activities including healthy eating and physical activity. The AYEM-B is funded by the National Institute of Minority Health and Health Disparities to **Dr. Francine Gachupin**, Principal Investigator (R01 grant). American Indian youth have the highest prevalence of obesity of all ethnic groups in the U.S. Obese children are at high risk for adult obesity, cancer, and for metabolic disease including diabetes, cardiovascular disease, and stroke. Dr. Gachupin is assisted by Drs. Melanie Hingle, **Cynthia Thomson** (IAC member), **Denise Roe**, Noshene Ranjbar, Vernon Grant, and Teresia O'Connor.



Hand Sanitizer for the Navajo Nation

Dr. Jani Ingram's lab at NAU produced 110 gallons of hand sanitizer to donate to the Navajo Nation. **Dr. Chad Hamill** (IAC member), the vice president of Native American Initiatives at NAU, heard about a lab at UC Berkeley producing sanitizer and asked Dr. Ingram if her lab could do the same. Student researchers **Andee Lister**, **Dana Clashin**, **Marissa Mares**, **Mialynn Jim** all of whom are members of the Navajo Nation, and **Jason Farmer** and **Irvin Ledezma** contributed their efforts to producing the sanitizer, which had to be done in a room that can handle flammable liquids and an area large enough to handle the mixing containers. The Ingram lab got connected to a grassroots organization, the Kinlani Mutual Aid, to distribute hand sanitizer to tribal folks in need.

Andee Lister, a third-year Ph.D. student in Ingram's lab, found special meaning in the break from her regular research. "My parents reside on the Navajo Nation, and I am extremely grateful for non-profit groups and grassroots organizations that have been providing donations to the Navajo Nation during this time. The hand sanitizer project was something Dr. Ingram talked about recently, and I thought, what a great way to give back to the communities that we work with on the Navajo Nation."



(L-R) Ingram, Mares, Jim, Ledezma, and Lister

Cervical Cancer Research Project

Cervical cancer is highest among Native American women in Arizona. It is caused by human papillomavirus (HPV), the most common sexually transmitted infection. There are over 150 HPV types, which are separated into three categories. The first category includes 14 types of HPV that can cause cancer in men and women. The second has over 30 types that can cause warts, including genital warts. The third category contains types that are either unknown to cause disease or are known not to cause disease. The most recent version of the HPV vaccine protects against 9 types of HPV: two that cause most warts, and seven that can cause cancer in both women AND men.

Dr. Melissa Herbst-Kralovetz of the University of Arizona Cancer Center, and **Drs. Naomi Lee** (Seneca Nation of Indians) and **Greg Caporaso** of Northern Arizona University, recently initiated a collaborative project to study the role of the vaginal microbiota (the microbes present in the human vagina, which can differ widely across individuals) and HPV in cervical cancer development in Native American women. As a comparison, they will also recruit non-Native women. The team has formed a clinical partnership with the Native Americans for Community Action (NACA) clinic in Flagstaff, AZ. Native American student researchers in their labs include **Skyler Bordeaux** (Rosebud Sioux), **Kaelyn Acothley** (Navajo), **Beyonce Bahe** (White Mountain Apache), and **Meredith Dennis** (Cherokee Nation).



(L-R) Drs. Lee, Herbst-Kralovetz, and Caporaso

With the help of the NACA staff and the NACP Outreach Core, the team developed a culturally sensitive research protocol. This includes a survey designed with Native people in mind. It has questions on lifestyle, health history, and knowledge about HPV and the vaccine. In addition, NACA clinicians will collect a vaginal swab (similar to a Pap test) which will be sent to the labs of Drs. Herbst-Kralovetz and Caporaso. Their labs will profile the samples to detect the presence of multiple types of HPV and other potential early markers of cervical cancer. The goal of the research team is to understand the cervicovaginal microenvironment in Native women, which can ultimately help prevent cancers caused by HPV in Native communities and enhance women's health.



Navajo Healthy Stomach Project

Helicobacter pylori (*H. pylori*) is a bacterium that resides in the stomach, and if left untreated, can cause stomach ulcers, gastritis, and stomach cancer. As a bacterial infection, *H. pylori* is common in 80% of populations in developing countries and 20% of populations in developed countries. *H. pylori* is transmissible from person to person through feces, saliva, and vomit. This may include the



Whitney Yarbrough

sharing of eating and/or drinking utensils, living in crowded conditions with someone who is infected, not washing fruits and vegetables, and consuming unclean or unregulated water sources. *H. pylori* is diagnosed either through blood tests, urea breath tests, stool tests or endoscopy. It is possible for individuals infected with *H. pylori* to show no signs or symptoms.

Dr. Priscilla Sanderson (Northern Arizona University) is our mentor and our collaborators are **Carmenlita Chief**, MPH, **Drs. Robin Harris** and **Heidi Brown** (University of Arizona) and Dr. Fernando Monroy (Northern Arizona University). The student research assistants working together on the manuscript are **Chassity Begay**, **Rebekah Chattin**, **Haley Singer**, **Sarah Chatter** (all Navajo), and **Whitney Yarbrough**.

The project team is currently working on a manuscript on the 2019 *H. pylori* focus group conducted on the Northern Arizona University campus with undergraduate and graduate students as participants. The goal of the focus group was to understand the knowledge, attitudes, and practices of stomach cancer, chronic gastritis, *H. pylori*, and stomach ulcers. The writing of the manuscript is the first advanced



Haley Singer

scholarly writing experience of the research assistants. We learned that writing a manuscript is a lengthy process that requires patience, teamwork, organization, critical thinking, and motivation. During the writing process, we conducted a multi-investigator qualitative analysis to find common themes present in focus group transcripts. We have weekly meetings to revise our drafts and have learned how to take constructive criticism and to be open to change as a manuscript requires multiple drafts. We further learned to adhere to research journal submission requirements necessary for publication. All in all, under the guidance of Dr.

Sanderson the writing process has been rigorous and beneficial to learn and experience.



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