DaCCoTA
DAKOTA COMMUNITY COLLABORATIVE ON TRANSLATIONAL ACTIVITY
Fall 2022
Newsletter

Mobile Web App Intervention to Promote Breast Cancer Screening among American Indian Women

Dr. Soonhee Roh is a professor in the Department of Social Work at the University of South Dakota. She is a leading scholar and educator in the fields of gerontology and social work. Dr. Roh contributes her expertise in the practice areas of cancer and health disparity with a focus on American Indian (AI) populations, especially through cutting-edge research on older AI adults, health literacy, cancer screening, and interventions. Dr. Roh's research supports those in the field developing prevention and intervention strategies. She currently serves as the principal investigator (PI) on a DaCCoTA Basic Scholars Program grant. In her DaCCoTA project, the overarching goal was to develop and evaluate the feasibility and effectiveness of the Mobile Web App Breast Cancer Screening (wMammogram) intervention that is culturally tailored for AI women residing in rural areas.

Dr. Roh's passion to resolve health disparities in vulnerable populations by utilizing technology was ignited after she read an article about the use of Web apps in scholarly research. Web apps, a new intervention, have a positive impact on constructive behavioral change and are used in health research initiatives (e.g., preventive cancer care, smoking cessation, and alcohol consumption). Dr. Roh became interested in the feasibility of the wMammogram intervention as a preventive education program while pursuing a cancer literacy study with AI women. Her study showed that AI women face disproportionate rates of breast cancer mortality and cancer disparities. She identified a critical need to develop a culturally appropriate, accessible, and personalized intervention that reduces barriers and promotes breast cancer screening among AI women. Dr. Roh adopted a Web app intervention for her DaCCoTA project. The mammogram intervention (wMammogram) used Web app technologies (short message and multimedia services) that function well on smartphones and other mobile devices. Mobile Web app interventions have proven to be successful in reaching isolated racial/ethnic minorities, communities of poverty and low income, and rural populations.

This wMammogram project used community-based participatory research (CBPR) and multiple methodologies, which are built upon existing collaborative partnerships between the research team and the Yankton Sioux Tribe in South Dakota. The first aim was to develop the culturally tailored wMammogram intervention to promote breast cancer screening among AI women. The second aim was to conduct a pilot test of the wMammogram intervention on its feasibility and efficacy.

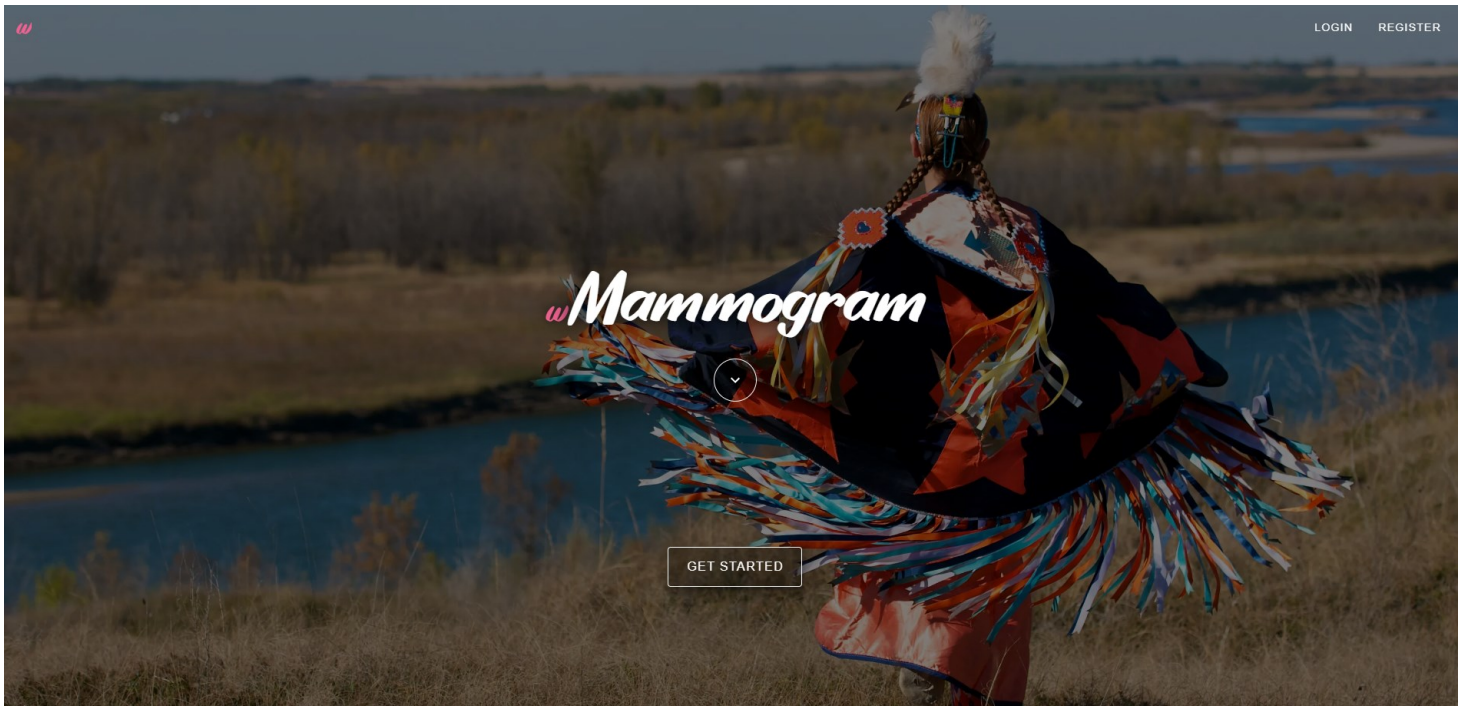
To achieve Aim 1, the research team conducted two focus groups to assess the perspectives of AI women towards breast cancer screening, knowledge, barriers, and needs about mobile Web app-based education to promote breast cancer screening. The research findings highlighted the importance of creating effective, culturally tailored educational interventions into programs specific to AIs to increase their understanding of breast cancer screening and promote screening behaviors. Particular attention to how AIs' culture, beliefs, and barriers are implicated in screening behaviors could help with developing culturally tailored health education tools for this population. The results of this qualitative study are in press in the *Journal of Cancer Education*.

To achieve Aim 2, the research team developed the wMammogram and evaluated its feasibility and effectiveness among AI women based on quantitative assessment. Using a randomized controlled trial design, 122 AI women aged 40 to 70 years were recruited and randomly assigned to either (1) the wMammogram intervention group (n=62) to receive culturally and personally tailored multilevel and multimedia messages through a mobile Web app along with health navigator services; or (2) the control group (n=60) to receive a printed educational brochure with contact information of health navigator and local clinics. Outcome measures included mammogram receipt, intention to receive breast cancer screening after the intervention, and satisfaction with and effectiveness of the intervention.

A significantly higher proportion of women who received the wMammogram intervention (42%, 26/62; $p < .01$) completed mammograms by the 6-month follow-up compared with the control group (20%, 12/60). The wMammogram group, compared with the brochure group, reported significantly higher ratings on perceived effectiveness of the intervention ($t=-5.22$, $p<.001$), increase in knowledge ($t=-4.75$, $p<.001$), and satisfaction with the intervention ($t=-3.61$, $p<.001$). The Web app group also expressed greater intention to receive a mammogram in the future when it is due (100%, 62/62 vs 85%, 51/60) and were more willing to recommend the intervention they received to their friends (98.4%, 61/62 vs. 90%, 54/60) compared with the brochure group, and these differences were statistically significant.

The wMammogram study demonstrated that a mobile Web app-based intervention combined with a health navigator service was a feasible, acceptable, and effective intervention mechanism for promoting breast cancer screening in AI women. Scholars, health professionals, and others working with vulnerable hard-to-reach populations should consider adding mobile Web interventions to their toolkits.

Dr. Roh would like to thank DaCCoTA for supporting her research and providing invaluable help. Individuals include Dr. Robin Miskimins, Dr. William G. Mayhan, Dr. Lee Baugh, Dr. DenYelle B. Kenyon, Dr. Amy Elliott, Dr. Daniel G. Petereit, Dr. Anu Gaba, Dr. Kristina Beiswenger, Dr. Yeon-Shim Lee, Christian Buresh, Tabatha Lemke, and Miranda Ruiter.



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Core Component Highlight: Introducing the Data Navigator

Kent Ripplinger is the joint data registries navigator for the National Covid Cohort Collaborative (N3C) and the DaCCoTA. His role is to advise researchers on access and usage of available data registries. Recently hired into the DaCCoTA from the private sector, Mr. Ripplinger brings over 30 years of experience in both creating complex databases and in teaching people how to use them. Registry access allows researchers to test hypotheses retrospectively and generate preliminary data to support more rigorous prospective work. He is a member of the Biostatistics, Epidemiology, and Research Design Core (BERDC). Below is more information on one of the major datasets he'll be helping access.

National COVID Cohort Collaborative (N3C):

The largest limited EHR data set in US history

National COVID Cohort Collaborative

Data within the N3C Data Enclave is provided by **75 sites** from across the nation and contains information about **15.2 million anonymized persons**. The Enclave has **17.9 billion total rows** containing:

5,968,822 **COVID+ Cases**
1.6 billion **Clinical Observations**
8.5 billion **Lab Results**
2.7 billion **Medication Records**
834.4 million **Procedures**
891.2 million **Visits**

Who is eligible to use the N3C?:

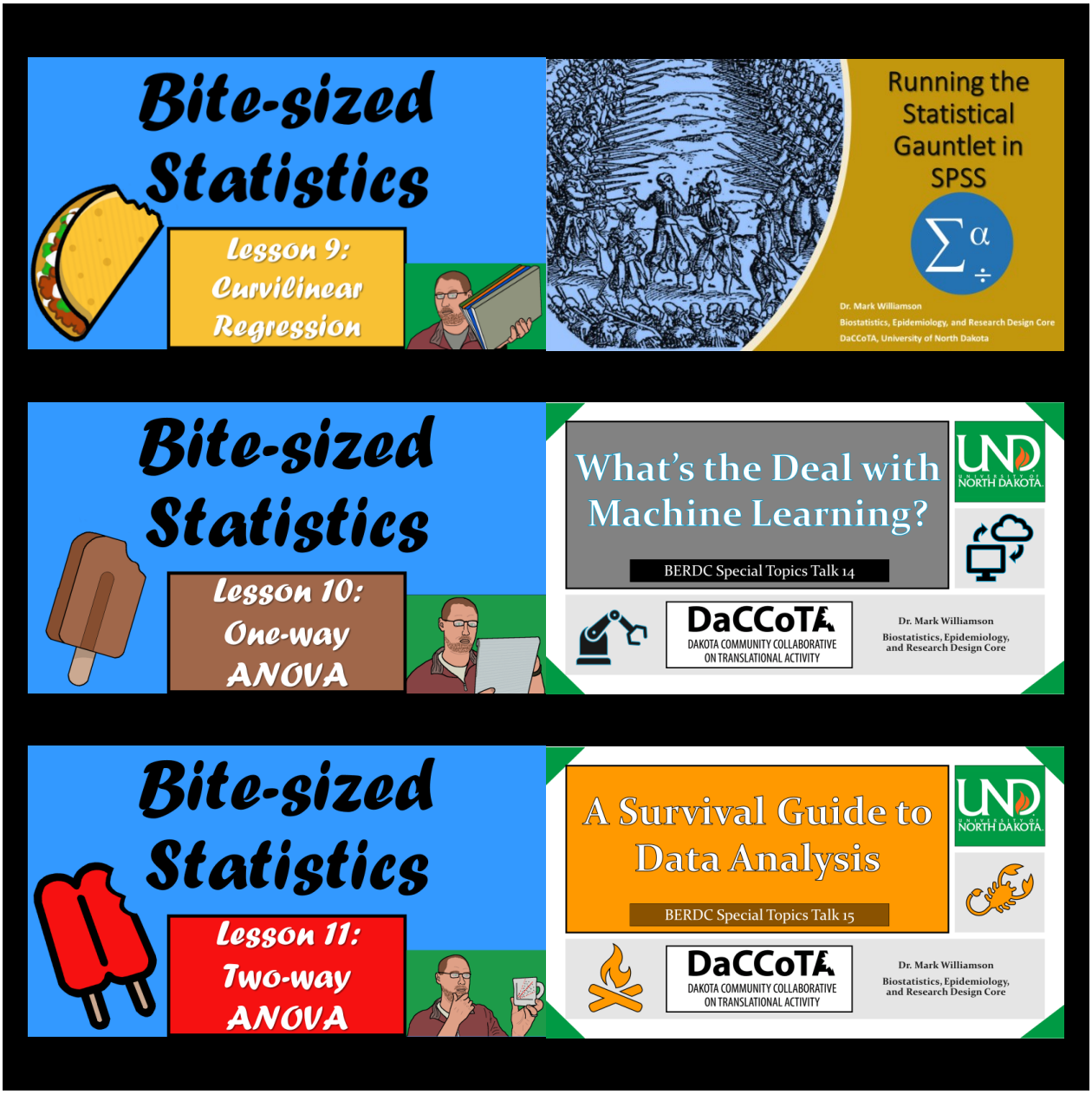
The N3C Data Enclave is available to all investigators of the DaCCoTA. Check with your N3C Investigator navigator, Kent Ripplinger for more information. Email: kent.p.ripplinger.2@und.edu

Value to Organizations:

- Access to large-scale COVID-19 data from across the nation
- Sample data for grant proposals
- Team science opportunities for new questions and to test informatics methods
- Access to Domain Teams, statistics, machine learning (ML), informatics expertise
  Training on ML analytics, NLP methods, tools, and software

Recent Training Resources

Statistical Training Resources (https://med.und.edu/daccota/berdc-resources.html)



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Current Calls for Applications

The goal of the Dakota Community Collaborative on Translational Activity (DaCCoTA) is to stimulate the growth of expertise and engagement in health-related clinical and translational research (CTR) in the Dakota region.

The **Professional Development Core (PDC)** is currently seeking proposals for the following funding mechanisms:

1) DaCCoTA Scholars Program – This program's purpose is to stimulate the development of new CTR investigators. Applications are expected to **address health-related translational research of importance to North and South Dakota**. The program offers both a **basic** and **community engagement** track.

2) Clinical Research Opportunities Program - This program provides 20% release time (up to NIH cap) to community-practicing, hospital-based clinicians to allow for participation in training activities and collaboration in health-related CTR.

The **Pilot Projects Program (PPP)** is currently seeking proposals for the following funding mechanisms:

1) Introduction to Research Pilot Award- This award is intended to allow non-faculty clinicians or early-stage investigators to engage in research. Applications should address the multilevel manifestations of health, demographic risks, and social impact.

2) Feasibility Pilot Grant Award – This award is designed to allow a clinician/non-clinician team to form around a novel health-related hypothesis. Applications should address the multilevel manifestations of health, demographic risks, and social impact.

3) Ready-to-Go Pilot Grant Award – This award is intended for projects with existing significant preliminary data in support of a novel clinical/translational health-related hypothesis. These projects should ideally be ready for extramural submission within a year and/or be able to demonstrably improve health outcomes.

4) TREE Pilot Grant Award – This award is designed to provide funding for highly innovative projects that seek to translate promising epidemiological findings at the population level to relevant in vitro and/or in vivo experiments and/or the reverse, from in vitro and in vivo observations to a population setting.

Letters of intent for all programs are due **October 21st, 2022**. Full applications will be invited from selected applicants and will be due **January 20th, 2023**.

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Recent Events

- June 2022
  - **Core Training Event:** ***Research with Native American Communities***, hosted by the CEOC (June 15th)
- July 2022
  - **Core Training Event:** ***Exploring NIH Research Grants: R03, R15, R21,*** hosted by the PDC (July 28th)
- August 2022
  - **Annual AICoRN Summit & DaCCoTA Symposium** (August 4-5th)
  - **Core Training Event:** ***Things to Consider with Project and Application Development***, hosted by the CRRFC (August 31st)
- September 2022
  - **Core Training Event:** ***Introduction to Grants Management***, hosted by the PDC (September 27th)

Upcoming Events

- October 2022
  - ***The Case for Public Use Datasets (PUBS)***, hosted by the BERDC (October 12th, 10 am)
  - **Core Training Event:** ***N3C Training***, hosted by the BERDC (October 26th, 10 am)
- November 2022
  - **Core Training Event:** ***NIH Scoring***, hosted by the PDC (November 15th, 10 am)

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AICoRN Summit and DaCCoTA Symposium Wrap-up

The AICoRN Summit and DaCCoTA Symposium were held at the Sanford Center in Sioux Falls, SD on August 4th & 5th.

- There were **27** virtual and **57** in-person attendees for the Summit.
- There were **32** virtual and **66** in-person attendees for the Symposium.
- DaCCoTA Symposium presenter slides are available **here**.
- DaCCoTA Symposium poster presentations are available **here**.