

Southwest Health Equity Research Collaborative (SHERC)

Julie A. Baldwin, PhD PI



Today's Agenda

- I. Welcome**
- II. Overview of SHERC & RCMI Program**
- III. SHERC Accomplishments**
- IV. Description of Each Core**
- V. Services/Resources of Each Core**
- VI. Questions and Discussion**



SHERC Overview

SHERC is an initiative of the **Center for Health Equity Research (CHER)**, supported by funding from the **National Institute on Minority Health and Health Disparities** of the **National Institutes of Health**



Center for Health
Equity Research



SHERC's Overall Goal

Increase basic biomedical, clinical, social, and behavioral research at NAU to address health disparities and health equity among diverse populations of the Southwestern United States.

National Institutes of Health (NIH)

Research Centers in Minority Institutions (RCMI)

Specialized Centers

- Develops and strengthens research infrastructure and fosters the next generation of researchers from underrepresented populations.
- Provides grants to institutions that award doctoral degrees in the health professions or health-related sciences and have a historical and current commitment to serving students from underrepresented populations.
- Currently, there are 20+ funded RCMI throughout the US
 - US Southwest RCMI : NAU, UC Riverside, SDSU, UTEP

SHERC's Alignment with NAU's Elevating Excellence

NAU Vision: NAU aims to be the nation's preeminent engine of opportunity, vehicle of economic mobility, and driver of social impact by delivering equitable postsecondary value in Arizona and beyond.

NAU Mission: NAU transforms lives and enriches communities through high-quality academics and impactful scholarship, creative endeavors, and public service.

Academic
Excellence

Student
Success

Impactful
Scholarship

Community
Engagement

Commitment To
Indigenous Peoples

Mission-Driven &
Diverse Faculty & Staff

Sustainable Stewardship
of Resources

SHERC Investigators Making NAU History



Julie Baldwin

First AI/AN faculty at NAU
to achieve **Regents'**
Professor status and to
be elected to the **National**
Academy of Medicine



Ricky Camplain

First **NIH K01**
funded at NAU



Amanda Hunter

First **MOSAIC K99-**
R00 funded at NAU

SHERC Research Projects (2017-2022)

Pilot Research Projects	Major Research Projects
High-throughput Characterization of Health Disparities Related to Viral Infections	Do Pathogen Genotypes, Carriage, and Social Network Differences Lead to Health Disparities in MRSA/MSSA Infections?
A Remote Heart Monitoring System for Early Prediction of AFib for Rural Population	Elucidating Effects of Arsenic and Estrogen on Wound Healing
Multivalent Display of HPV Antigens using Self-Assembling Peptides	Fibrillogenesis Mediated Phenotype Switching of Breast Cancer Cells
Addressing Health Disparities in Childhood Obesity, One Summer at a Time	Investigating Anti-Tumor Cytotoxicity of Reovirus Treated NK Cells for Cancer Therapy
Addressing Asthma Health Disparities through Diet-based Manipulation of the Gut Microbiome Airway Axis	Defining Microbiological Drivers of Early Childhood Caries in Preschoolers in Southern Arizona
Characterization of Populations Linked to Neonatal Abstinence Syndrome: Infants with NAS and their mothers	
Novel Ionic Liquid Formulations to Combat Diabetic Foot Ulcer Infections	
Developing Room Temperature Preservation and Storage Strategies for Medicinally-relevant Biological Molecules	
ARORA: Using Augmented Reality to Gamify a Universal Social Emotional Learning Intervention in Low-infrastructure Environments	
Synergistic Toxicity of Depleted Uranium and UV radiation in a Humanized Zebrafish Model with Melanoma	
Physical Activity among Women Incarcerated in Jail	
Latino Fathers' Stress and Their Children's Obesity Risk	
Opioid Use Recovery Help in an Online User Support Environment (OUR HOUSE)	
Developing a Methodology for Exploring Health Inequities Tied to Wildfire Smoke	
Examining School Wellness in Underserved American Indian Communities	
Parents Taking Action to Improve Autism Services Access for Navajo Families in Northern Arizona	
Epidemiological Modeling to Predict Spatial Disparities in West Nile Virus Infection Risk in the Southwest	
Testing the Utility of Biocrust Restoration to Stabilize Soils and Reduce Coccidioides Abundance	
Navajo Children with and without Speech Sound Disorders	
Native Spirit: Development, Implementation, & Evaluation of a Culturally-grounded After-school Program	

SHERC Supplements (2017-2022)

9 supplements

- worth over **\$3.1 million**

26 investigators

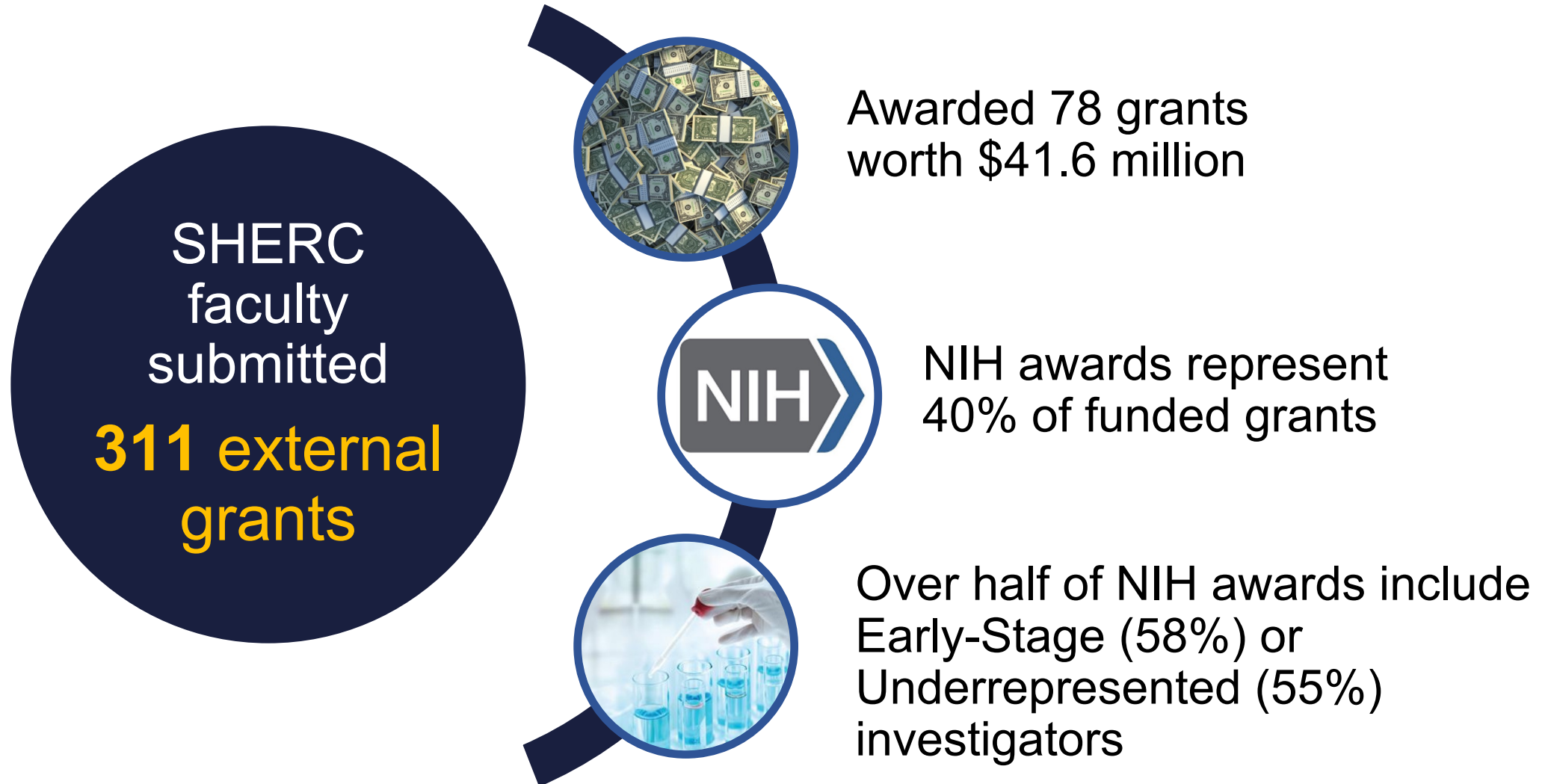
- 12 ESI & 10 UR faculty

3 COVID-19 supplements

- 8 faculty new to SHERC
- 6 UR faculty & 3 ESIs

Supplements
A Multilevel Examination of Health Equity among Ethnic and Rural ADRD Caregivers
Defining Microbiological Drivers of Early Childhood Caries in Preschoolers of Native Hawaiian and Other Pacific Islander Descent
Racial Differences in Transition of Care among Medicare Beneficiaries with Alzheimer's Disease and Related Dementias after Hip Fracture
Disparities in Early Childhood Caries among Native Hawaiian and Other Pacific Islander Pre-school Aged Children (Diversity Supplement)
Rapid Assessment of Immediate and Potential Long-term Implications of Changing Telehealth Regulations for Substance Use Treatment in the Context of COVID-19
Building Trust and Awareness to Increase Arizona Native Nation Participation in the COVID-19 Vaccine Trials
Understanding Resilience and Mental Wellbeing: Southwest Indigenous Nations and the Impact of COVID-19
Ending the HIV Epidemic in Rural Oklahoma (e-HERO)
The Baakalaaxdeete (To have good memory) Study of Risk and Protective Factors for ADRD among American Indians Across the Life Span

SHERC Affiliated Faculty Grant Success

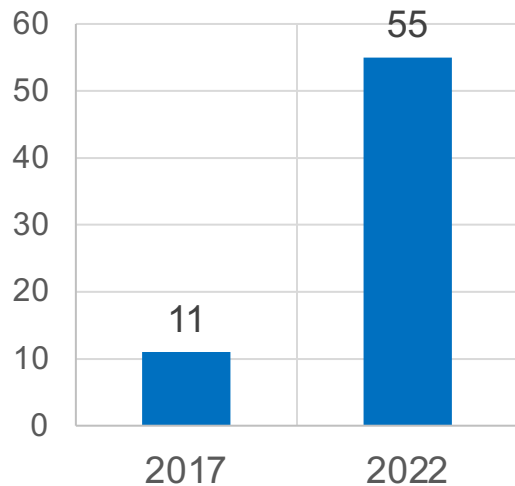


SHERC Early-Stage & Underrepresented Investigators

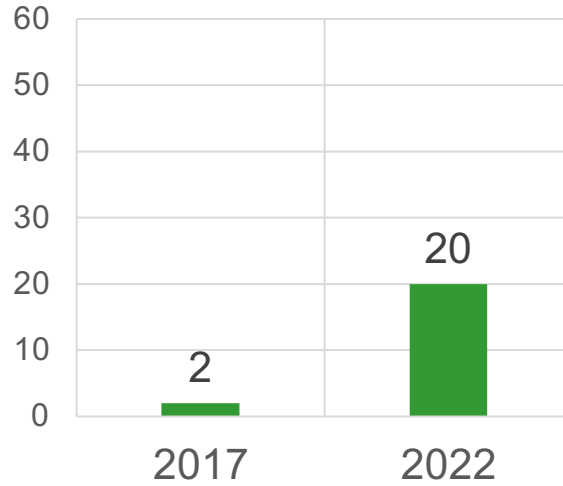
98 SHERC affiliated faculty:

- 58% Early-Stage Investigators (ESIs)
- 20% Underrepresented* Investigators (URIs)

Five-fold increase in the number of **ESIs**



Ten-fold increase in the number of **URIs**



ESIs

75% of SHERC publication **authors**

60% of SHERC external grant award **investigators**

URIs

47% of SHERC publication **authors**

31% of SHERC external grant award **investigators**

PPP Investigators

95% **ESIs**

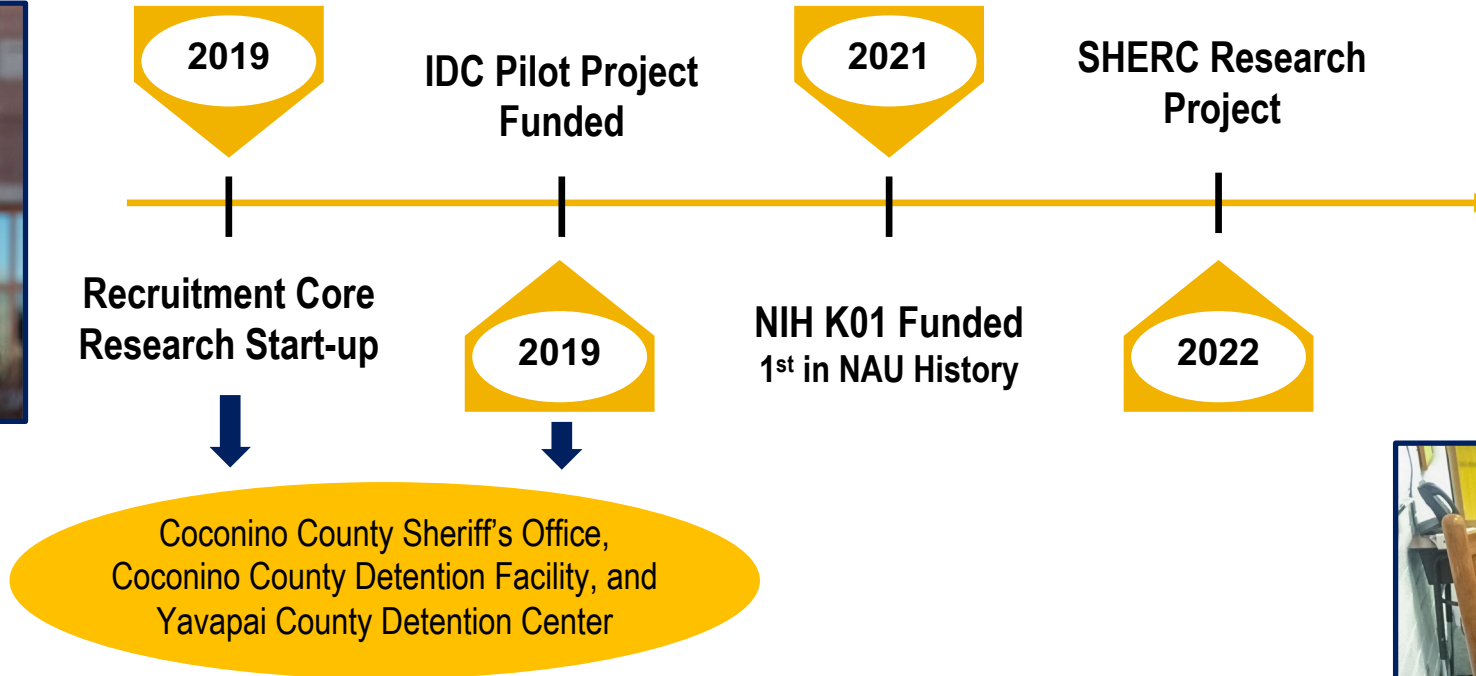
35% **URIs**

*Based on self-reported race/ethnicity

SHERC Community Partnerships & Health Equity Research



Dr. Ricky Camplain



Community-Campus Partnerships (CCPS)

16 CCPS Projects

4 Grant Awards

7 Presentations

4 Manuscripts

1 University/Tribal Nation Data Agreement

- **81% Early-Stage Investigators (ESIs)**
- **68% Continued to work with their community partners after CCPS project**



Dr. Heather Williamson (NAU) and Russ Randall (Northern Arizona Community of Practice Transition Team), CCPS Partners

SHERC Student Engagement in Research

91 students engaged by SHERC*:

(2017-2021)

- 17 Graduate Research Assistants
- 77 Trainees (Student wage positions)

23 cores/projects supported students

- 14 pilots
- 4 supplements
- 3 research projects
- 2 cores



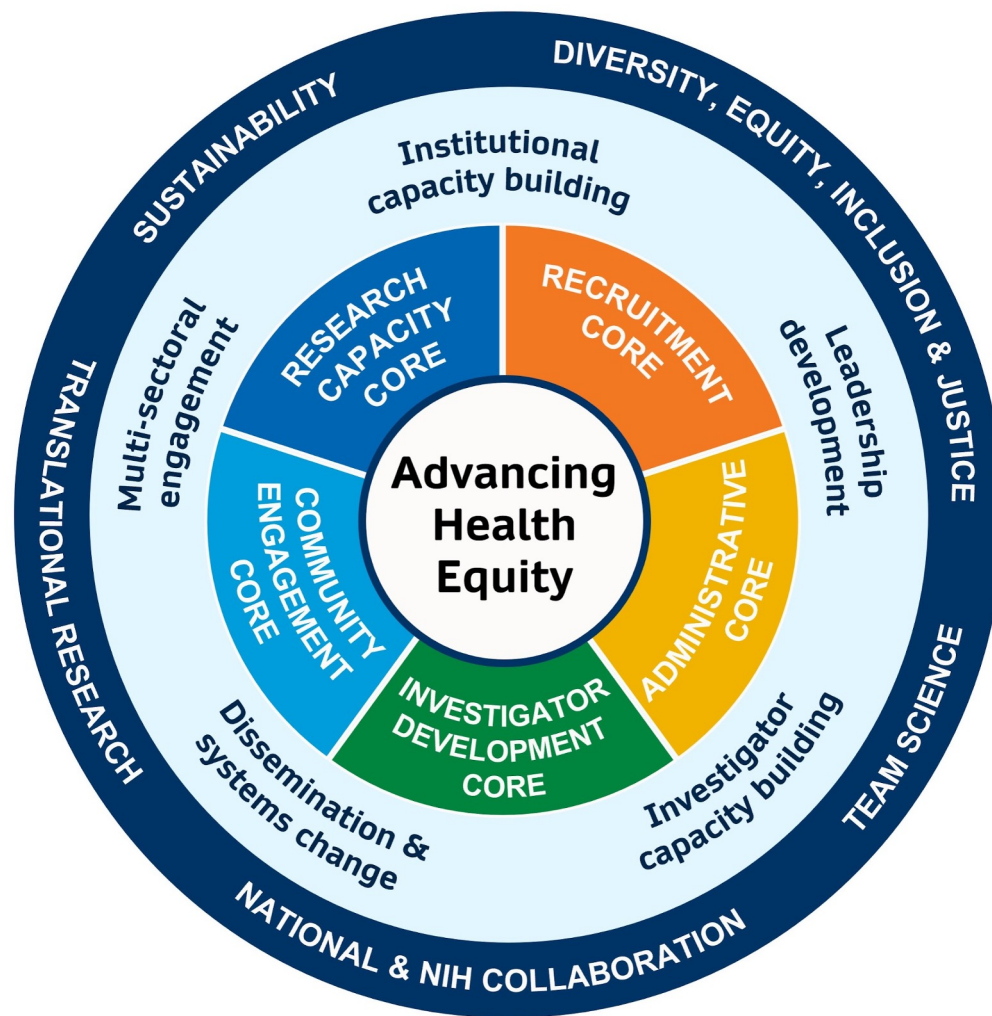
*7 students worked on multiple projects or in multiple roles

Grant Renewal (2022-2027)



The SHERC program was renewed in September 2022!!!

Integrated Strategies & Innovations for Advancing Health Equity

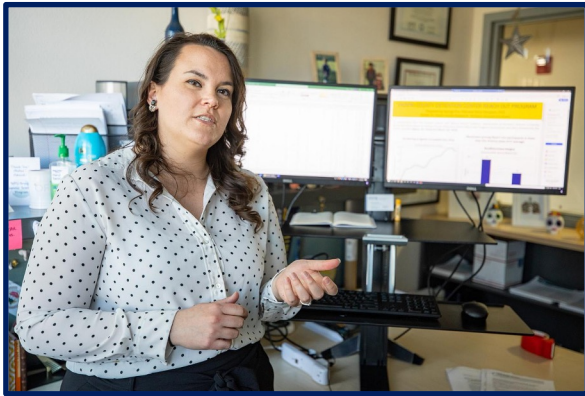


Core Goals (2022-2027)

Cores	Goals
Administrative	Increase capacity for an effective and sustainable RCMI (SHERC) and support SHERC investigators to address health disparities and advance health equity in AZ & Southwest US.
Research Capacity	Provide methodological, statistical, and informatics support for SHERC investigators to maximize the quality and productivity of all research.
Investigator Development	Foster research career enhancement, with a special emphasis on UR faculty & ESIs.
Community Engagement	Engage community-based orgs., leaders, policy experts, & researchers in accountability, relationship building, action, & reflection to enhance community assets.
Recruitment	Recruit 2 faculty members with established health equity research programs to NAU and support their research.

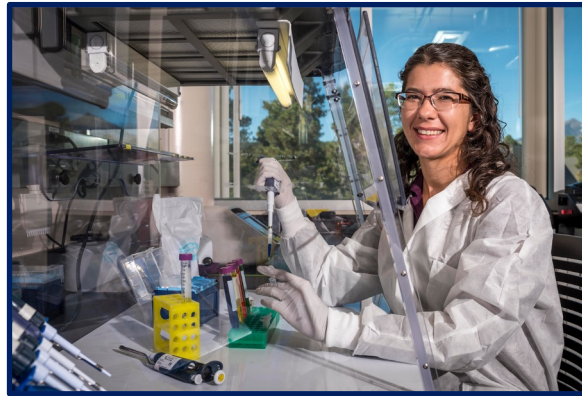
SHERC Research Projects (2022-2027)

Gender differences in physical activity opportunities and impacts while incarcerated



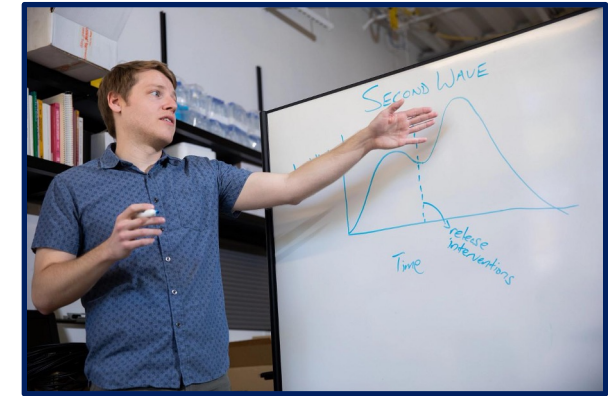
Ricky Camplain, Lead Investigator

Evaluation of soluble fiber as a strategy to decrease asthma morbidity in underserved populations



Emily Cope, Lead Investigator

SSCIMA: Integrating analysis of socio-economic sub-population dynamics to improve spatial models of infectious disease



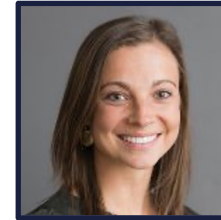
Joe Mihaljevic, Lead Investigator

SHERC Pilot Projects...applications for 2022-2023 are underway!

Administrative Core Team



Julie Baldwin, PhD
Regents' Professor, Health Sciences
SHERC Principal Investigator
Role: Lead



Taylor Lane, PhD
Research Scientist
Role: Program Integration



Suzie Martinez, MSM
Manager, Grant & Project Support
Role: Program Manager



Bree Bullard, BA
Role: Events Coordinator, Intermediate



Kelly Laurila, MA
Research Scientist
Role: Lead Evaluator



Lisa Dahm, MA
Role: Marketing & Communications Coordinator



Michael Petillo, MS
Research Coordinator, Senior
Role: Evaluator & DEIJ Coordinator



Denise Stippick
Role: Grant & Project Support Coordinator

Administrative Core: Aims (2022-2027)

Aim 1: Continue to build and sustain the **leadership infrastructure** of SHERC at NAU

Aim 2: Strengthen and maintain an **effective collaborative** of community, institutional, organizational, and government partners

Aim 3: Develop and expand the ability of SHERC investigators to participate in **team science and translational approaches** in health equity research in Arizona and the southwestern US

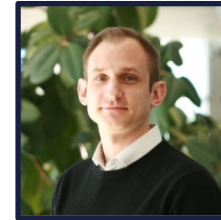
Aim 4: Build and maintain an **interactive, comprehensive evaluation** feedback system to support data-driven decision making for program improvement and innovation



Research Capacity Core (RCC) Team



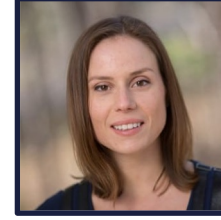
Cathy Propper, PhD
Professor, Biological Sciences
Role: Lead



Mark Remiker, MA
Role: Research Coordinator, Senior



Monica Lininger, PhD, LAT, ATC
Associate Professor, PT & Athletic Training
Role: Co-Lead; TAG-SC Director



Christine Kirby, MA
Role: Research Coordinator, Senior



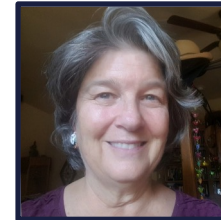
Bob Trotter, II, PhD
Regents' Professor Emeritus
Role: Co-Lead



Amy Gelatt, MPH
Role: Research Coordinator



Indrakshi Roy, PhD
Assistant Research Professor
Role: Biostatistician, Senior



Marcelle Coder, MA
Role: Assistant Director, CHER

Research Capacity Core: Aims (2022-2027)

Aim 1: Renovation of **computational core** facility

Aim 2: Ensure sustainability of **Technical Assistance Group Service Center (TAG-SC)**

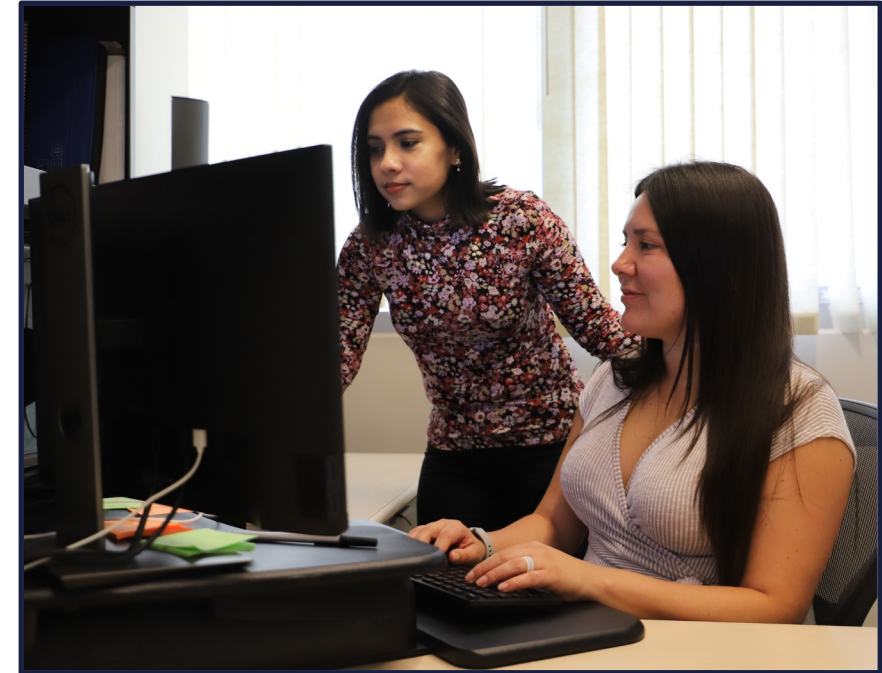
Aim 3: Expand the **Methodological Dissemination Program (MDP)** by providing cutting-edge expertise, training, and collaborative opportunities for innovative research development with an emphasis on enhancing multidisciplinary team science approaches, data science and community-engaged research

Aim 4: Expand the **Capacity Enhancement Program** to support equipment, data, and computing resource acquisition and maintenance, and enhance core facility collaboration for health equity research



Technical Assistance Group Service Center (TAG-SC)

- **Faculty and staff assist NAU investigators with health-related research**
- **Services include:**
 - Qualitative or quantitative methods and analyses
 - REDCap assistance
 - Machine learning
 - Big data
- **Brief consultation** (1-2 hours) or up to 10 hours of assistance



Advanced Methodological Capacity

- NAU internal workshops (live and prerecorded)
- External workshops financial support
- Publicly available software training

NAU Internal Workshop Examples

Social Network Analysis	Factor Analysis	R & Animint2
Community-Based Participatory Research	Power Analysis	SPSS & SAS
Focus Groups	Structural Equation Modeling	Atlas & NVivo



Research Capacity Core Fall 2022 Workshops

Funded by NIH
U54MD012388

Register today! nau.edu/sherc/ric-event-registration-form/

Tuesday, Sept. 27 | 1–3 p.m.

JMPing to the Next Level: Intermediate Statistical Analysis using the JMP Platform

Catherine Propper, PhD, Professor, Biological Sciences

This workshop will demonstrate some of the analyses frameworks within the JMP statistical platform. We will cover how to set up your data for t-tests, one-way and two-way ANOVA's or Kruskal Wallis Tests. Participants will need to view the Introduction to JMP workshop (<https://nau.edu/sherc/ric-pre-recorded-workshops-registration>) prior to the upcoming Intermediate Level workshop. We will follow a similar framework of hypothesis testing and examining the results to evaluate outcomes.



Tuesday, Oct. 4 | 9–11 a.m.

SPSS for Intermediate Level Users

Monica Lininger, PhD, Associate Professor, Athletic Training Program

Have you attended an introductory workshop on SPSS and need the next level of instruction? This interactive workshop will provide instruction for inferential statistics including t-tests, ANOVAs, chi-squares using SPSS. SPSS is available through NAU's Information Technology Services; participants will be asked to download the software prior to the workshop. Participants will also need to view the Introduction to SPSS workshop (<https://nau.edu/sherc/ric-pre-recorded-workshops-registration>) prior to the upcoming intermediate level workshop.



Tuesday, Oct. 11 | 11:30 a.m.–1 p.m.

Intro to Covidence for Systematic Review Management

Pamela Buzzard, Health Sciences Librarian, MILS, Cline Library

Covidence is software designed for managing and streamlining your systematic review. It can perform the following functions to make review production more efficient: upload search results, screen abstracts and full text study reports, complete data collection, conduct risk of bias assessment, resolve disagreements, export data into RevMan or Excel. In this session, librarians will show how the software could support your systematic review production and answer questions from researchers.



Thursday, Oct. 20 | 11 a.m.–1:30 p.m.

Basic Inferential Statistics Using R

Indrakshi Roy, PhD, Biostatistician, Center for Health Equity Research

This interactive workshop will provide instruction for inferential statistics including t-tests, ANOVAs, chi-squares using R. R is a free statistical software; participants will be asked to download the software prior to the workshop. Participants will also need to view the Introduction to R workshop prior to this workshop (<https://nau.edu/sherc/ric-pre-recorded-workshops-registration>).



Thursday, Nov. 3 | 11 a.m.–3 p.m.

Navigating the Mix of Mixed Methods Projects

Robert Trotter, PhD, Regents' Professor, Anthropology

This workshop covers three models for mixed methods research design. Model 1: Explaining the Numbers. This model presents a mixed methods design that focuses on a sequential quantitative–qualitative mixed methods process where the qualitative research is designed to be an enhancement and a translational process for understanding a hypothesis-driven research program. Model 2: Creating questions and tests of hypothesis. Model 3: Balanced or Integrative Mixed Methods Design. This model allows for a longitudinal (iterative) mixed methods design that is valuable for creating and implementing program impact designs.



Data, Tools, and Infrastructure Support

- **Adams Remote Server**

- Secure server with software for analysis and data storage
- Access through the Regulatory Compliance Office

- **Secondary Datasets**

- Medicare dataset
- Publicly available health-related electronic databases

- **Laboratory Equipment Support**

- Financial support for equipment repair and/or service contracts
- Equipment used health equity related research.



atlas.ti



Investigator Development Core (IDC) Team



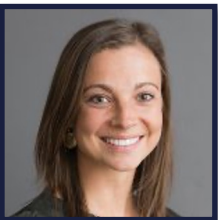
Dirk de Heer, PhD, MPH
Professor, Department of Health Sciences
Role: Lead



Nicky Teufel-Shone, PhD
Professor, Department of Health Sciences
Role: Co-Lead



Christine Smith
Project Manager
Role: Organizational/Administrative Support



Taylor Lane, PhD
Research Scientist
Role: Scientific Support



Investigator Development Core: Aims (2022-2027)

Aim 1: Expand the **Pilot Project Program (PPP)** portfolio to **support Early-Stage Investigators (ESIs) and Underrepresented (UR) faculty** conducting health equity research in basic biomedical, behavioral, and clinical sciences with a focus on translational research and team science.

Aim 2: Expand and evaluate a newly developed **Individualized Mentoring Program (IMP)** to enhance development of ESIs and UR faculty conducting health equity research in basic biomedical, behavioral, and clinical sciences with a focus on translational research and team science.



Potential Funding Opportunities

Pilot Project Program

- Initial seed funding for Post-docs and ESIs to establish new impactful programs in health disparities research
- \$50K/year, up to 2 years
- Call for Proposals sent out Fall

Administrative Supplements

- Need to be affiliated with SHERC to apply
- When NIH makes available



Individualized Mentorship Program

Individualized Mentorship

- One-on-one meetings
- Building mentorship team
- Brief career development plan
- Training in team science, translational research, and mentorship
- Other resources, career enhancement activities, and professional development

Outcomes: productivity, career advancement, mentorship quality



Professional Development

- **Manuscript writing workshop** (NAU campus-wide)
 - Help faculty improve their writing productivity and quality
- **Manuscript writing support** (for health equity research)
 - Help faculty improve their writing productivity and quality
 - Review overall manuscript structure and content
 - Revise paragraph and sentence-level text
 - Improve copy-editing skills
 - Ensure manuscript appropriately addresses journal aims, scope, and editorial guidelines
- **External (non-NAU) faculty NIH proposal review** (for health equity research)
- **Mentor/Collaborator travel** (for SHERC funded and junior faculty)

Community Engagement Core (CEC) Team



Samantha Sabo, DrPH, MPH
Associate Professor, Health Sciences
Role: Lead



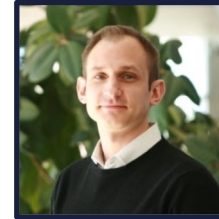
Nicky Teufel-Shone, PhD
Professor, Health Sciences
Role: Co-Lead



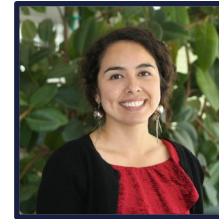
Heather Williamson, DrPH
Associate Professor, Occupational Therapy
Role: Co-Investigator



Carmenlita Chief, MPH
Role: Research Coordinator, Senior



Mark Remiker, MA
Role: Research Coordinator, Senior



Alexandra Samarron Longorio, RDN, MPH
Role: Research Coordinator, Senior



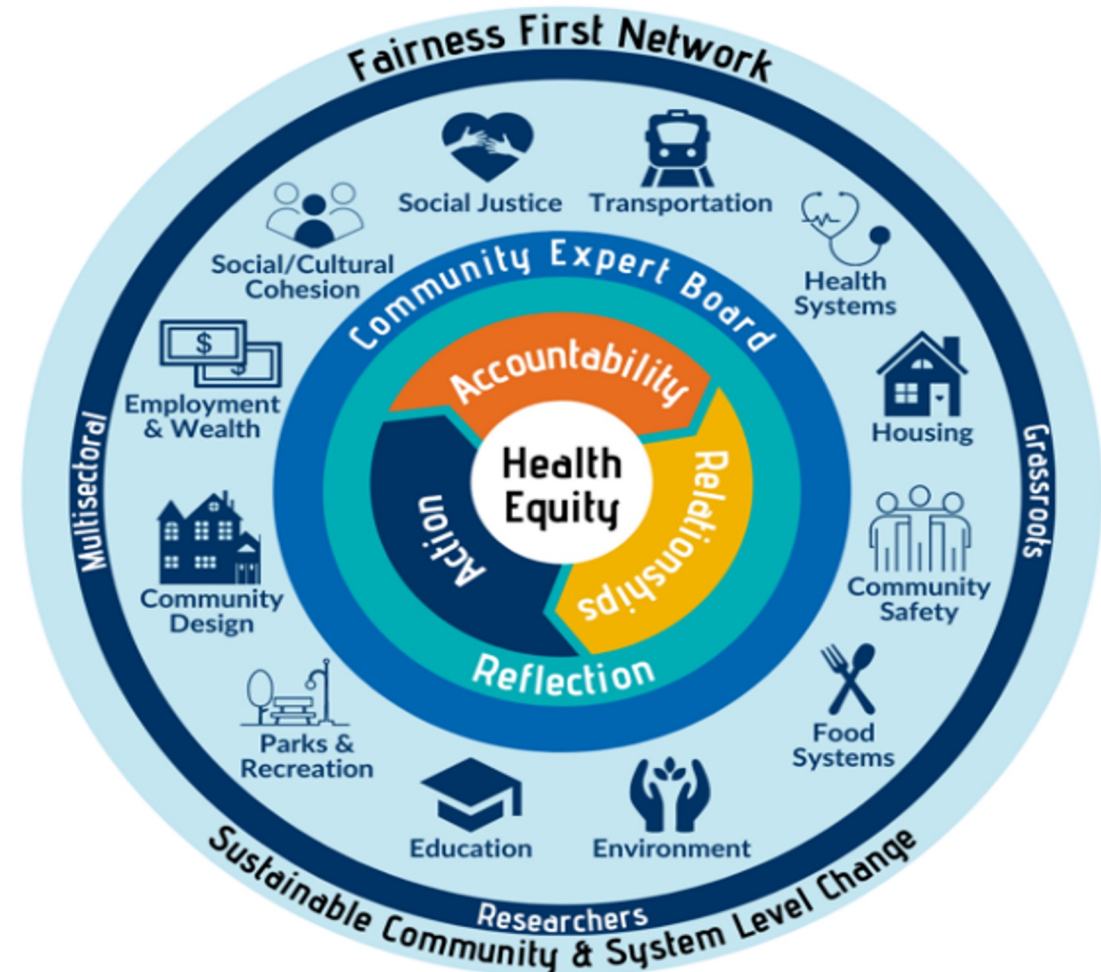
Alex Olin
Role: Public Health Student

Community Engagement Core Aims (2022-2027)

Aim 1 (Accountability): Cultivate and maintain an active **Community Expert Board (CEB)** of multi-sectoral community stakeholders to advise overall Center and core operational activities

Aim 2 (Relationships): Establish the **Fairness First Network (FFN)** to facilitate community-based dissemination and strategic planning for sustainable systems-level change

Aim 3 (Action): Build and mobilize **university and community researcher partnership capacity** to enhance research relevance and dissemination of research findings



Community-Engagement Resources

- **Community Campus Partnership Support**
 - Funding for community partner and NAU researcher to build partnership through meetings, conference attendance, etc.
- **Regional Health Equity Survey**
 - Survey of 200 northern AZ county-level leaders from various sectors who shared their knowledge, attitudes, and actions on health equity.
- **Community Partnership Video Series**
 - Features four community-university partnerships with a focus on the partnership development journey and a corresponding discussion guide.
- **Fairness First (FF) Campaign**
 - Opportunities for joint dialogue around regional topics of health equity, including Health Justice Futures, Fairness FirstX Talks, and FF blog



Fairness First



NAU NORTHERN ARIZONA
UNIVERSITY
Center for Health Equity Research

A podcast dedicated to exploring issues of health equity in the Southwest.

Episode #1: What is Health Equity Any Way?

Available at nau.edu/sherc/
Email at SHERC@nau.edu or Follow us 

 NAUCHER  CHERArizona  NAU.CHER

Recruitment Core



Julie Baldwin, PhD
Regents' Professor, Health Sciences
SHERC Principal Investigator
Role: Lead



Recruitment Core Aims (2022-2027)

Aim 1: Recruit 2 mid-level or senior faculty members with established health equity research programs to fill gaps in institutional expertise, and to support the mission of SHERC

Aim 2: Support the new hires in establishing collaborative and independent health equity research programs at NAU and integrating them into SHERC as collaborators, mentors, and leaders



Contact Us

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Catherine Propper, PhD

Research Capacity Core Lead
catherine.propper@nau.edu

Dirk de Heer, PhD

Investigator Development Core Lead
dirk.deheer@nau.edu

Samantha Sabo, DrPH

Community Engagement Core Lead
samantha.sabo@nau.edu



Thank You!

Questions and Discussion

