



National Institute of
General Medical Sciences



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National Institute of
General Medical
Sciences

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Research Capacity Building at NIH

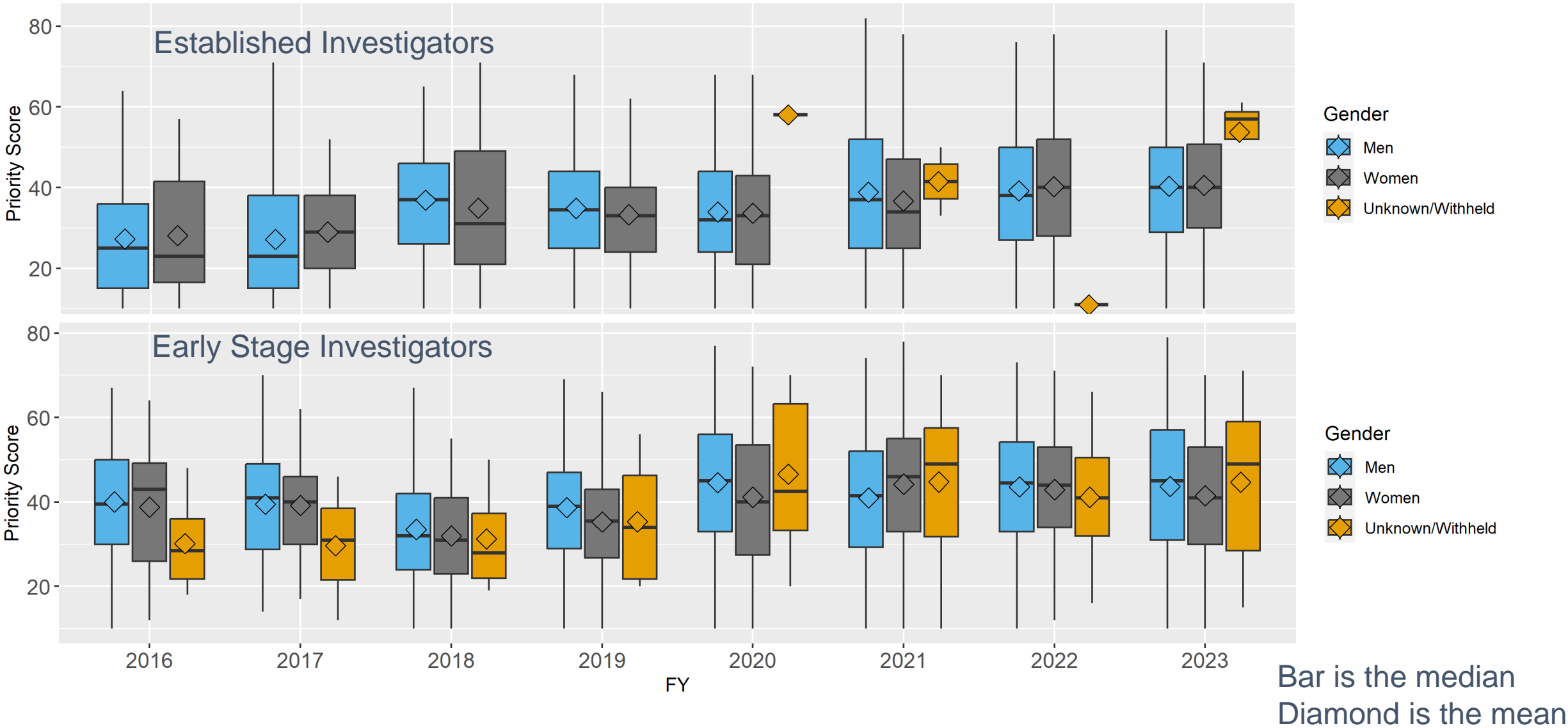
NIGMS Mission

The National Institute of General Medical Sciences (NIGMS) *supports basic research* that increases our understanding of biological processes and lays the foundation for advances in disease diagnosis, treatment, and prevention. NIGMS also supports *research in specific clinical areas that affect multiple organ systems*: anesthesiology and peri-operative pain; clinical pharmacology common to multiple drugs and treatments; and injury, critical illness, sepsis, and wound healing. NIGMS-funded scientists investigate how living systems work at a range of levels—from molecules and cells to tissues and organs—in research organisms, humans, and populations. Additionally, to ensure the vitality and continued productivity of the research enterprise, *NIGMS provides leadership in supporting the training of the next generation of scientists, enhancing the diversity of the scientific workforce, and developing research capacity throughout the country.*

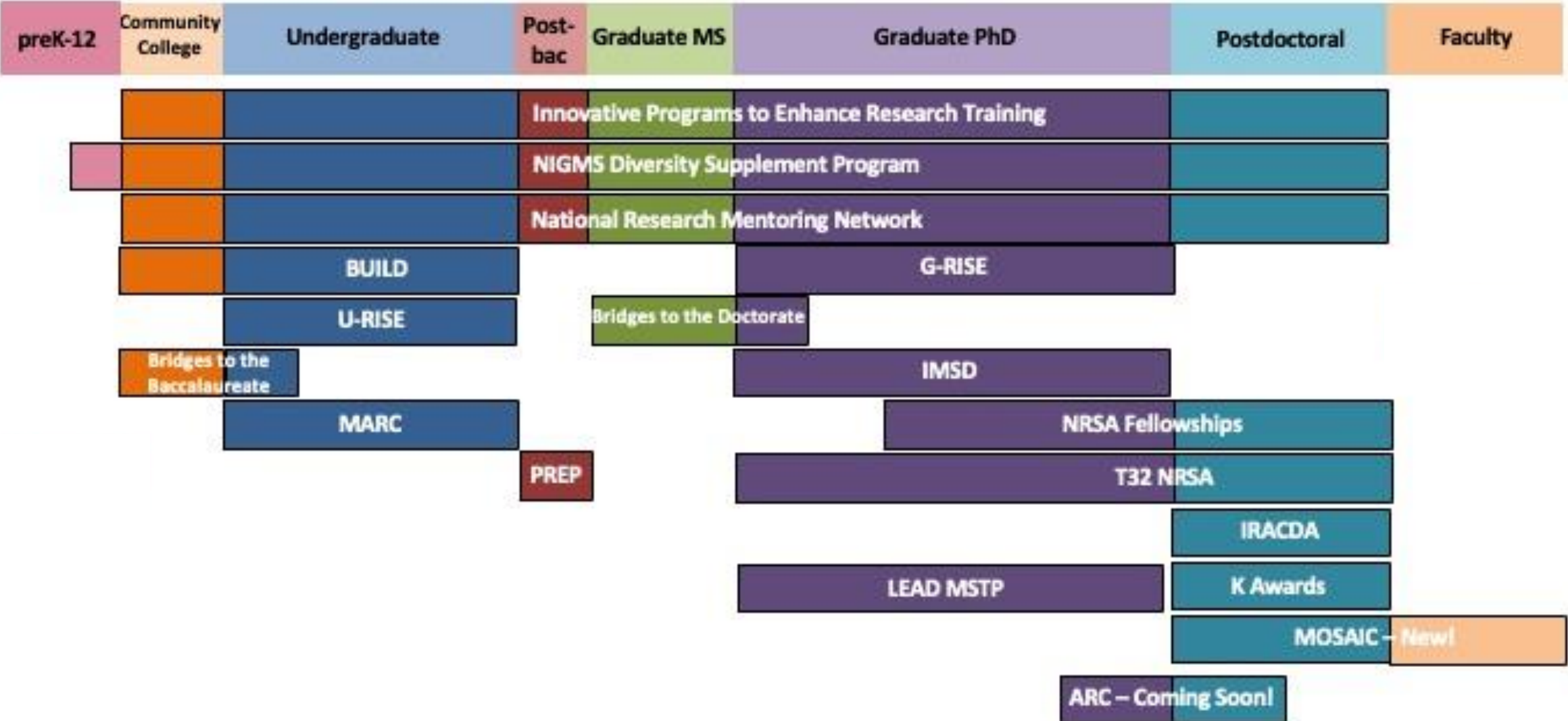
MIRA Supports Basic Research & Multi-Organ Clinical Research

- Maximizing Investigators' Research Awards (MIRA) are R01-equivalent awards
- One grant per PI to provide support for their NIGMS-related research program
- Flexible: No specific aims; research can change direction
- High renewal rates, significantly higher than for R01s (~2x)
- Eligibility: Early-stage investigators (ESIs), established investigators (EIs) with at least one single PI NIGMS R01-equivalent grant, new investigators (NIs)
 - ESIs and EIs reviewed by separate panels

MIRA: Women & Men Do Equally Well in Peer Review



NIGMS Training, Workforce Development, and Diversity Programs



MOSAIC Program Updates

- Enhance diversity of faculty in research-intensive positions
- **Diversity-focused K99/R00s and UE5 Mentoring Hubs** (AAMC, ASBMB, ASCB, ASM – *need neurosci.*)
- 23 NIH ICOs currently participate in MOSAIC
- 130+ K99s awarded FY21-23 by 17 ICs (~50% success rate)
- **MOSAIC scholars - ~75% women, ~70% URM**
- ≥42 scholars have already started or accepted faculty positions
- Scholars' bios: go.usa.gov/xuR35



The Division for Research Capacity Building (DRCB)

DRCB administers the Institutional Development Award (IDeA) program that builds research capacity in states that historically have had low levels of NIH funding.

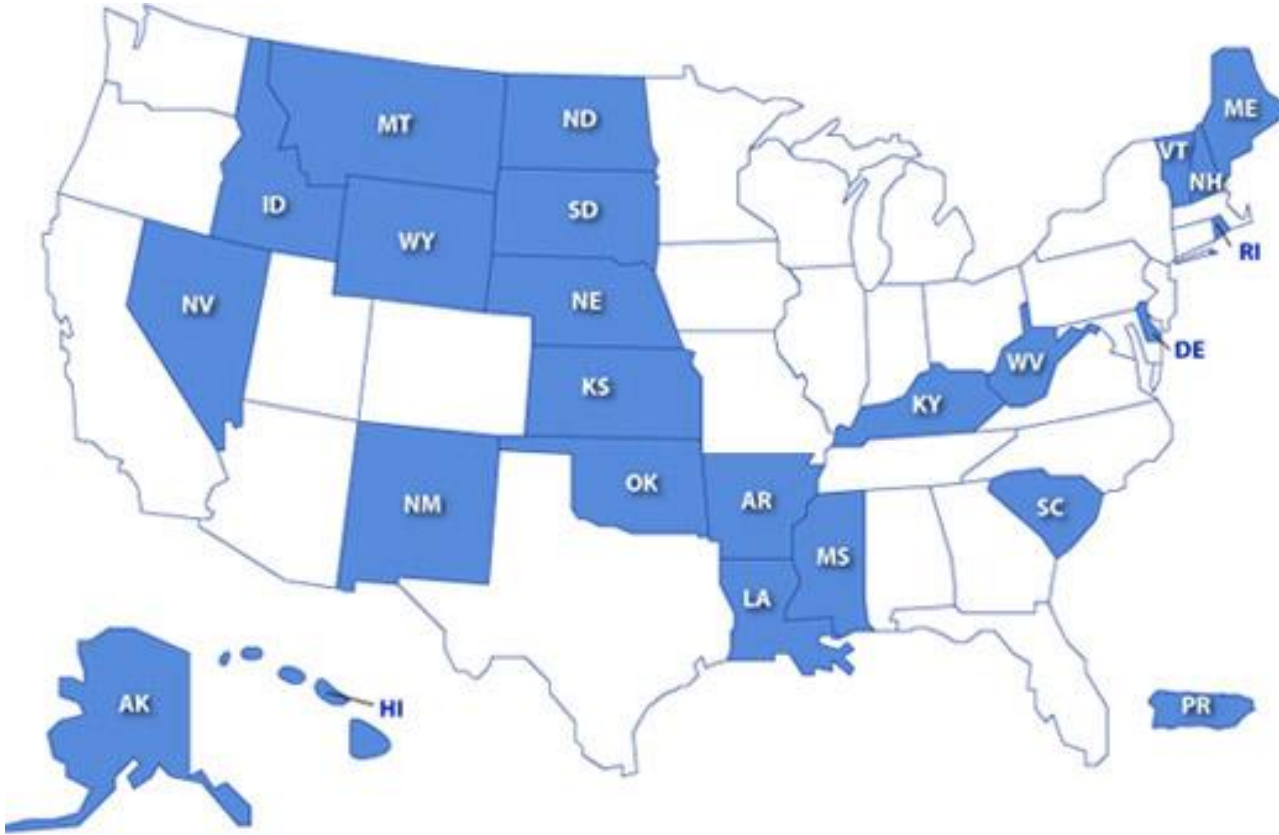
IDeA supports:

- research in all NIH mission areas
- research workforce development
- research infrastructure improvements

DRCB also oversees

- Native American Research Centers for Health (NARCH) program
- Support for Research Excellence (SuRE) program
- Science Education Partnership Awards (SEPA) program

NIGMS IDeA Program



- **24 IDeA Networks of Biomedical Research Excellence (INBRE)** Link one or more research-intensive institution in an IDeA state to Primarily Undergraduate Institutions in the state
- **143 Centers of Biomedical Research Excellence (COBRE)**
 - Develop research capacity in broad scientific areas with a focus on early-career independent researchers
- **13 Clinical and Translational Research (CTR) Programs**

4 IDeA Regional Entrepreneurship Development (I-RED) awards

IDeA Co-Funding: Co-fund R01/R15 applications submitted to any NIH IC(~40/yr)

COBRE: Center for American Indian and Rural Health Equity

Alex Adams, PI (Montana State University)

DOI: 10.1111/jrh.12572

ORIGINAL ARTICLE

THE JOURNAL OF **RURAL HEALTH**



Evaluating disparities in access to obstetric services for American Indian women across Montana

Maggie L. Thorsen PhD¹ | Sean Harris PhD² | Ronald McGarvey PhD³ |

Janelle Palacios PhD, CNM⁴ | **Andreas Thorsen PhD² Research Project Leader**

“AIAN women were 20-times more likely to give birth at a hospital without obstetric services and had less access to complex obstetric care.”

“Current federal policies aim to reduce maternity care professional shortages. Our findings suggest that racial disparities in access to complex obstetric care will persist in Montana unless facility-level infrastructure is also expanded to reach AIAN women.”

COBRE: Research Expanding Access to Child Health (REACH)

Anne Kazak and Melissa Alderfer, MPs (Nemours/ Al duPont Hospital for Children)

Pediatric Cardiology (2023) 44:1479–1486

<https://doi.org/10.1007/s00246-023-03209-7>

RESEARCH

Virtually Delivered Psychosocial Intervention for Prenatally Diagnosed Congenital Heart Disease: Feasibility and Acceptability of HEARTPrep

Research Project

Leader Erica Sood^{1,2,3} · Shannon N. Nees^{2,3} · Shubhika Srivastava^{2,3} · Stephanie Ng² · Cynthia Torres⁴ ·

Angel Munoz Osorio¹ · Kimberly S. Canter^{1,3} · Katherine T. Braley⁵ · Lisa Spradley⁶ · Jennifer Stein⁶ · Erin Riegel⁷ ·

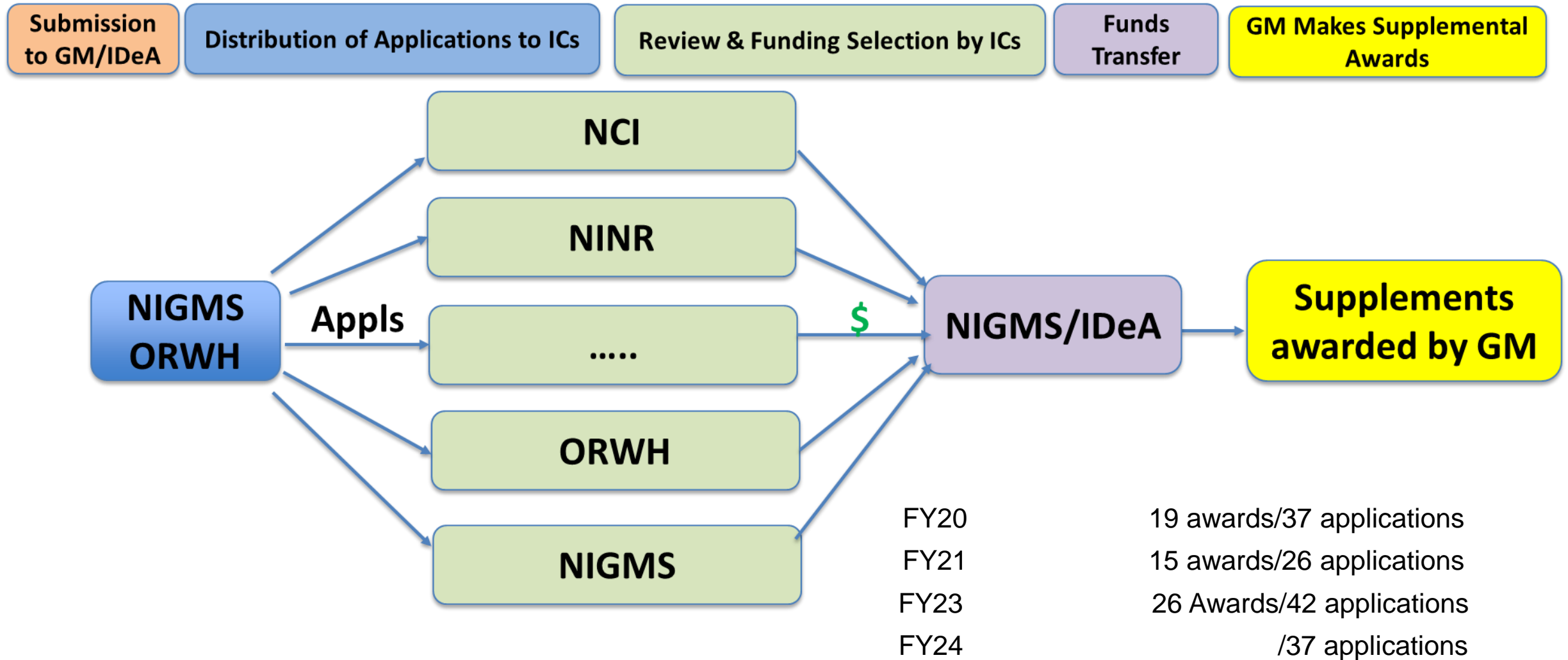
Anne E. Kazak^{1,3}

HEARTPrep is feasible and acceptable for mothers expecting a baby with CHD. Mothers reported HEARTPrep helped them feel less distressed, less alone more prepared, and more hopeful. Opportunities to process emotions, develop coping skills, learn with their partner, navigate relationships, understand they are not alone, connect with peer support, access resources, and prepare for stressors were described as helpful.

Partnerships with ORWH to Promote Women's Health Research in IDeA States

- **Notice of Special Interest (NOSI): Supporting Women's Health Research in IDeA States through the Centers of Biomedical Research Excellence (COBRE) Phase 1 Program**
- NOT-GM-23-012: 4 applications submitted in FY24; 3 received good scores
- ORWH & NIGMS co-funding 1, ONR & NIGMS are co-funding 1, and NIGMS is funding 1
- **Notice of Special Interest (NOSI): Administrative Supplements for Research on Women's Health in the IDeA States (with ORWH): NOT-GM-22-005 & NOT-GM-21-018**
 - For all IDeA programs
 - 16 NIH ICOs participate and opt to fund/co-fund

Collaboration with ORWH: Women's Health Research in IDeA States



Example 1 from ORWH IDeA Supplements

Grant: 3P30GM131944-02S1 (COBRE)

PI/Project Lead: William Ward and Johann Urschitz

Institution: University of Hawai'i at Manoa, HI

Administrative supplement title: IBR-COBRE Phase III/ Investigating the Maternal Microbial Metabolite Signature in Fetal Growth Abnormalities in a Multi-Ethnic Cohort

Funding IC: OD/ORWH

Outcome: Weingrill RB, Lee MJ, Benny P, Riel J, Saiki K, Garcia J, Oliveira LFAM, Fonseca EJDS, Souza ST, D'Amato FOS, Silva UR, Dutra ML, Marques ALX, Borbely AU, Urschitz J.

Temporal trends in microplastic accumulation in placentas from pregnancies in Hawai'i. *Environ Int.* 2023 **180**:108220. doi: 10.1016/j.envint.2023.108220

Example 2 from ORWH IDeA Supplements

Grant: 3P20GM103434-21S2 (INBRE)

PI/Project Lead: Gary Rankin and Nalini Santanam

Institution: Marshall University, WV

Administrative supplement title: West Virginia IDeA Network of Biomedical Research Excellence (WV-INBRE)/Targeting Fusin Axis in Endometriosis-Associated Ovarian Cancer

Funding IC: NIGMS

Outcome: Clower L, Fleshman T, Geldenhuys WJ, Santanam N. **Targeting Oxidative Stress Involved in Endometriosis and Its Pain.** *Biomolecules*. 2022 **12**:1055. doi: 10.3390/biom12081055.

Example 3 from ORWH IDeA supplements

Grant: 3U54GM104941-08S1 (CTR)

PI/Project Lead: Gregory Hicks and Emily Day

Institution: University of Delaware, DE

Administrative supplement title: Antibiotic-Loaded Nanoparticles for the Treatment of Bacterial Vaginosis in Pregnant and Non-Pregnant Women

Funding IC: NIAID

Outcome: Irvin-Choy NS, Nelson KM, Gleghorn JP, Day ES. **Delivery and short-term maternal and fetal safety of vaginally administered PEG-PLGA nanoparticles.**

Drug Deliv Transl Res. 2023 doi: 10.1007/s13346-023-01369-w.

NARCH

NARCH funds federally recognized AI/AN tribes and organizations for health research, research career enhancement, and research infrastructure enhancement

Grant: S06GM146121, funded by NCI

PI/Project Lead: Daniel Calac and Jesse Nodora (Indian Health Council, CA)

Project Title: **HPV Cancer Prevention Project**

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**Grant:** S06GM146079, funded by ORWH, NCI, and NIGMS

**PI/Project Lead:** Jeffrey Henderson and Patricia Nez Henderson (Black Hills Center, SD)

**Project Title:** **Smoking Cessation Intervention for American Indian Women Experiencing Intimate Partner Violence**

# SuRE R16 Program (2022 – present)

**SuRE R16s fund faculty-initiated research at resource-limited institutions of higher education; student involvement is required**

**Grant:** 1R16GM149365-01 (funded in FY23)

**PI:** Caroline Appleyard

**Institution:** Ponce School of Medicine, Puerto Rico

**Grant title:** The Enteric Glia as a Possible Target for Symptom Relief in Endometriosis

**Abridged Abstract:** Endometriosis is a poorly understood painful condition that incapacitates and affects the productivity and well-being of millions of women around the world. Symptoms of this disease are considered significant sources of stress occurring throughout the reproductive life of these patients. **This study will investigate the role of enteric glia in the pathophysiology of endometriosis.**

**Outcome:** *grant is <1 year old*



# Science Education Partnership Awards (SEPA)

**Grant:** 1R25GM137382, Co-funded with ORWH

**PI:** Mehnaaz Ali (Xavier University of Louisiana)

**Title:** Xavier University of Louisiana: Mobile Outreach for Laboratory Enrichment (XULA-MOLE)

**Goal:** Inquiry-based laboratory learning, professional development for teachers, and near-peer mentorship to increase the interest of high school students for science activities... [and] propel them to pursue careers in the STEM fields.

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Grant: R25 GM146264-01

PI: Giovanna Guerrero-Medina (Yale University, with sites in CT and PR)

Title: Seeds of Success: Empowering Girls in STEM Through Mentoring, Access, and Leadership

Outcome: Hernández-Matías, L, Díaz-Muñoz, G, Guerrero-Medina, G. **Seeds of Success: Empowering Latina STEM Girl Ambassadors Through Role Models, Leadership, and STEM-Related Experiences.** J STEM Outreach 6(2) 1- 14, 2023. PMID: 37885462

Discussion