



National Institute of
General Medical Sciences

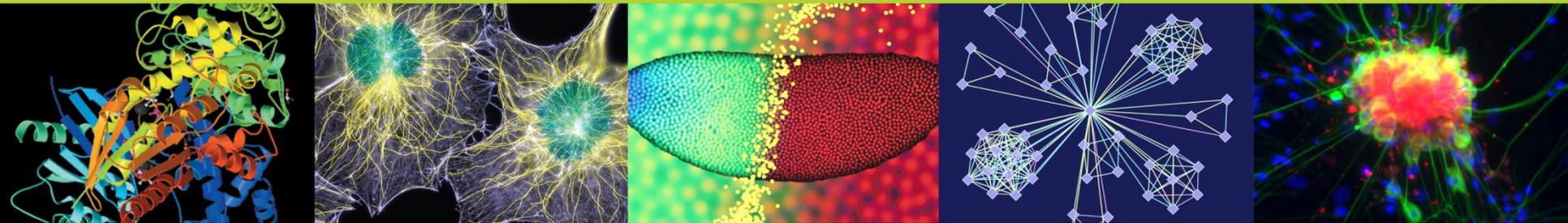


Sheila Caldwell, Ph.D.

Program Director

Center for Research Capacity
Building

IDeA Research Projects



National Institute of General Medical Sciences



Center for Research Capacity Building (CRCB) Administered Programs

IDeA

NARCH

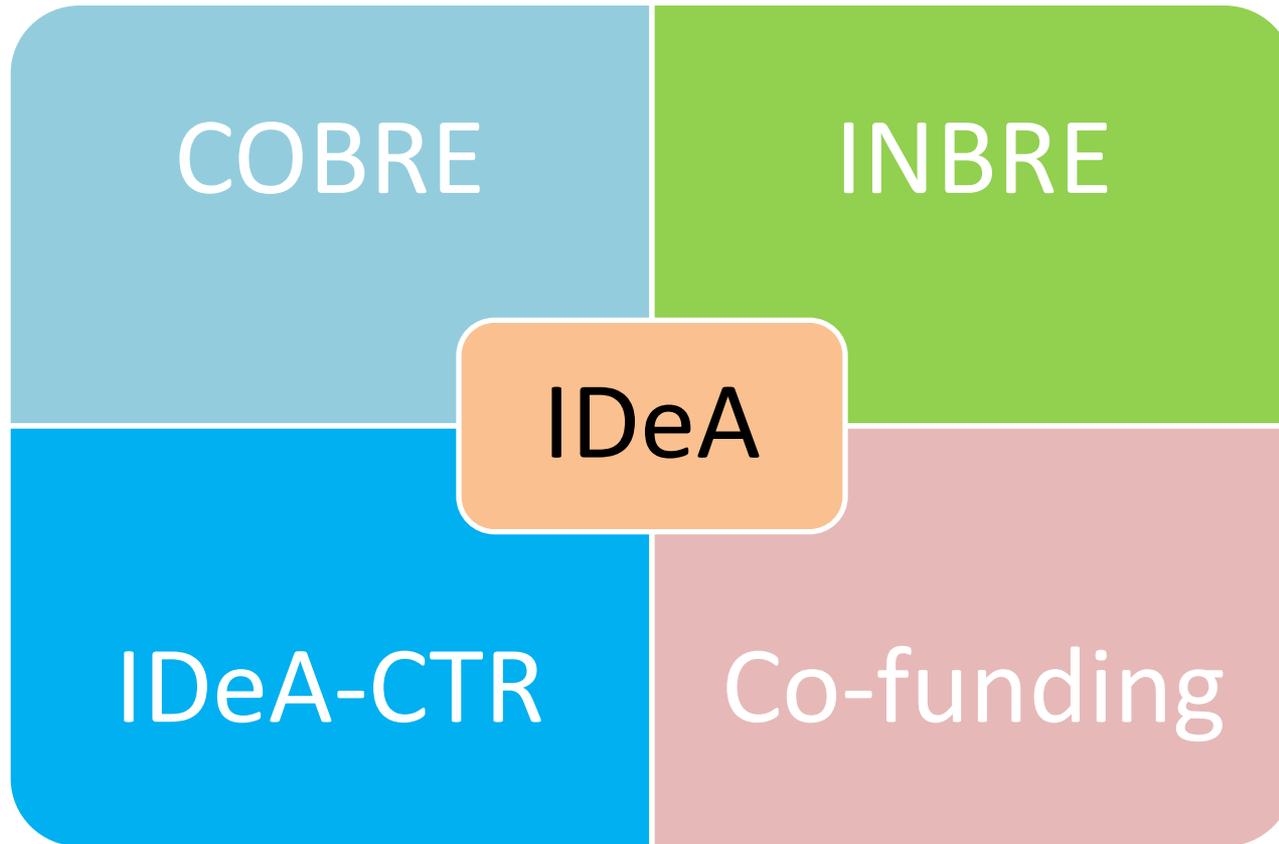
SCORE



Institutional Development Award (IDeA)



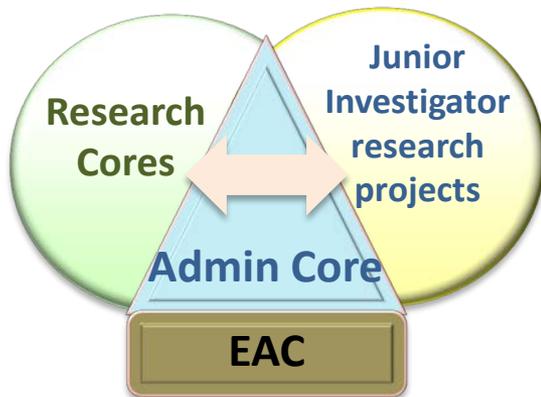
IDeA Supported Programs



COBRE Program

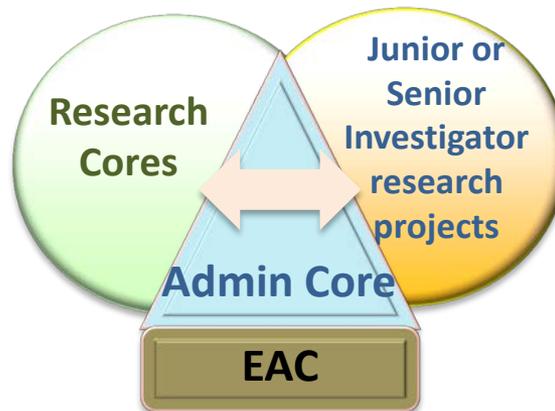
Goal: Develop advanced research infrastructure and a critical mass of investigators in institutions of IDeA states

Phase I



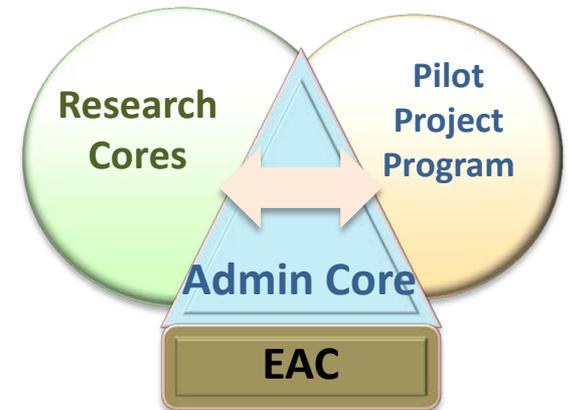
Development

Phase II

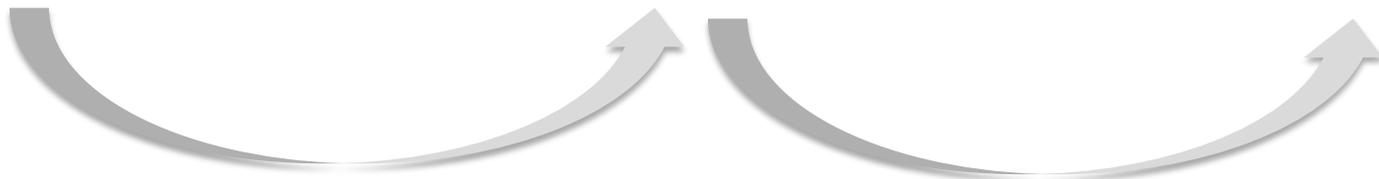


Strengthen

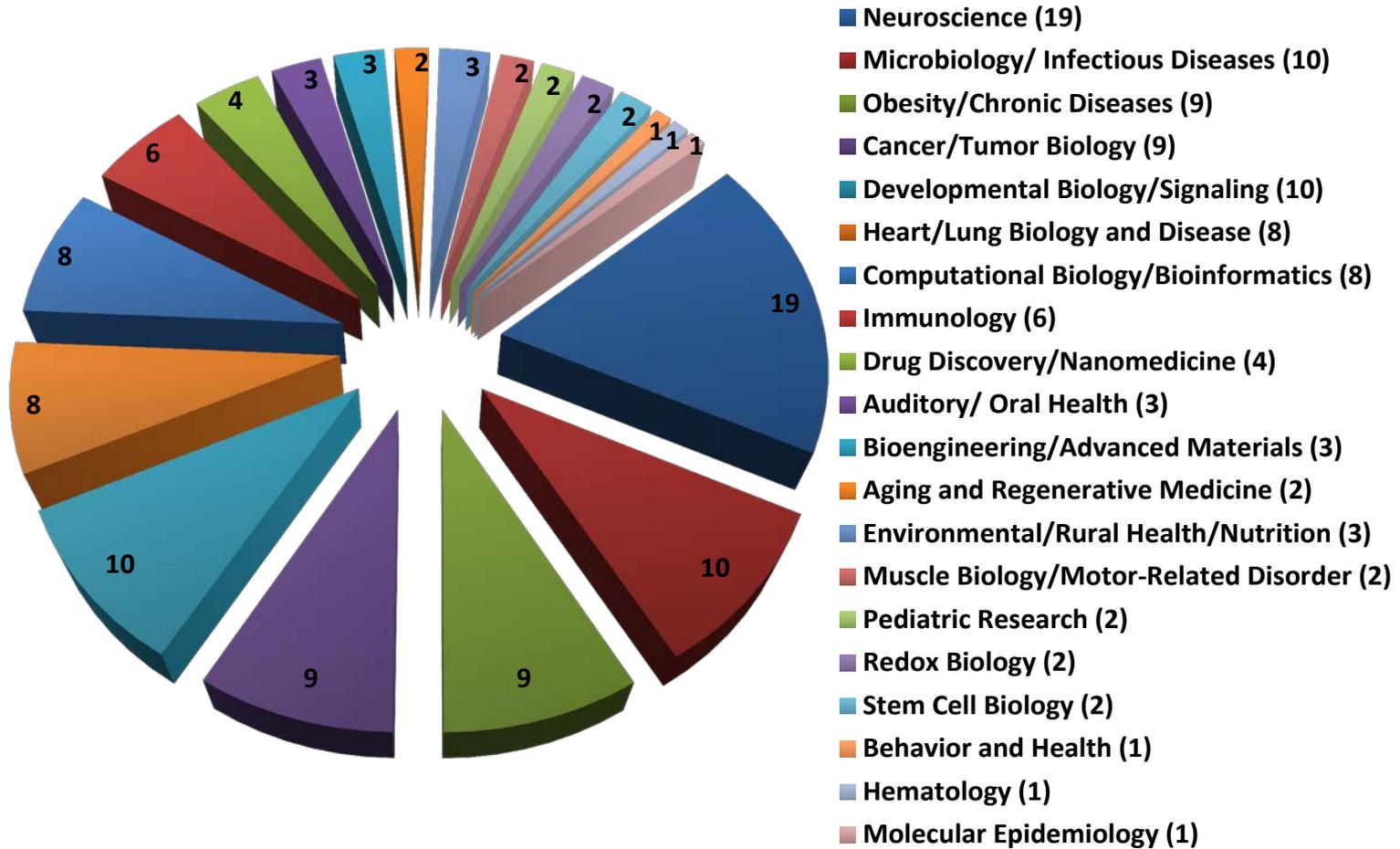
Phase III



Sustain and Transition



Scientific Themes of COBRE Grants



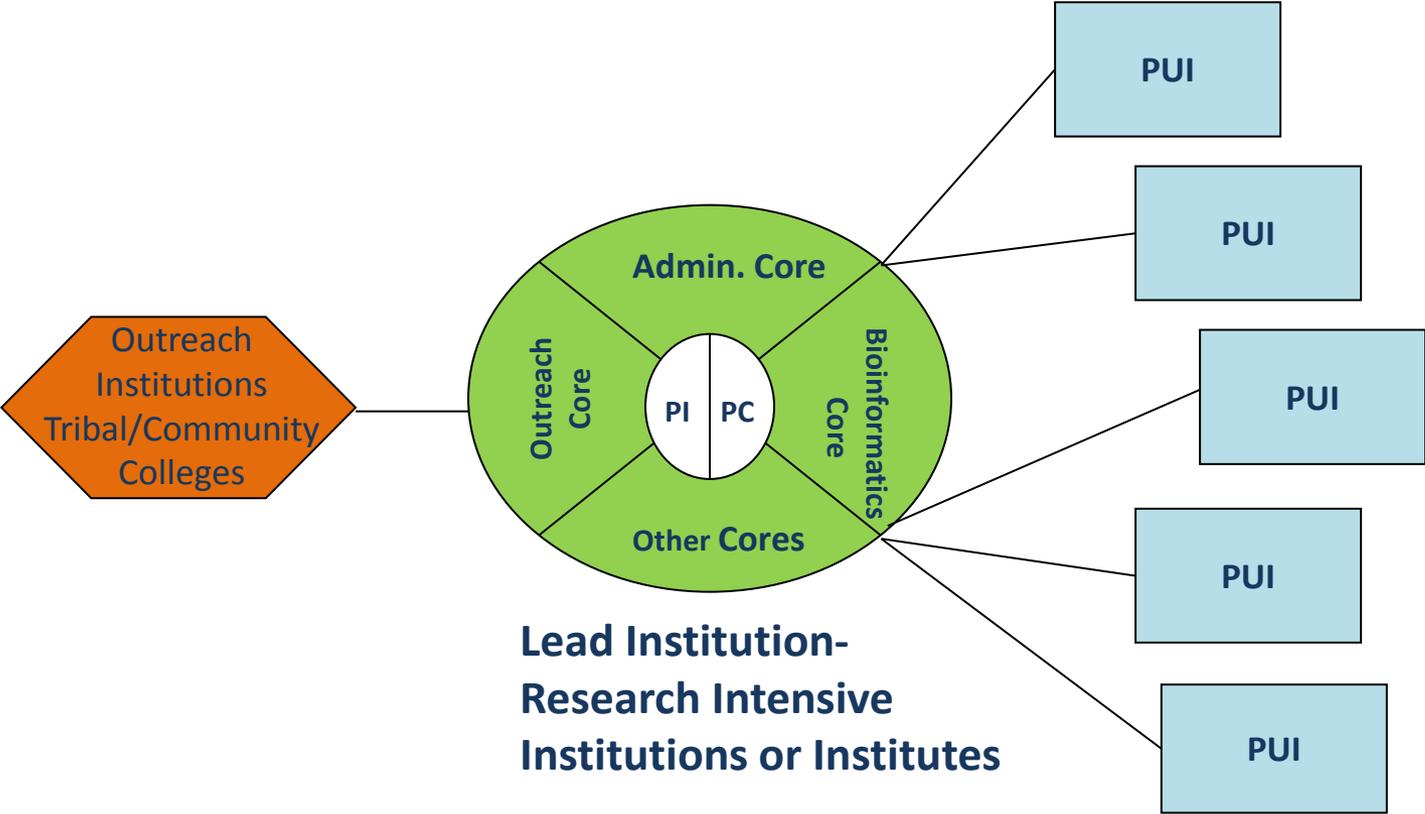
INBRE Program

Biomedical Research Infrastructure Networks (BRIN), began in 2001.

Re-competed in 2004 as IDeA Networks of Biomedical Research Excellence (INBRE).



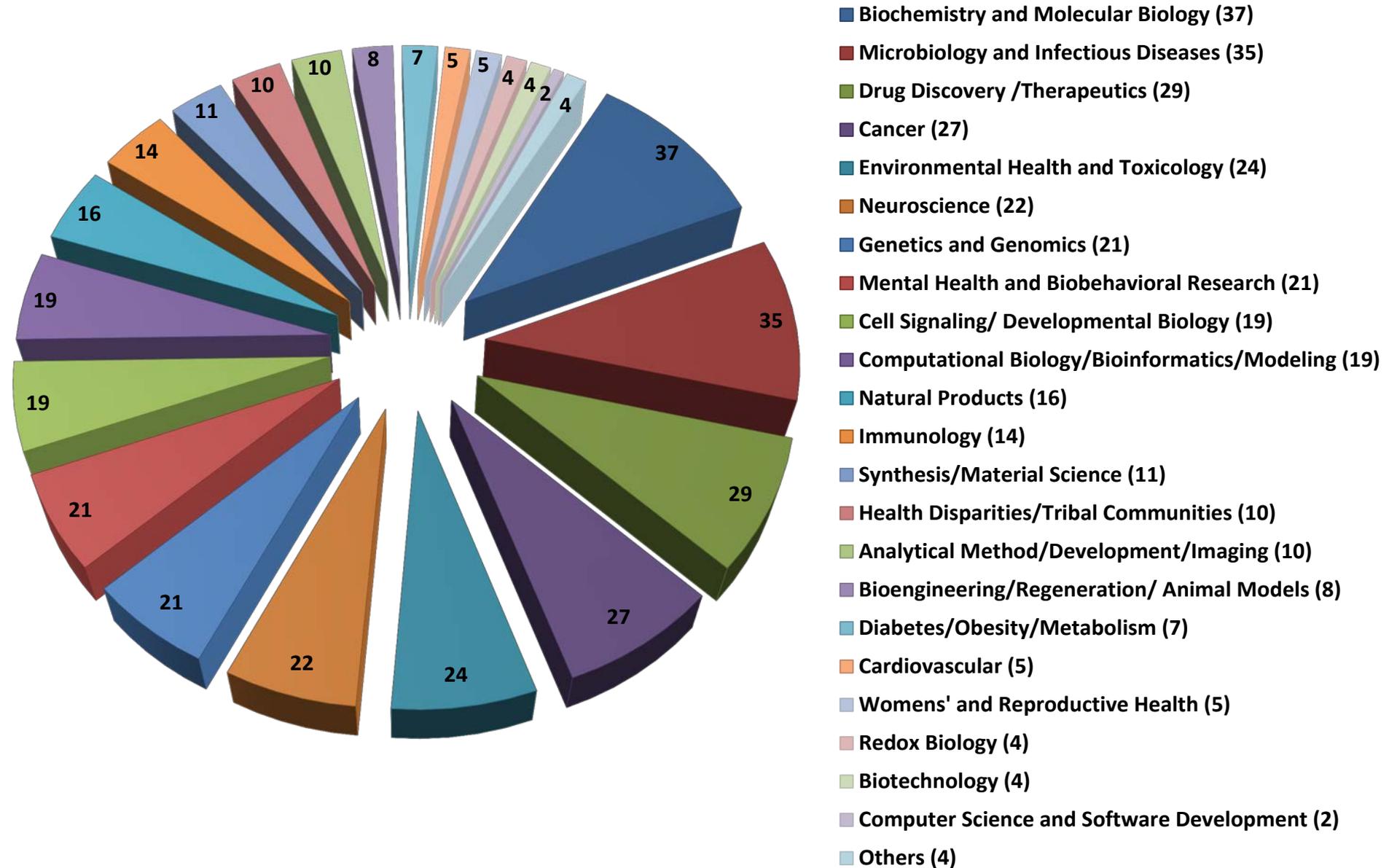
Model of INBRE



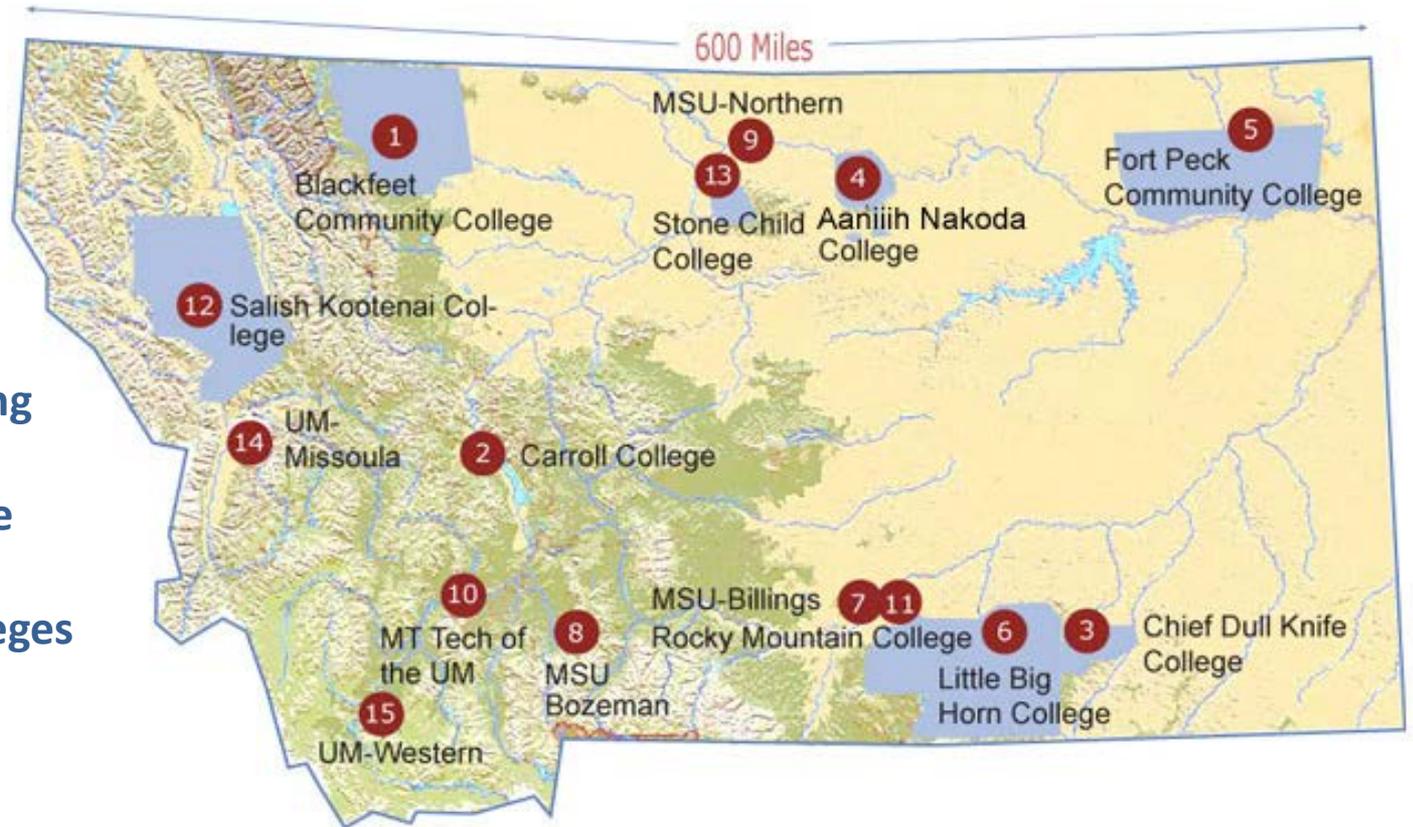
PUI = Primarily Undergraduate Institution



Scientific Themes of INBRE Grants



Montana INBRE Network



Comprised of:

- two PhD-granting institutions
- six baccalaureate colleges
- seven tribal colleges

http://www.inbre.montana.edu/network_map.php



Montana INBRE

Community Engagement Core

- Fosters and enhances both tribal and rural community-MT INBRE III partnerships that will mitigate health disparities through community engagement
- Community members are cultural experts; they know what health concerns are of most importance to their communities and what strategies for addressing them may be most effective
- The CEC will utilize a cyclical methodological model that entails continual leadership, input, and feedback from community members that is based on the Native or rural community being an equitable partner in the research.



West Nile Virus (WNV) Surveillance Program in Montana

Project Leader: Samuel Alvey, Carroll College

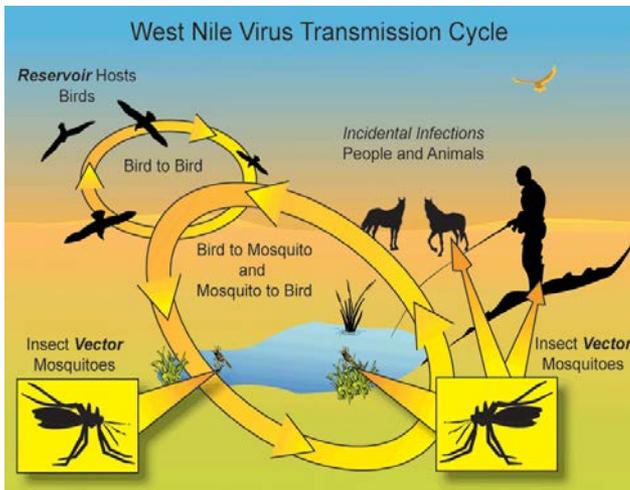


Background

- Vector surveillance provides early detection of potential outbreaks leading to accurate application of vector control, targeted public awareness, and better allocation of medical resources.
- Surveillance requires multiple partners to coordinate activities in a timely manner, execute proper handling and detection methodologies and report results to appropriate agencies. From 2009–2013 students in the Montana West Nile Virus Surveillance Program trapped more than a million mosquitoes, and sorted over 1,500 pools of *Cx. tarsalis* for WNV testing. In total, 57 mosquito pools were confirmed positive by both our laboratory and DPHHS.

Method

- Spatially referenced vector and viral presence have been analyzed in combination with GIS data layers of climatic, geographic and biological factors to develop a spatial risk assessment for WNV in Montana. This model can now be used to improve surveillance by making geographic predictions on where and when WNV-vector populations exist and pose a threat to human, horse and bird health.
- The use of horses in active surveillance programs has allowed for a more complete assessment of risk and should provide model validation



Scientific Advances

- Creation of vector model for Montana
- Baseline measurement of horse exposure to West Nile virus in Montana.

Montana INBRE Harmsen, Allen



Community Based Risk Assessment of Exposure to Contaminants via Water Sources on the Crow Reservation

Background:

- This project is a comprehensive community based risk assessment of exposure to chemical and bacterial contaminants via domestic, cultural and recreational uses of water on the Crow Reservation, in south central Montana.
- The hypotheses are that (a) reliance on shallow wells, inclusion of subsistence foods in the diet, use of river water in traditional ways, leasing of lands and other local practices place residents at an increased risk of exposure to environmental contaminants and pathogens via water sources, including through ingestion of local fish; and (b) following Community Based Participatory Research principles in conducting risk assessment is an effective way to reduce health disparities in underrepresented communities.
- This project is a partnership among Little Big Horn College, the Crow Tribe, the Indian Health Service Hospital, the Apsalooke Water and Wastewater Authority, the Tribal Elders Committee, Montana State University - Bozeman and the University of New England.
- Additional collaborators include the State of Montana offices of the Environmental Protection Agency (EPA), the US Geological Survey (USGS) and the US Fish and Wildlife Service, as well as the non-profit Messengers for Health.

Methods :

- Bacterial and comprehensive chemical analyses of domestic, cultural and recreational water sources
- Mercury analyses of local fish
- Family surveys to assess routes of exposure and to identify risk factors for well contamination
- interviews with key informants

The resulting data will be combined with historical data from LBHC, the Crow Tribe, the Indian Health Service Hospital, the USGS and the EPA to provide the basis for the risk assessment.



Highlights:

- About 40% of wells have tested positive for coliforms
- 55% of wells tested present a microbial, mineral or chemical health threat
- Half of the springs and cisterns are positive for coliform
- Data/ information was disseminated to homeowners, Tribal administration, Tribal legislature, Tribal Elders Committee and the Water and Wastewater Authority, which obtained funding to upgrade water and wastewater treatment, and provided centralized access to municipal water



Managing Obesity via Telehealth: Expanding Services to Rural and American Indian Montanans

Background: Rural U.S. counties have higher rates of obesity, sedentary lifestyle, and associated chronic disease than urban centers. Patients, families, and health care providers must access and negotiate health care services with limited resources and across significant geographical distance. Health services, such as intensive lifestyle intervention programs, are often urban-centric and do not meet the needs of rural and AI populations.

Hypothesis: Increasing access to services, such as the Lifestyle Balance Telehealth Program (LBTP), to Montanans living in rural, frontier and AI communities will prove to be an effective method for narrowing the health disparities in obesity, diabetes, and associated chronic disease.

Specific Aims:

- Increase access for residents living in rural Montana to the 10-month LBTP (16 weekly intensive lifestyle intervention and 6 monthly maintenance sessions) through the use of telehealth.
- Evaluate whether, as compared to a face-to-face urban control group and nationally reported outcomes, LBTP improves the primary outcomes - percent change in body weight and proportion of participants meeting goal of 7% body weight loss - and secondary outcomes - lifestyle (dietary intake of fat, minutes of physical activity) and quality of life (psychosocial measure).
- Increase access to metabolic surgery evaluations, education, and post-acute care management through the use of telehealth for patients living in rural and frontier Montana.
- Evaluate whether nationally recommended metabolic surgery supportive services can be effectively delivered via telehealth.
- Increase telehealth-enabled distance learning for providers and their staff in obesity management.

Accomplishments:

- Successfully enrolled 91 individuals from rural communities into a 12-week modified LBTP, based on the nationally established Diabetes Prevention program (DPP)
- Preliminary analysis shows no difference $n=$ between the rural and urban groups in the primary outcome of meeting the DPP goal of 7% body weight loss ($p=0.19$).

Montana INBRE_ Harmsen, Allen



The Energy-Water-Health Nexus: Assessing the Environmental Impacts and Public Health Implications of Oil and Gas Production in Richland County, Montana

Project Leader: Susan Gilbertz, Montana State University-Billings

Background

- Resource extraction industries have a long history in Montana, beginning with gold and silver mining in the 1800s, and currently, oil and natural gas production.
- Contamination of groundwater have been raised due to release of highly toxic agents that are harmful to the environment.
- Link between industrial activity and water contamination were documented.

Aims

The project aims to conduct a preliminary investigation of existing and potential health impacts that are directly and indirectly implicated in the activities associated with oil and gas production in Richland County, Montana

Scientific advances

- Clarification of methods for approaching private well owners.
- Clarification of methods for reporting back to private well owners.
- Clarification of methods for reconciliation of perceptions of problems vs reality of problems in drinking water.

Public Health Impact Statement

The people of the Bakken-area communities, constituency groups and state officials will have data to examine as opposed to “suspicions”. Policy development can proceed in light of the information gathered.

Montana INBRE_ Harmsen, Allen



Oklahoma Shared Clinical and Translational Resources (OSCTR)

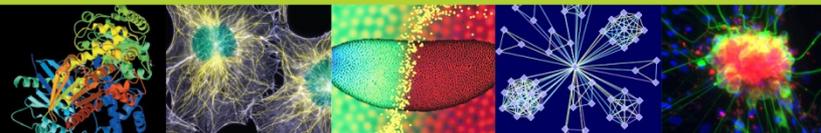
- The Oklahoma Shared Clinical and Translational Resources (OSCTR) forges partnerships between ten Oklahoma institutions, American Indian tribes throughout Oklahoma and Kansas, three tribal nations, an Urban Indian Clinic and Oklahoma communities, as well as with institutions in Arkansas and South Carolina to facilitate clinical and translational research (CTR) in IDeA states.
- Serves as a catalyst for clinical research which improves health for underserved and underrepresented populations living in rural areas, to improve patient outcomes of these individuals, and to provide these resources to launch new independent IDeA investigator careers.



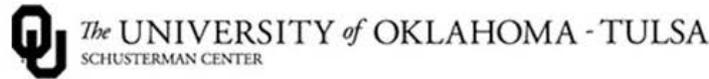
Sample Projects

- *Robin Kinnard, PhD*, Epidemiologist, OCAITHB. Investigating Barriers to Colorectal Cancer Screening Among Choctaw Nation Elders
- *Ashley Weedn, MD, MPH*. Assistant Professor, Department of Pediatrics, OUHSC. Obesity in Early Childhood Among Tribal Oklahoma Children. Collaboration with the Cherokee and Chickasaw Nations.

Oklahoma IDeA-CTR James, Judith



OSCTR Member Institutions



The Men and Women of the IDeA Program

