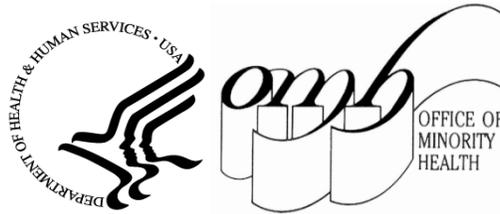


*DEPARTMENT OF HEALTH AND HUMAN SERVICES  
OFFICE OF MINORITY HEALTH*

**American Indian/Alaska Native  
Health Research Advisory Council  
(HRAC)**

**Third Annual Health Research Report  
Fiscal Year 2011**

**American Indian/Alaska Native  
Health Research Advisory Council Report Fiscal Year 2011**



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## ***INTRODUCTION***

The *Third Annual Health Research Report* represents a compilation of findings related to important health research topics in American Indian and Alaska Native communities. The American Indian and Alaska Native Health Research Advisory Council (HRAC) produced this report as a resource to share research findings, topics, and available federal programs with tribes. It includes submissions from the Administration for Children and Families (ACF), the Agency for Healthcare Research and Quality (AHRQ), the Centers for Disease Control and Prevention (CDC), and the National Institutes of Health (NIH).

### ***HRAC Background***

The HRAC was established to provide HHS a vehicle for consulting with tribes about health research priorities and needs in AI/AN communities, and collaborative approaches in addressing these issues and needs. The HRAC is comprised of elected tribal officials, one delegate and one alternate from each of the 12 Indian Health Service (IHS) areas, and four National At-Large Members. Federal partners participate in Council activities by providing input and support, and linkages with HHS' operating and staff divisions. These federal partners include: Administration for Children and Families, Agency for Healthcare Research and Quality, Office of the Assistant Secretary for Planning and Evaluation (ASPE), Centers for Disease Control and Prevention, Health Resources and Services Administration (HRSA), Intergovernmental and External Affairs (IEA), Indian Health Service (IHS), the National Institutes of Health, the Office of Minority Health (OMH) and Substance Abuse and Mental Health Services Administration (SAMHSA).

#### **The HRAC serves three primary functions:**

- Obtaining input from tribal leaders on health research priorities and needs for their communities.
- Providing a forum through which HHS operating and staff divisions can better communicate and coordinate AI/AN health research activities.
- Providing a conduit for disseminating information to tribes about research findings from studies focusing on the health of AI/AN populations.

## ***ADMINISTRATION FOR CHILDREN AND FAMILIES***

The Office of Planning, Research and Evaluation (OPRE) within the Administration for Children and Families serves as principal advisor to the Assistant Secretary for Children and Families on increasing the effectiveness and efficiency of programs designed to improve the economic and social well-being of children and families. In collaboration with ACF program offices and others, OPRE is responsible for ACF performance management; for conducting research and policy analyses; and for developing and overseeing research and evaluation projects to assess program performance and inform policy and practice. The following projects are among those that OPRE oversees related to Native Americans. Each project is guided by consultation with American Indian and Alaska Native experts and collaboration with the tribes and tribal organizations affected.

### **Evaluation of Tribal Health Professions Opportunities Grants (ETHPOG)**

*Project Type:* Research

*Population:* American Indian and Alaska Native

*Description:* Authorized by the Affordable Care Act, the Health Profession Opportunity Grants (HPOG) program provides education and training to TANF recipients and other low-income individuals for occupations in the health care field that pay well and are expected to either experience labor shortages or be in high demand. In 2010, the Office of Family Assistance (OFA) awarded grants to 32 entities located across 23 states. Five of the 32 grant awards were made to tribal applicants (four tribal colleges and one tribal organization). These demonstration projects are intended to address two pervasive and growing problems: the increasing shortfall in supply of healthcare professionals in the face of expanding demand; and the increasing requirement for a post-secondary education to secure a job with a living wage for families. Grant funds may be used for training and education as well as supportive services such as case management, child care, and transportation.

The Office of Planning, Research and Evaluation is utilizing a multi-pronged evaluation strategy to assess the success of the HPOG demonstration projects. One of the components of this strategy is the evaluation of tribal HPOG. The goal of this evaluation is to provide documentation and lessons about diverse programmatic approaches to health professions training serving the tribal population. The five year study began in October 2010 and is being conducted under contract with NORC at the University of Chicago, in partnership with the National Indian Health Board and Red Star Innovations. Interview and program operations data will be collected to provide an in-depth, systematic analysis of program implementation, operations, and outputs and outcomes in all tribal sites. Additionally, data will be compared within and across sites to examine correlations and patterns and generate hypotheses about the effectiveness of different program approaches for tribal populations.

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*Forthcoming Publications:* Meit, Michael. (2011). An Introduction to the Tribal Health Professions Opportunity Grants and Evaluation. OPRE Report #XX, Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services: NORC at the University of Chicago, Red Star Innovations, National Indian Health Board.

Interim Report - Winter 2013

Final Report - Summer 2015

### **Tribal Home Visiting Evaluation Institute (TEI)**

*Project Type:* Evaluation Technical Assistance

*Population:* American Indian and Alaska Native

*Description:* The Tribal Home Visiting Evaluation Institute will provide technical assistance, leadership, and support to promote excellence in community-based research and evaluation of Maternal, Infant, and Early Childhood Home Visiting (MIECHV) initiatives under the Affordable Care Act (ACA) that serve American Indian and Alaska Native children and families. Examples of focal areas of technical assistance to grantees include developing and implementing a rigorous evaluation of home visiting; selecting, adapting, and developing culturally appropriate data collection tools and measures; tracking and measuring benchmarks (i.e., measures related to child health, maternal health, child development and school readiness, family economic self-sufficiency, positive parenting practices, reductions in child maltreatment, reductions in juvenile delinquency); developing and modifying existing data systems; continuous quality improvement; data protection and privacy; and ethical dissemination and translation of evaluation findings derived from research with AI/AN to external audiences. The staffing of the TEI reflects an understanding and sensitivity to issues of conducting an evaluation in a tribal setting, and includes researchers who have a history of working with AI/AN communities on the evaluation of home visiting. A four-year contract award was made to MDRC, James Bell Associates, Johns Hopkins University and University Colorado at Denver.

### **Tribal Early Childhood Research Center (TRC)**

*Project Type:* Research

*Population:* American Indian and Alaska Native

*Description:* The Tribal Early Childhood Research Center (TRC) under the Affordable Care Act's (ACA) Maternal, Infant and Early Childhood Home Visiting Program and the Head Start Act's Head Start and Early Head Start Programs seeks to address gaps in research on child outcomes for young American Indian/Alaska Native children. Goals of TRC are as follows:

1. Engage in a participatory-process of consultation with key stakeholders and collaboration with tribal Head Start/Early Head Start (HS/EHS) and Maternal, Infant

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- and Early Childhood Home Visiting (MIECHV) programs to foster a community of learning
2. Support and conduct research and measurement development
  3. Enhance program evaluation and research-to-practice activities
  4. Disseminate the findings of the proposed center broadly
  5. Train the next generation of researchers to work effectively with HS/EHS, MIECHV and other early childhood programs in AI/AN communities

The TRC's plans and activities will be continually informed and refined with the feedback and contributions of researchers, tribal community leaders, and federal staff who have been involved in conducting research and evaluation on maternal, infant, and early childhood programs in tribal communities. The grant award was made to the University of Colorado Denver. The project builds upon existing partnerships between the University of Colorado Anschutz Medical Campus Centers for American Indian and Alaska Native Health, tribal communities, and researchers nationwide. The award period is from September 2011 to September 2016.

### ***Agency for Healthcare Research and Quality***

The Agency for Healthcare Research and Quality's mission is to improve the quality, safety, efficiency, and effectiveness of health care for all Americans. AHRQ supports research that helps people make more informed decisions and improves the quality of health care services.

#### **CURRENT PROJECTS**

#### **Study seeks strategies to improve performance based on priority issues**

*Description:* In addition to supporting the development of a sustainable research infrastructure for the Montana/Wyoming Tribal Leaders Council, Black Hill State University, and the Black Hills Center for American Indian Health, this project funded a study aimed at designing, implementing, and evaluating the effectiveness of a structured process in which tribal members and IHS providers jointly developed strategies to improve performance based on priority issues identified through a consumer survey (developed by AHRQ). Investigators developed a targeted research agenda that addressed tribally identified priority issues, such as hepatitis C, West Nile virus, and methamphetamine use. In addition, three other research studies were planned: evaluation of interventions to promote healthy weight among women, examination of factors that contribute to breast and cervical cancer outcomes, and design and implementation of a "healthy reservations" model program for system wide health improvement on reservations.

(Principal Investigator: Gordon Belcourt, Montana/Wyoming Tribal Leaders Council; Grant HS14034).

**Project seeks ways to improve CAHPS® and enhance its impact**

*Description:* The Quality Improvement Project undertaken by Yale University is being conducted with the Eastern Shoshone and Northern Arapaho Tribes of the Wind River Reservation in Wyoming and with the Fort Peck Indian Reservation (Assiniboine and Sioux Tribes) in Montana. During Fiscal Year 2011, they conducted and analyzed the tailored American Indian CAHPS survey at each reservation, and presented the findings to the Tribal-Indian Health Service (IHS) Working Group at each site. The Wind River Tribal-IHS Working Group identified Customer Service as the specific QI area that they would pursue; they developed a work plan for implementing a QI project with staff. This work plan has included bringing in speakers on customer service, regular meetings to discuss customer service improvement strategies with staff members, and holding a monthly competition between the two clinic sites on the reservation to achieve positive and measureable improvement in customer service, using a short satisfaction survey. Results for the first three months have been positive with both clinics producing higher scores on the short survey each month through August. The Fort Peck Reservation site has determined that it is over-committed to other activities and chose not to implement a new QI strategy, but is continuing to participate as a control site in the project and will cooperate in the final year follow-up CAHPS survey (FY12). They have conducted site visits and follow-up telephone interviews with key staff at each Reservation to document their ongoing quality improvement activities (general and specific to this project), organizational changes, and other factors that may be expected to affect patient satisfaction and ratings of health care. During the final year of the project (FY12), monitoring and documentation of the QI interventions will continue, another round of site visits will be conducted, and the follow-up CAHPS surveys will be conducted at each site. Results of the project will be presented to each Tribal-IHS Working Group during the final month of the study.

(Principal Investigator: Paul D. Cleary, Yale University; Grant HS16978, 9/01/07-8/31/12).

**Project to improve race and health status data for Pacific Northwest States**

*Description:* The Improving Data and Enhancing Access-Northwest Project seeks to more accurately characterize health status and clinical outcomes data for Northwest tribal people, while working to minimize and eventually eliminate racial misclassification errors in State surveillance data systems. To identify and correct racial misclassification, the project will conduct record linkages with an array of health-related data systems in a three-State region. Ultimately, it will disseminate results and develop concrete methods by which other states and Tribal Epidemiology Centers may implement similar programs. AHRQ is providing support for this project through funding received from the American Recovery and Reinvestment Act of 2009.

(Principal Investigator: Victoria Warren- Mears, Northwest Portland Area Indian Health Board; Grant HS19972, 9/30/10-9/29/13).

**Project to improve the quality of race and ethnicity data in hospital discharge and emergency Department databases in New Mexico**

*Description:* New Mexico's improving the Quality of Race and Ethnicity Data Project will contribute to reducing racial and ethnic health and health care disparities by improving the reliability of race, ethnicity, and tribal affiliation hospital data in the State. Guided by a State advisory committee, between 5 and 10 pilot hospitals will field test training materials that will be developed for the project. These will include hospital procedure, data collection, patient education, and train-the-trainer materials. Hospital discharge records will be linked with birth certificate records and IHS records to track improvements. New Mexico expects to establish a model for the collection, reporting, and appropriate dissemination of tribal identifier data which will be informally disseminated to other states and through a published manuscript. AHRQ is providing support for this project through funding from the American Recovery and Reinvestment Act of 2009.

(Principal Investigator: Michael Landen, New Mexico State Department of Health; Grant HS20033, 9/30/10-9/29/13).

**Medical home model for Alaska Natives to be assessed for impact on patient care delivery**

*Description:* The Southcentral Foundation (SCF), a tribally-owned organization, implemented a patient-centered medical home (PCMH) in 1999 and 2000 in Anchorage, Alaska. The SCF PCMH has three key characteristics: patient selected family match to a primary care team, patient-driven care, and advanced access. In this project, the University of Alaska and the SCF are partnering to determine the impact of the PCMH transformation on the characteristics and quality of patient care delivery, and to assess changes in healthcare delivery, such as quality and safety efforts, efforts to bring evidence to the point of care, use of information systems, and costs. This PCMH model could have national implications for improving the health of the AI/AN population and may also be relevant to other practices serving diverse populations with multiple health disparities. The project is in its final stages.

(Principal Investigator: David L. Driscoll, University of Alaska at Anchorage; Grant HS19154, 7/01/10-6/30/12).

**Electronic clinical data to assist in assessing comparative effectiveness of quality improvement efforts**

*Description:* Over the past decade, the IHS has developed a national information technology infrastructure that allows for the routine, reproducible measurement of ambulatory quality of care across a spectrum of conditions for AI/AN communities. This infrastructure represents a model for evaluating the use of a nationally integrated health information system to conduct comparative effectiveness research (CER) and ultimately identify the most capable quality improvement activities. This project will use electronic clinical data from the IHS national health information systems to create a longitudinal database linking quality of care measures for diabetes, cardiovascular disease, and cancer screening over a 9-year period. A

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second objective will be to conduct two comparative analyses to determine the effectiveness of delivery system interventions, such as the use of an advanced electronic health record and a chronic care model (Improving Patient Care) to assess health care quality and outcomes for diabetes, cardiovascular care, and cancer screening. This project is currently in month 14 of 24 (as of October 2011). The development of a longitudinal data infrastructure (LDI) is in process. One of the CER projects plans to test the LDI by looking at the association between EHR utilization and quality of care (QOC) by physicians by assessing effectiveness of organizational interventions on quality of care using breast cancer, diabetes, and cardiovascular disease measures. The second project plans to define the best method of linking patients to individual primary care providers within the IHS. The IHS has received a review of IHS data systems, a beta version of the CER dataset, and two social determinants of health review papers (adverse childhood outcomes & distance to care). The contractor is working on a final CER study plan and future work involves a Tribal dissemination plan, interim report, final study report, two external manuscripts and a final report.

AHRQ is providing staff support to IHS in this project. Funding was received from the American Recovery and Reinvestment Act of 2009 (Office of the Secretary funding).

**Project studies comparative effectiveness of disease management by IHS advanced practice pharmacists**

*Description:* The purpose of this project is to support the development of data infrastructure and enhance data collection methodology with the Indian Health Service. Using funds provided under the American Recovery & Reinvestment Act of 2009 (ARRA), the Contractor will link service data, pharmacy cost data, and health status measures and assess utilization and spending for a population subset in 12 IHS regions. The Contractor will then conduct a targeted comparative effectiveness research (CER) project focusing on health delivery system strategies, such as advanced pharmacy practice, to reduce cardiovascular disease (CVD) risk among American Indian/Alaska Native adults.

Update (October 2011): This project is currently in month 13 of 24. The development of a dataset to test the use of CER studies is ongoing. The subcontractor has been working with the IHS and tribal organizations to obtain institutional review board (IRB) approvals and data use agreements. The first of three site visits to the 14 selected sites are being conducted. The CER study will use observational research methods to provide critical information on health status, utilization, and treatment costs. The project findings will assist IHS in prioritizing and evaluating chronic disease management strategies. In addition, this project will offer CER methods training modules/webinars to identify lessons learned concerning dataset limitations and methods for controlling bias for future CER studies.

AHRQ is providing staff support to IHS in this project; funding is from the American Recovery and Reinvestment Act of 2009 (Office of the Secretary funding).

### **Project seeks to improve care for minority stroke survivors**

*Description:* This mentored clinical scientist development award will assist a minority researcher in helping to achieve the aims of the Stroke Telemedicine Access Recovery (STAR) Project. STAR's long-term goal is to implement an innovative, multi-disciplinary, specialty care intervention for stroke survivors that targets early introduction to rehabilitation and assists with transitions between levels of care. The project is to take place at the Southeastern Regional Medical Center, a rural hospital serving a Lumbee Indian, African American, and white population. The first phase of the project is to observe the current rehabilitation process to be followed by implementing a multi-disciplinary consultation service using telemedicine video-conference technology. The researcher will provide pilot data to improve inpatient management, discharge disposition, and recovery phase care.

(Principal Investigator: Patricia C. Gregory, University of North Carolina at Chapel Hill; Grant HS17956, 7/01/09-6/30/14).

### **Improving the Delivery of Self Management Support Services to American Indian/Alaska Native (AI/AN) People**

*Description:* The purpose of this Intra-Agency Agreement is to transfer funds from AHRQ to IHS for the purpose of supporting the improvement of the delivery of prevention and care management services through the IHS Improving Patient Care Program (IPC). This IAA makes use of the IPC's key strategy, the "Improving Patient Care Collaborative." The IPC collaborative supports primary care practices in improving chronic illness and preventive care for Native Americans. The project builds on a previous IAA that provided clinical staff training and skill-building in self-management support for 38 clinical sites and teams participating in the IPC learning collaborative. Self-management support is a key component of patient-centered health care and the Chronic Care Model. Work improving electronic health records is also part of this project.

### **AHRQ includes American Indian and Alaska Native data in its ongoing Medical Expenditure Panel Survey (MEPS) and in the annual National Healthcare Quality Report (NHQR) and National Healthcare Disparities Report (NHDR)**

*Description:* AHRQ's Medical Expenditure Panel Survey (MEPS; see [www.ahrq.gov/data/mepsix.htm](http://www.ahrq.gov/data/mepsix.htm)) is a set of large-scale surveys of families and individuals, their medical providers, and employers across the United States. MEPS data cover health care use and spending, insurance coverage, and accessibility of care. AIs/ANs are one of the 7 "Race/Ethnicity" categories that are tracked in MEPS. Information specific to AI/AN families and individuals can, therefore, be obtained using this survey's databases. MEPS is an ongoing AHRQ program.

Wherever possible in the NHQR and NHDR, AHRQ reports on AIs/ANs using national data. In addition, AHRQ works with IHS to provide estimates for AIs/ANs receiving care

from IHS and tribal facilities, which are often not represented well in national data collections.

AHRQ provided a small amount of funds to help support the annual National AI/AN Health Research conference. This past year's conference was held in Niagara Falls, NY.

## ARTICLES

### **A randomized controlled calendar mail-out to increase cancer screening among urban American Indian and Alaska Native patients**

*Description:* “This study seeks to ascertain whether a culturally tailored art calendar could improve participation in cancer screening activities. We conducted a randomized, controlled calendar mail-out in which a Native art calendar was sent by first class mail to 5,633 patients seen at an urban American Indian clinic during the prior 2 years. Using random assignment, half of the patients were mailed a "message" calendar with screening information and reminders on breast, colorectal, lung, and prostate cancer; the other half received a calendar without messages. The receipt of cancer screening services was ascertained through chart abstraction in the following 15 months. In total, 5,363 observations (health messages n = 2,695; no messages n = 2,668) were analyzed. The calendar with health messages did not result in increased receipt of any cancer-related prevention outcome compared to the calendar without health messages. We solicited clinic input to create a culturally appropriate visual intervention to increase cancer screening in a vulnerable, underserved urban population. Our results suggest that printed materials with health messages are likely too weak an intervention to produce the desired behavioral outcomes in cancer screening.”

*Publications:* Doorenbos, A. Z., C. Jacobsen, et al. J Cancer Educ 2011 Sep; 26(3):549-554. Grant Number: P01 HS10854.

### **Performance on rheumatoid arthritis quality indicators in an Alaska Native healthcare system**

*Description:* “Rheumatoid arthritis (RA) is highly prevalent in some Alaska Native and American Indian populations. Quality indicators for RA have been proposed, but these have not been widely implemented or used to assess RA care in Alaska Native or American Indian populations. METHODS: Medical records were included if they met the following criteria: RA diagnosed before October 2000 fulfilling American College of Rheumatology classification criteria; all care for RA at the Alaska Native Medical Center. Records were reviewed for a 5-year period to determine compliance with eight quality indicators defined by the Arthritis Foundation Quality Indicator Program. Multivariate logistic regression was performed to analyze associations with quality of care. RESULTS: There were 106 individuals included in the study. The highest-scoring measures were folic acid prescription if on methotrexate (93.3%) and disease-modifying antirheumatic drug prescription (90.6%). The lowest scoring measure was radiographs of both hands and feet (16.0%). In multivariate

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analysis, the factor most strongly associated with disease-modifying antirheumatic drug prescriptions, annual exam for RA and hand radiographs was at least one visit with a rheumatologist. CONCLUSIONS: Quality of care for RA varies by measure and is better for patients who see a rheumatologist. These data provide an initial evaluation of RA quality of care in a unique minority population with an integrated healthcare system.”

*Publications:* Ferucci, E. D., K. J. Donnithorne, et al. Qual Saf Health Care 2010 Oct; 19(5):387-391. Grant Number: R03 HS0156.

**Perceived cancer risk among American Indians: implications for intervention research**

*Description:* “Perceived risk of disease plays a key role in health behaviors, making it an important issue for cancer-prevention research. We investigate associations between perceived cancer risk and selected cancer risk factors in a population-based sample of American Indians. STUDY DESIGN AND POPULATION: Data for this cross-sectional study come from a random sample of 182 American Indian adults, aged > or = 40 years, residing on the Hopi Reservation in northeastern Arizona. OUTCOME MEASURES: Perception of cancer risk was ascertained with the 5-point Likert scale question, "How likely do you think it is that you will develop cancer in the future?" dichotomized into low perceived risk and high perceived risk. RESULTS: Participants reporting a family member with cancer were more likely, by greater than five times, to report the perception that they would get cancer (OR = 5.3; 95% CI: 2.3, 12.3). After controlling for age and family history of cancer, knowledge of cancer risk factors and attitude about cancer prevention were not significantly associated with risk perception. CONCLUSIONS: Perceived cancer risk was significantly associated with self-reported family history of cancer, supporting the importance of personal knowledge of cancer among American Indians. Further research is needed to obtain a more complete picture of the factors associated with perceptions of cancer risk among American Indians in order to develop effective interventions.”

*Publications:* Gonzales, A. A., T. G. Ton, et al. Ethn Dis 2010 Autumn 20(4):458-462. Grant Number: P01 HS10854.

**American Indian/Alaska Native uninsurance disparities: a comparison of 3 surveys**

*Description:* “We examined whether 3 nationally representative data sources produce consistent estimates of disparities and rates of uninsurance among the American Indian/Alaska Native population and to demonstrate how choice of data source impacts study conclusions. METHODS: We estimated all-year and point-in-time uninsurance rates for AI/ANs and non-Hispanic Whites younger than 65 years using 3 surveys: Current Population Survey (CPS), National Health Interview Survey (NHIS), and Medical Expenditure Panel Survey (MEPS). RESULTS: Sociodemographic differences across surveys suggest that national samples produce differing estimates of the AI/AN population. AI/AN all-year uninsurance rates varied across surveys (3%-23% for children and 18%-35% for adults). Measures of disparity also differed by survey. For all-year uninsurance, the unadjusted rate for AI/AN children was 2.9 times higher than the rate for White children with the CPS, but there were no significant disparities with the NHIS or MEPS. Compared

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with White adults, AI/AN adults had unadjusted rate ratios of 2.5 with the CPS and 2.2 with the NHIS or MEPS. CONCLUSIONS: Different data sources produce substantially different estimates for the same population. Consequently, conclusions about health care disparities may be influenced by the data source used.”

*Publications:* Johnson, P. J., L. A. Blewett, et al. Am J Public Health 2010; 100(10):1972-1979. Contract Number: 290-00-0017/PHS HHS/United States.

**Barriers and facilitators to walking and physical activity among American Indian elders**

*Description:* “Physical inactivity is common among older American Indians. Several barriers impede the establishment and maintenance of routine exercise. We examined personal and built-environment barriers and facilitators to walking and physical activity and their relationship with health-related quality of life in American Indian elders. METHODS: We used descriptive statistics to report barriers and facilitators to walking and physical activity among a sample of 75 American Indians aged 50 to 74 years. Pearson correlation coefficients were used to examine the relationship between health-related quality of life and barriers to walking and physical activity after adjusting for caloric expenditure and total frequency of all exercise activities. RESULTS: Lack of willpower was the most commonly reported barrier. Elders were more likely to report personal as opposed to built-environment reasons for physical inactivity. Better health and being closer to interesting places were common walking facilitators. Health-related quality of life was inversely related to physical activity barriers, and poor mental health quality of life was more strongly associated with total barriers than poor physical health. CONCLUSION: We identified a variety of barriers and facilitators that may influence walking and physical activity among American Indian elders. More research is needed to determine if interventions to reduce barriers and promote facilitators can lead to objective, functional health outcomes.”

*Publications:* Sawchuk, C. N., J. E. Russo, et al. Prev Chronic Dis 2011 May; 8(3):A63. Grant Number: 5 P01 HS10854-02.

**Does pedometer goal setting improve physical activity among Native elders? Results from a randomized pilot study**

*Description:* “We examined if step-count goal setting resulted in increases in physical activity and walking compared to only monitoring step counts with pedometers among American Indian/Alaska Native elders. Outcomes included step counts, self-reported physical activity and well-being, and performance on the 6-minute walk test. Although no significant between-group differences were found, within-group analyses indicated that elders significantly improved on the majority of step count, physical activity, health-related quality of life, and 6-minute walk outcomes.”

*Publications:* Sawchuk, C. N., J. E. Russo, et al. Am Indian Alsk Native Ment Health Res 2011; 18(1):23-41. Grant Number: P01 HS1085402.

## ***CENTERS FOR DISEASE CONTROL AND PREVENTION***

### **A Prospective Birth Cohort Study Involving Environmental Uranium Exposure in the Navajo Nation**

*Project Type:* Research

*Population:* American Indian and Alaskan Native

*Description:* Extensive uranium mining and milling operations have occurred on the Navajo Nation during the last half century. Due to these anthropogenic activities, there remains a level of potential uranium exposure to the Navajo people from various sources including abandoned uranium mills/mines, contaminated drinking water, soil, and homes built with mining waste. While there have been many studies of occupational exposure to uranium and renal effects, there have been very limited studies on other adverse health effects. There is also limited toxicological and epidemiological data that indicates that uranium may pose a risk to the developing fetus. The purpose of this study is to quantify fetal risk from uranium by recruiting Navajo mothers, assessing their uranium exposure at key developmental milestones, and then following the children post-birth to evaluate any associations with birth defects in developmental delays. The study also has applied public health goals to provide educational outreach to increase prenatal care utilization, earlier assessment and referral for developmental delays, and mitigation of uranium exposure among Navajo mothers. In 2011, the study protocol was developed and received clearance from the Institutional Review Boards from all involved institutions. We have initiated clearance with the Office of Management and Budget and anticipate beginning study participant recruitment in 2012.

### **Seeds of Hope**

*Project Type:* Research

*Population:* American Indian and Alaskan Native

*Description:* Seeds of HOPE (SOH) focuses on dissemination and implementation of HOPE Works (our previous project) via community-based organizations. SOH is adapted based on findings and lessons learned from HOPE Works project. Effectiveness of the disseminated program will be evaluated using a randomized experimental design. One study arm will implement the SOH model that includes HOPE Circles, tailored newsletters, and activities to support education and empowerment including financial literacy. The other arm, Seeds of Health, will receive education on other health topics via email newsletters and group learning sessions for twelve months. Materials and methods will be adapted and targeted for dissemination via community organization partners including churches, tribal centers, and other community groups.

### **Innovative Approaches to Preventing Teen Pregnancy among Underserved Populations**

*Project Type:* Research

*Population:* American Indian and Alaskan Native

*Description:* The goal of this 4 year Special Interest Project (SIP) is to adapt and evaluate the effectiveness of an Internet-based HIV/STI, and pregnancy prevention curriculum for American Indian/Alaska Native middle school-aged youth (12-14 years). This curriculum will be adapted from a successful, Internet-accessible, prevention program, It's Your Game...Keep it Real, (IYG). To capture the heterogeneous experience of AI/AN youth the AI/AN-IYG Internet-based program will be adapted and evaluated in 3 large, geographically dispersed AI/AN communities in Alaska, the Pacific Northwest (Oregon, Washington State, Idaho), and Arizona Plains.

### **Outcomes of Screening AI/AN Women of Reproductive Age for Chronic Conditions**

*Project Type:* Research

*Population:* American Indian and Alaskan Native

*Description:* This project tests the efficacy of a culturally tailored Contingency Management intervention to promote cigarette abstinence and weight loss among American Indian and Alaska Native women of reproductive age. Submitted UW IRB application, received project approval from both of the clinical project sites; developed research tools; installing data mining tool at one clinical site; establishing subcontracts.

### **“Walking Together: Making a Path Toward Healing”**

*Project Type:* Research

*Population:* American Indian and Alaskan Native

*Description:* The purpose of this Intra-Agency Agreement (IAA) is to support the Phoenix Indian Medical Center (PIMC) Oncology Program to identify and describe the impediments to care physically, psychologically and spiritually faced by young AI/AN women diagnosed with breast cancer under the age of 45 from their own viewpoint. Through focus groups, the patients understanding of the barriers they faced in getting care for their breast cancer as well as their viewpoints regarding services available or unavailable to them will be studied. The information gathered will be used to develop recommendations for targeted interventions that will address common concerns in these patients breast cancer journey.

### **Improving Stability of Commercial Fishing Vessels**

*Project Type:* Research

*Population:* American Indian and Alaskan Native

*Description:* The majority (55%) of fatalities among fishermen are due to the loss of a fishing vessel. This project seeks to decrease the number of fatalities due to vessels sinking

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by 50% by 2018 through targeted intervention research in three areas: epidemiological assessment, educational intervention, and engineering solutions. This study will decrease the number of fatalities by conducting epidemiologic analysis of fatality data, communicating the results to generate data, drive policy changes, and improve the effectiveness of vessel stability training among commercial fishermen. Concurrently the data will be used to target factors that contribute to vessel instability for engineering solutions. The issue of vessel stability is listed by NIOSH, the US Coast Guard, and the National Transportation Safety Board as a priority to improve safety in the fishing industry.

### **Assessing the Reproductive Health of Female Workers**

*Project Type:* Research

*Population:* American Indian and Alaskan Native

*Description:* Infertility affects more than 2 million couples. Billions are spent in the U.S. annually on health care related to infertility; costs of reproductive dysfunction and associated health impairment permeate into the workplace. Three-quarters of employed women are of reproductive age; more than half of U.S. children are born to working mothers; 84% of working women are in jobs with likely exposure to potential hazards. Female reproductive dysfunction can disrupt sex hormone secretion thereby reducing health by increasing the rate and severity of diseases including cancers, osteoporosis, cardiovascular disease, psychosomatic disorders, and tissue atrophy. Reproductive dysfunction is a silent malady not readily detected or discussed by workers. The project will address this problem by developing methods to assess women's reproductive health, incorporating these methods into studies to assess the reproductive toxicity of occupational exposures on women's reproductive health, working with partners to provide intervention, when applicable, to minimize exposures and impacts, and working with colleagues worldwide to reduce the impact of female reproductive toxicants and hazards in the workplace. The project addresses needs of underserved populations: women, Native Americans, and other minorities who work in less desirable jobs.

### **Improving the Health and Safety of Minority Workers**

*Project Type:* Research

*Population:* American Indian and Alaskan Native

*Description:* Although the psychosocial work environment affects physical and mental health, little is known about how this relationship contributes to racial/ethnic health disparities. This project will use newly developed measures and methods to detect workplace risk factors salient to minority health. It will also evaluate the success of current workplace occupational safety and health programs and practices in addressing minority health needs. Data will be used to increase knowledge about the workplace risk factors to minority health and to generate information and resources for increasing the responsiveness of occupational safety and health programs and practices to the needs of minority workers. Resources will be disseminated to:

1. Community-based organizations

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2. Work organizations that are racially and ethnically diverse. The impact of these resources will be evaluated. Native American Educational Services, Inc. is an external collaborator

**Minority Health and Work Organization: Research to Practice**

*Project Type:* Research

*Population:* American Indian and Alaskan Native

*Description:* Although the psychosocial work environment affects physical and mental health, little is known about how this relationship contributes to racial/ethnic health disparities. A contributing factor to this state of affairs is the lack of appropriate measures to comprehensively investigate the contribution of the psychosocial work environment to problems in minority health. This project will develop and assess new methods to better enable the occupational safety and health research community to conduct targeted occupational studies on minority health or in studies of racially and ethnically diverse workers. This project will generate a survey instrument and a qualitative interview to be employed in worker studies, conference presentations, and publications. The survey instrument and qualitative interview are expected to be used by occupational safety and health and other public health researchers in various health and intervention studies. Partners including Native American Educational Services, Inc. have collaborated to develop the survey and interview and will collaborate with NIOSH to disseminate resulting information.

**Reducing Fatalities Due to Falls Overboard**

*Project Type:* Research

*Population:* American Indian and Alaskan Native

*Description:* The objective of this fishing safety project was to reduce injuries and fatalities associated with falling overboard during US commercial fishing operations by:

1. Understanding the root causes of falls overboard incidents in the fishing industry
2. Applying this knowledge to design and evaluate interventions that improve rescue or eliminate on-board hazards that contribute to falling overboard
3. Communicating results to regulatory agencies, safety organizations, and industry

**Pregnancy outcomes in Alaska Native smokeless tobacco users**

*Project Type:* Research

*Population:* American Indian and Alaskan Native

*Description:* The primary objective of this study was to explore the potential effects of maternal smokeless tobacco use on pregnancy outcomes. The secondary objectives were to explore the effects of maternal smokeless tobacco use on glucose tolerance, complications of labor and delivery, maternal hospital length of stay and readmission, fetal growth, severity of preeclampsia and on infant complications. The study was based in the Yukon

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Kuskokwim area of Alaska. Data collection is complete. In FY 2011, the two persons who led the research developed two manuscripts reporting on the study outcomes.

***NATIONAL INSTITUTES OF HEALTH***

The National Institutes of Health (NIH) is the steward of medical and behavioral research for the Nation. Its mission is the pursuit of fundamental scientific knowledge about the nature and behavior of living systems and the application of that knowledge to extend healthy life and reduce the burdens of illness and disability. The agency's mission is to:

1. Foster fundamental creative discoveries, innovative research strategies, and their applications as a basis to advance significantly the Nation's capacity to protect and improve health
2. Develop, maintain, and renew scientific human and physical resources that will ensure the Nation's capability to prevent disease
3. Expand the knowledge base in medical and associated sciences in order to enhance the Nation's economic well-being and ensure a continued high return on the public investment in research
4. Exemplify and promote the highest level of scientific integrity, public accountability, and social responsibility in the conduct of science

The prevention, diagnosis, and treatment of diseases and conditions that disproportionately affect American Indian, Alaska Native, and Native American (AI/AN/NA) communities remain a priority for NIH. The NIH will continue to promote its programs and funding opportunities to the AI/AN/NA community; bolster research activities to address the inadequate representation of this population in biomedical research; and conduct and support health promotion initiatives and the translation of research findings into programs, educational/informational tools and materials for dissemination to the AI/AN/NA community. Expanding the pool of scientists, researchers, and health professionals within the AI/AN/NA community is also essential in dealing with the many variables associated with improving the health of the community. In addition to supporting research capacity-building projects, NIH emphasizes the development of partnerships among community organizations, churches, other minority and research-intensive institutions, the private sector, and other grant-funding entities.

This report represents a compilation of important programs supported in 2011 in the areas of research, capacity-building, and health education that are relevant to AI/AN/NA communities. These programs, listed by NIH Institute, Center, and Office, aim to address disparities in health experienced by AI/AN/NA communities and other medically underserved populations. As a resource this report represents the breadth of the NIH portfolio, but it is by no means the limit of NIH activities in these important areas. NIH is a dynamic organization that constantly innovates and initiates new activities in the pursuit of the highest standards of scientific and health promotion goals.

## ***The Programs of the National Institutes of Health***

### **CLINICAL CENTER (CC) NATIONAL INSTITUTES OF HEALTH**

#### **Historical and Contemporary Factors Influencing the Lives of Reservation Based Native American Youth: Non-Lethal Suicidal Behavior**

*Project Type:* Research, Training

*Population:* Native American - Ft. Peck, Montana

*Description:* A pre-doctoral fellowship in community-based participatory research (CBPR) has been developed based on a collaborative study that has been developed between NIH, CC, Johns Hopkins University, and the Ft. Peck Tribal Council. The overall aim of this study is to further the understanding of non-lethal suicidal behavior by examining the relationships between risk and protective factors among reservation-based youth (ages 15-24 years). Participants were recruited to complete a one-time web-based risk profile survey. A total of 291 participants consented to participate. The project is currently in the data analysis phase.

*Publication/Reference:* Brockie, T., Adams, K., Goodman, D., Kellam, A., Koratich, C., Elliott, D., Kub, J., Fisher, C., Wallen, G.R. (accepted for November 2, 2011). ONE CIRCLE (Organizing Nurses to Engage Communities In Research and Collaborations Linking Evidence) to Address Youth Alcohol Use in a Reservation Community. 139<sup>th</sup> American Public Health Association Annual Conference, Washington, DC

### **JOHN E. FOGARTY INTERNATIONAL CENTER FOR ADVANCED STUDY IN HEALTH SCIENCES (FIC)**

#### **Arctic Health Research**

*Project Type:* Leadership on Arctic Research at the NIH

*Population:* Alaska Native, Native American

*Description:* The Fogarty International Center (FIC) is the designated focal point for Arctic issues at the NIH, and plays a key role in advancing bilateral and multilateral ties between and among governments, institutions, and scientists working on circumpolar issues. As such, FIC provides leadership and input to a range of groups including the Interagency Arctic Research Policy Committee (IARPC), the US Arctic Research Commission, the Polar Research Board of the National Academies of Science, the Department of State Arctic Policy Group, and the Centers for Disease Control and Prevention's Arctic Human Health Initiative.

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*Results:* Past activities included being one of the sponsors for a conference held at the University of Alaska at Anchorage. The purpose of this meeting was to develop a US Government (USG) Arctic Human Health Research Strategy that would advise the Interagency Arctic Research Policy Committee on the development of a USG Arctic Human Health Research Plan. This meeting engaged Arctic health stakeholders, including USG, scientific and tribal community leaders, and international behavioral and mental health scientists in discussions on current research knowledge and gaps, with a specific focus on improving our understanding of the risk factors and barriers to reducing suicide and other behavioral and mental health disorders among Arctic Circumpolar residents.

*Publication/Reference:* The conference proceedings have been published in the International Journal of Circumpolar Health and are available online at [http://ijch.fi/CHS/CHS\\_2010%285%29.pdf](http://ijch.fi/CHS/CHS_2010%285%29.pdf).

**NATIONAL CANCER INSTITUTE (NCI)**

The mission of the National Cancer Institute (NCI) is to conduct scientific research that will facilitate the control and prevention of cancer. Thus, the NCI will continue to conduct and support research to examine inequalities in cancer and the social, cultural, environmental, biological, and behavioral determinants of cancer, interactions among them, and mechanisms by which these factors contribute to disparities in early detection, cancer care, prevention, end-of-life, palliative, and quality-of-care. Consistent with this research agenda, NCI will continue to support initiatives to develop sustainable interventions and identify priority areas for future policy development to ameliorate cancer health disparities among various population groups, including Native Americans, American Indians, and Alaska Natives. Major areas of emphasis in research are to:

1. Conduct basic research focused on identifying and reducing cancer health disparities
2. Conduct translational research focused on transferring basic knowledge to clinical practice in order to reduce cancer health disparities
3. Conduct clinical and applied research to assess effective prevention, diagnosis, and treatment options concentrated to reduce cancer health disparities
4. Determine evidence-based best practices for personalized medicine
5. Improve understanding of causes of disparities to reduce and eliminate them

**Research for Improved Health: A National Study of Community-Academic Partnerships  
(by the Native American Research Centers for Health (NARCH))**

*Project Type:* Community-Based Participatory Research (CBPR)

*Population:* American Indian and Alaska Native communities

*Description:* This NARCH CBPR supplemental study will:

1. Support and strengthen the aims of the parent NARCH V study
2. Describe the variability of CBPR partnerships
3. Examine associations between participation variables and CBPR capacity and systems outcomes

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4. Create a “Research Community of Practice” of academic and community partners
5. Identify promising practices, assessment tools, and future research

The original mixed method design consisted of a nationwide internet survey of 80 projects and eight case studies in order to:

1. Have sufficient statistical power and analytic saturation of the cases
2. Triangulate qualitative and quantitative interpretations
3. Be generalizable for the diversity of CBPR

*Results:* This project was initiated in FY 2011, so there is no result yet. However, the collaborative, cooperative, and team science effort undertaken by the Universities of Washington and New Mexico and the National Congress of American Indians Policy Research Center (NCAIPRC) would enable the research teams to deliver a Native American cancer specific report from the internet survey and case studies. This report would highlight cancer projects using CBPR approaches in AI/AN communities and compare the inventory of such projects to the larger universe of CBPR projects to determine if there is variability due to health focus.

*Publication/Reference:* <http://narch.ncaiprc.org/>

### **Partnership for Native American Cancer Prevention (NACP)**

*Project Type:* Research, Training, Community Outreach, Capacity-Building

*Population:* Native American - Navajo, Hopi, the Tohono O’odham Tribes

*Description:* The Partnership for Native American Cancer Prevention (NACP) between Arizona Cancer Center (AZCC) and Northern Arizona University (NAU), started in 2002, has the following objectives:

1. Initiation of robust cancer research at NAU, e.g., enhance faculty career development and train students in cancer research
2. Creation of a stable, long-term cancer research, education, and outreach collaboration
3. Improvement of institutional effectiveness in impacting the disparity in cancer in American Indians of the Southwest

*Results:* The NACP continues its successful program supporting the training and career development of Native American faculty at NAU, training students in cancer research and education, as well as developing cancer research capacity at NAU. In FY 2011, seven NA students were engaged in cancer research in NACP-supported laboratories. NACP was also involved in the active recruitment of NA students into the University of Arizona. It established programs such as Health STAR, Pathfinder, and STEP to support the students with the aim of improving the retention of NA students in college.

There were five outreach events in the three tribal communities during the year. These included cancer education and prevention, cancer screening, and presentation of research findings to tribal community leaders. NACP organized a retreat for the partnership members in Sedona, AZ. All participating tribal nations were present and each tribe’s representative presented aspects of tribal culture and priorities with respect to cancer

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prevention and control. A considerable amount of time was spent by participants in discussing potential steps towards building an effective community-based research model for partnership efforts. The CBPR project involving the tribal communities is progressing successfully.

**The Comprehensive Umbrella of Research Experiences (CURE) Program**

*Project Type:* Training

*Population:* American Indian, Alaska Native, Native American

*Description:* Through the Comprehensive Umbrella of Research Experiences (CURE) program, the NCI awards administrative supplements to Principal Investigators (PIs) holding specific types of NIH research grants. The aim of this effort is to improve the diversity of the research workforce by supporting and recruiting students and other eligible investigators from population groups shown to be underrepresented in the biomedical research enterprise, such as Native Americans and Alaska Natives. Through the CURE program, NCI supports the training of Native American students and the career development and mentoring of post-doctoral fellows and junior faculty. NCI uses its Cancer Center supplement program to support research experiences for Native American high school and undergraduate students.

*Results:* In FY 2011, seven students and three early stage investigators were supported with diversity supplements and predoctoral fellowships. In FY 2011, three high school and two undergraduate students were involved in the CURE supplement summer programs. Three NA/AI early stage investigators and one mid-level investigator received the career development awards that will prepare them for becoming independent cancer investigators. The CURE program has been used effectively by the NCI to attract students and new investigators into the biomedical and behavioral sciences and into cancer research careers.

**Regional Native American Community Networks Program (RNACNP)**

*Project Type:* Research, Outreach, Training

*Population:* American Indian, Alaska Native

*Description:* This project is designed to contribute directly to improved cancer health outcomes and quality of life for AI/AN populations, which experience dramatic health inequities. This is the first year of a five year project. The central strategy is to capitalize on new opportunities and leverage existing resources to pursue an integrated, multifaceted research program that is catalyzed by tight partnerships with Native communities. The project addresses cancer health issues ranging from prevention and clinical trials to survivorship. The long-term goal is to generate findings that can be translated into practices and policies that will reduce AI/AN cancer-related health disparity.

*Results:* This research project has established over 300 networking partners including 24 partners that have active cancer education and outreach or research projects. A relationship with the Walking Forward program in South Dakota will implement an intervention at Pine

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Ridge Indian Reservation. In order to finalize the methods for this intervention research study, a survey was distributed to patients at the local hospital to gain information on their use of advanced technology for medical appointment reminders. Results from this survey will assist the Research Methods team to finalize the methods used for South central's randomized controlled trial. RNACNP has launched a monthly telehealth cancer survivorship and education series for AI/AN cancer support groups in an 8-state region, trained 42 tribal members on how to create health-related digital stories, trained 173 tribal members on cancer (utilizing the Understanding Cancer curriculum), and distributed over 600 Native Art for Cancer posters at tribal events. In addition, RNACNP is currently training an undergraduate student and a junior investigator who are American Indians. Other accomplishments include incorporating the principles of community-based participatory research (CBPR) by having AI/AN staff, AI/AN students, and local AI/AN artists adapt a currently existing comic book curriculum for use in and with Native communities.

### **The Northwest Tribal Cancer Navigation Program (NTCNP)**

*Project Type:* Research, Outreach

*Population:* American Indian, Alaska Native

*Description:* The Northwest Tribal Cancer Navigation Program (NTCNP) is a patient navigation research program that is administered through the Northwest Portland Area Indian Health Board (NPAIHB). NTCNP implemented a model of patient navigation that used lay- or nurse-navigators and was culturally responsive to the needs of each of the tribal groups that it served. Each tribe's local health board and the NPAIHB advisors provided advice and oversight of local activities.

In 2010, the NTCNP completed the intervention phase of this project. Research design involved comparing outcomes among members in clinics receiving navigation and those that were not. Four tribal clinics received the services of a patient navigator and four were in the comparison condition. Those in the comparison condition will receive a detailed report on the cancer outcomes for patients who have had abnormal breast, cervical, colon, or prostate screenings.

The study clinics (and their associated navigators) were disbursed throughout the Northwest region (i.e., Washington, Oregon, and Idaho). In addition to providing navigation services to patients with an abnormal finding that may be indicative of cancer, patient navigators provided outreach to the community (e.g., health fairs, etc.) and support to families with a member who has had a cancer diagnosis (e.g., coordinating end-of-life services, etc.).

*Results:* The NTCNP collected data related to breast, cervical, colon, and prostate cancers although navigators, as clinic employees, could provide navigation services to patients with any cancer diagnosis. Data on time to resolution and time to initiation of treatment were collected on a subset of 155 patients among all patients navigated during the intervention period. Data are being analyzed with respect to:

1. Barriers and actions to overcome those barriers

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2. Longitudinal data on outcomes for patients in the comparison clinics
3. Satisfaction and quality of life surveys (mixed quantitative and qualitative modalities)
4. Dissemination and sustainability activities. Complete analyses will be presented to the local tribal boards and disseminated to the communities and to NCI

**The Southwest American Indian Collaborative Network (SAICN)**

*Project Type:* Community Outreach

*Population:* American Indian

*Description:* The NCI provided support for the Inter Tribal Council of Arizona, Inc. (ITCA) to establish the Southwest American Indian Collaborative Network (SAICN) to eliminate cancer health disparities among American Indians. This collaborative project involves three primary partners: ITCA, the Arizona Cancer Center (AZCC), and the Phoenix Indian Medical Center (PIMC). This partnership is enhanced through input from the communities, three Arizona universities, and genomics researchers from the Translational Genomics Institute (TGen). The SAICN cores are: Administrative, Data and Evaluation, Outreach and Service, Policy, Research, Training, and Education. The cores are designed to help assure that SAICN increases and sustains delivery of interventions and develops pilot studies using a collaborative approach.

*Results:* This has been a collaborative program with the Hopi Department of Health. SAICN supported community-based participatory activities and the development of partnerships among communities, cancer prevention/care delivery systems, and research discovery/development systems. In the past, SAICN had added an interactive training program for patient navigators in order to intervene in the numerous barriers faced by AI/AN populations in obtaining cancer care. In addition, Spirit of Eagles, with its partners, has developed a culturally appropriate tool kit on cancer, digital stories on survivorship, culturally tailored web educational materials, a video on spirituality and cancer care, and a glossary on genomics. Currently, analysis of outcomes from the cores and the more recent patient navigation program are underway.

**The University of Oklahoma Community Networks Program**

*Project Type:* Outreach

*Population:* American Indian

*Description:* The University of Oklahoma Community Networks Program (OUCNP) is a recently completed partnership among the University of Oklahoma Cancer Center, the Oklahoma State Department of Health, the Cherokee Nation, and the Choctaw Nation of Oklahoma in order to reduce the burden of cancer among tribal members. Activities included:

1. Capacity-building among partners through community-based participatory research, education, and training
2. A clinical trials database

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3. Community-based participatory research and training programs involving these partners to reduce cancer health disparities
4. A patient navigator program among community partners

*Results:* A database linking Oklahoma Central Cancer Registry (OCCR) data with the Oklahoma Cancer Institute (OUCI) clinical trials database was established and resulted in increased participation in clinical trials. Another database, which linked cancer education and screening activities with the tribal patient tracking system (RPMS), has led to an increase in cancer screening among tribal members. An evaluation of three Cherokee Nation Cancer Summits, held during the life of the grant, demonstrated increases in knowledge and awareness of a variety of cancer topics, such as skin or colorectal cancer detection and treatment, clinical trials, primary-care-provider cancer knowledge, traditional/Alternative medicine, and HPV vaccination. Also, in the Cherokee Nation, health fairs targeted smoking and cancer screening behaviors.

*Publication/Reference:* Foster MW, Royal CDM, Sharp RR. 2006. The routinization of genetics and genomics: implications for ethical practices. *Journal of Medical Ethics* 32 (11): 635-638

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Sharp RR, Foster MW. 2007. Grappling with groups: protecting collective interests in biomedical research. *Journal of Medicine and Philosophy* 32 (4): 321-337

Baezconde-Garbanati, L, Beebe, LA & Perez-Stable, E (2007). Addiction. Building capacity to address tobacco-related disparities among American Indian and Hispanic/Latino communities: conceptual and systemic considerations, 102 (Suppl. 2), 112-122

Foster MW, Sharp RR. 2007. Share and share alike: deciding how to distribute the scientific and social benefits of genomic data. *Nature Reviews Genetics* 8 (8): 633-38

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## **Kansas Community Cancer Disparities Network**

*Project Type:* Research, Outreach, Training

*Population:* American Indian

*Description:* The Kansas Community Cancer Disparities Network (KCCDN) is a newly established Community Network Program Center (CNPC) headquartered at the University of Kansas Medical Center. The KCCDN will concentrate on reaching rural American Indians with innovative programs to improve knowledge and access/utilization of beneficial biomedical and behavioral cancer procedures. Using community-based participatory research methods, KCCDN plans to conduct a rigorous and controlled clinical trial, testing the efficacy of a novel intervention based on the "implementation intentions" construct to promote breast cancer treatment. A smaller study seeks to enhance knowledge, awareness, and interest in cancer clinical trials. A Training Core program is specifically designed to train health disparities researchers through community-based research activities. Year 1 has been devoted to capacity-building, training, community outreach, and research protocol development.

*Results:* KCCDN researchers and community health educators have responded to community needs and requests, such as a series of health fairs in the Spring and Summer of 2011, which provided opportunities to disseminate cancer prevention information, counsel community members on their cancer risk using risk assessments, and provide referrals to local low/no-cost resources for cancer screenings. Research staff worked with local community advisory boards (CABs) to develop materials and train intervention specialists. An AI clinical psychologist has been identified for intensive mentoring in CBPR methods. All activities are overseen through a structure involving both academic and community leaders.

## **Spirit of EAGLES Community Network Program II (SoE-CNP II)**

*Project Type:* Translational Research, Outreach, Clinical Trials, Community-Based Participatory Research, Training

*Population:* American Indian, Alaska Native

*Description:* Research conducted by the Mayo Clinic and the Alaska Native Tribal Health Consortium at the Alaska Native Medical Center in Anchorage investigates exposure of pregnant Alaska Native women to tobacco, how substances in tobacco can cause cancer, and at what levels the substances are found in the baby born to those women. Assisting in this effort are the Southcentral Foundation, University of California - San Francisco, the University of Minnesota, the Centers for Disease Control and Prevention, the University of Toronto, and the National Institutes of Health.

Outreach efforts focus on reducing the burden of cancer and other comorbidities that affect the AI/AN population by maintaining and expanding networks of community and national partnerships dedicated to developing effective community driven strategies to improve cancer control. An integrated and coordinated approach is used to reduce the burden of

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cancer and other chronic diseases through education, health promotion, and translation of effective community-driven evidence-based research strategies. Collaborative work with urban and rural tribal communities and national Native and non-Native partners advance efforts to improve access to, and use of, beneficial biomedical procedures, clinical trials, and uptake in behavioral change to reduce the burden of cancer and other comorbid conditions. The Hampton Faculty Fellows Program trains qualified health disparity researchers (new and early stage investigators) experienced in Community-Based Participatory Research in cancer prevention and control and promotes career development as competitive health disparities researchers.

*Results:* The first SoE-CNP II triennial conference held in Seattle, Washington was attended by over 300 providers, survivors, researchers, and students.

*Publication/Reference:* A supplement to the Journal of Cancer Education with 18 articles arising from the conference was published in the Summer of 2011.

**National Outreach Network: Partnership for the Advancement of Cancer Research**

*Project Type:* Community Outreach, Educational

*Population:* Native American

*Description:* Under the auspices of the Center to Reduce Cancer Health (CRCHD), the National Outreach Network (NON) connects NCI-supported outreach and community education efforts with community-based cancer health disparities research and training programs. NON is a multidisciplinary, research-based approach to understanding tailored communication, outreach, and education effectiveness in the prevention, health promotion, and health protection of underserved and at-risk communities. Working through dedicated Community Health Educators (CHE) at grantee sites, NON supports community outreach capacity, such that cancer information is relevantly disseminated and researchers engage study participants in culturally appropriate ways to foster recruitment and retention.

As a part of NON, the Partnership for the Advancement of Cancer Research between New Mexico State University and the Fred Hutchinson Cancer Research Center plans to conduct a unique assessment event with the Native American community and cancer researchers. The CHE will help facilitate these initial conversations among the Native American community and cancer researchers to identify the questions and concerns about cancer and nutrition that the Native American community would like to see addressed in research programs. The ultimate goal of this program is to identify the most efficient and sustainable ways to provide cancer health education to populations that live in rural and small towns in Southwestern communities, many with access to the internet only through public libraries and schools.

### **Tailored Touch-Screen Colorectal Cancer Prevention in American Indian Communities**

*Project Type:* Research

*Population:* American Indian, Alaska Native

*Description:* Colorectal cancer mortality disproportionately impacts minority population groups. Few studies have addressed screening for this cancer type among American Indian populations. This study will assess the efficacy of a tailored touch screen computer intervention based on an integration of the Precaution Adoption Process Model (PAPM) and the concept of "implementation intentions." The intervention will be delivered in tribal clinics and primary care settings on low-cost touch screen computers through multimedia audio-narrative and video messages.

### **Interventions for Health Promotion and Disease Prevention in Native American Populations Research Project Grant**

*Project Type:* Research

*Population:* Alaska Native, American Indian, Native Hawaiian

*Description:* The purpose of this funding opportunity announcement (FOA) is to develop, adapt, and test the effectiveness of health promotion and disease prevention interventions in Native American populations. NA populations are exposed to considerable risk factors that significantly increase their likelihood of chronic disease, substance abuse, mental illness, and HIV-infection. The intervention program should be culturally appropriate and promote the adoption of healthy lifestyles, improve behaviors and social conditions, and/or improve environmental conditions related to chronic diseases, the consumption of tobacco, alcohol, other drugs, mental illness, or HIV-infection. The intervention program is designed so that it could be sustained within the entire community, within existing resources, and, if successful, disseminated to other Native American communities. The long-term goal of this FOA is to reduce mortality and morbidity in NA communities.

### **The New Mexico Tumor Registry (NMTR)**

*Project Type:* Capacity-Building

*Population:* American Indian, Alaska Native

*Description:* As a part of the Surveillance, Epidemiology and End Results (SEER) Program, the New Mexico Tumor Registry (NMTR) reports cancer cases for all residents of New Mexico, including AI/ANs. Due to NMTR's experience and expertise in collecting data from Indian Health Service facilities, and because several of these facilities serve both New Mexico and Arizona residents, NMTR is providing technical assistance to the Arizona Cancer Registry by collecting AI/AN cases from IHS facilities in both states. Through this program, the NCI is developing cancer surveillance infrastructure to ensure that data on all racial/ethnic population groups are adequately represented in its research resources.

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*Results:* This NCI-supported activity has enabled the Arizona registry to report more complete case counts for AIs/ANs. NCI's Surveillance Research Program will continue to support the collection of data on Arizona-based American Indians.

*Publication/Reference:* Various publications on SEER web site: <http://seer.cancer.gov/>

### **The Cherokee Nation Cancer Registry (CNCR)**

*Project Type:* Capacity-Building

*Population:* Native Americans - The Cherokee Nation of Oklahoma

*Description:* The NCI's Surveillance Research Program is partnering with the Cherokee Nation of Oklahoma to fund a pilot cancer registry with the goal of building an infrastructure that conforms to SEER standards in case finding, patient follow-up, data processing, data reporting, and quality assurance. The target population includes all American Indians residing in the Cherokee Nation's 14-county Tribal jurisdictional service area that are eligible for health care through Tribal or IHS facilities. A Memorandum of Agreement (MOA) between the Cherokee Nation Cancer Registry (CNCR) and the Oklahoma Central Cancer Registry has enabled the registries to collaborate and share needed data.

*Results:* Data from the CNCR were used to obtain funding from CDC to establish the Cherokee Nation Comprehensive Cancer Control Program. Data from the CNCR has been successfully submitted to the NCI using the new SEER data management system. The CNCR continues to expand its data collection capacity and report its results at its annual meetings.

*Publication/Reference:* Various publications on SEER web site: <http://seer.cancer.gov/>

### **Center for Native Population Health Disparities**

*Project Type:* Research

*Population:* American Indian

*Description:* The University of Washington (UW) and the Black Hills Center for American Indian Health (BHCAIH) will support a Center for Native Population Health Disparities (CNPHD). The aim is to contribute directly to improved cancer health outcomes and quality of life for American Indian/Alaska Native populations - populations that experience dramatic health inequities. The CNPHD will strive to address the gaps identified in influential publications. Our research agenda articulates a model for AI/AN health and health disparities that is well-grounded in current theory. The many Native people involved in this Center, and the Community Action Board and two AI/AN sociologists, will help us examine critically the role of culture in the model. The investigations pursue a single leitmotif - the examination of genetic, environmental, biological, psychosocial, and cultural influences on cancer health disparities at multiple levels and across the lifespan.

## **The Walking Forward Program**

*Project Type:* Community Outreach

*Population:* Native American - Sioux Tribes of the Northern Plains and South Dakota

*Description:* The NCI supports access to health services. The Walking Forward Program at the Rapid City Regional Hospital (RCRH) has been funded since 2002 as one of the six Cancer Disparity Research Partnership (CDRP) grantees whose goal is to increase the access and enrollment of minority/underserved populations into NCI cancer clinical trials.

The Walking Forward Program serves the American Indians in the Northern Plains region living within the Rapid City community and three reservations in Western South Dakota. The CDRP grant supports community research representatives (including representatives from the Sioux Tribe, the Pine Ridge Oglala Sioux Tribe, and the Rosebud Reservation Sioux Tribe) who live on their reservations and provide the public outreach, education, patient navigation, and recruitment services necessary for their communities to access cancer care and treatment from NCI cancer clinical trials at RCRH.

Clinical screening coordinators were hired in 2010-2011 to work at the Indian Health Service clinics on these reservations and, together with the community representatives' community education and outreach activities, aim to increase the knowledge and awareness of available cancer screenings and NCI-sponsored clinical trials to members of these Sioux communities in the Northern Plains regions. The long-term goal is to reduce cancer mortality and morbidity for AIs by altering stage of presentation and thus increase the eligibility and participation of AIs in clinical trials.

*Results:* To date, several surveys were conducted to identify and address barriers to cancer care, over 400 American Indian cancer patients have been navigated for cancer care and treatment, and several education workshops were conducted at the reservations which facilitated over 500 cancer screenings among AI community members. During the duration of the Walking Forward Program, a total of 132 AIs (22.3%) out of 593 patients have been included in many types of investigator-initiated CDRP and NCI-sponsored cancer clinical trials, including 100 AIs for an Ataxia Telangiectasia mutation gene analysis trial for radiotherapy toxicity. Culturally-tailored cancer education modules on cancer screening and palliative care, a barrier assessment form for patient navigation, and a clinical trials tracking form to assess eligibility of patients for clinical trials have been developed and are available as a public resource.

*Publication/Reference:* Guadagnolo BA, Boylan A, Sargent M, Koop D, Brunette D, Kanekar S, Shortbull V, Molloy K and Petereit DG. Patient navigation for American Indians undergoing cancer treatment: utilization and impact on care delivery in a regional healthcare center. *Cancer* 2011; 117(12):2754-2761

Subrahmanian K, Petereit DG, Kanekar S, Burhansstipanov L, Esmond S, Miner R, Spotted Tail C and Guadagnolo BA. Community-based participatory development, implementation, and evaluation of a cancer screening educational intervention among American Indians in the Northern Plains. *J Cancer Educ.* 2011; 26(3): 530-539

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Pandhi N, Guadagnolo BA, Kanekar S, Petereit DG, Karki C and Smith MA. Intention to receive cancer screening in Native Americans from the Northern Plains. *Cancer Causes Control* 2011; 22(2):199-206

Swartz MJ and Petereit DG. The role of radiation therapy in the management of lung, prostate and colorectal cancer in South Dakota. *S D Med* 3010: Spec. No. 60-66

**NATIONAL CENTER FOR COMPLEMENTARY AND ALTERNATIVE MEDICINE (NCCAM)**

The National Center for Complementary and Alternative Medicine (NCCAM) is the federal government's lead agency for scientific research on complementary and Alternative medicine (CAM). The mission of NCCAM is to define, through rigorous scientific investigation, the usefulness and safety of complementary and Alternative medicine interventions and their roles in improving health and health care.

**Traditional Healing Practices and CAM Utilization in the San Carlos Apache Tribe**

*Project Type:* Research

*Population:* San Carlos Apache Tribe

*Description:* The Integrative Medicine Attitudes Questionnaire (IMAQ) will be modified to be culturally relevant to the San Carlos Apache Tribe (SCAT) in order to determine the community members' knowledge, attitudes, and utilization of complementary and Alternative methods (CAM) and traditional medicine. Data gained from the survey will be applied to develop new facilities and services for the SCAT and to ensure that the design of the new health facility meets members' needs and desires for expanded service.

This project is a part of the Native American Research Centers for Health (NARCH). NCCAM supports four research projects that are part of NARCH, a collaboration between the Indian Health Service and NIH. The NARCH initiative supports partnerships between AI/AN tribes or tribally-based organizations and institutions that conduct intensive academic-level biomedical, behavioral, and health services research. This initiative provides opportunities for conducting research, research training, and faculty development to meet the needs of AI/AN communities. This project is a part of NCCAM's NARCH activities.

**Acupuncture and Diabetic Neuropathy among Native Americans**

*Project Type:* Research

*Population:* Native American in Southern California

*Description:* Acupuncture could be a cost-effective intervention for diabetes-induced peripheral neuropathy. The project will establish data on the prevalence of peripheral neuropathy among Native Americans at a Southern California American Indian diabetes

clinic. The study will then examine the effectiveness of acupuncture in this community to treat diabetic neuropathy, a complication of diabetes. This project is a part of NCCAM's NARCH activities.

### **Equine-Assisted Substance Use Prevention for Northern Plains American Indian Adolescents**

*Project Type:* Research

*Population:* Spirit Lake Dakota - Northern Plains American Indian

*Description:* The aim of this project is to develop and pilot a culturally-based, substance use disorders prevention program to reduce four primary risk domains in Northern Plains American Indian adolescents aged 10-14 years. The program will target traditional protective factors (i.e., enculturation, family/community connectivity, spiritual coping, traditional health practices, and identity strength) and empirically supported behavioral protective skills. This project is a part of NCCAM's NARCH activities.

### **Development of a Pain Rehabilitation Program for American Indians with Chronic Pain that Incorporates Opioid Tapering**

*Project Type:* Research

*Population:* Fond du Lac Band of the Lake Superior Chippewa

*Description:* The aim of this project is to improve the care of Chippewa community members who experience chronic pain. Researchers will adapt an efficacious cognitive behavioral intervention for American Indian adults coping with chronic pain in order to reduce the use of opioid treatments. This study will evaluate the efficacy of the intervention through a randomized clinical trial. This project is a part of NCCAM's NARCH activities.

### **Drum-Assisted Recovery Therapy for Native Americans**

*Project Type:* Research

*Population:* Native American, Alaska Native

*Description:* Drum therapy is an indigenous treatment approach that has been utilized for many centuries to promote healing and self-expression. This pilot project aims to develop a culturally relevant strategy, drum therapy, to enhance treatment options and decrease related consequences for substance abuse in AI/ANs. This project is a part of NCCAM's NARCH activities.

## **NATIONAL CENTER FOR RESEARCH RESOURCES (NCRR)**

The National Center for Research Resources (NCRR) provides laboratory scientists and clinical researchers with environments and tools they can use to prevent, detect, and treat a wide range of diseases. NCRR supports health activities relevant to AI/AN/NA populations through the

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Institutional Development Award (IDeA), the Research Centers in Minority Institutions (RCMI) program, the Science Education Partnership Award (SEPA), and the Clinical and Translational Science Award (CTSA) programs.

The IDeA program fosters health-related research and enhances the competitiveness of investigators by supporting faculty development and research infrastructure enhancement at institutions located in states in which the aggregate NIH funding has historically been low, and also serves unique populations – such as rural and medically underserved communities – in those 23 states and Puerto Rico.

### **Montana INBRE: A Multidisciplinary Research Network**

*Project Type:* Capacity-Building

*Population:* American Indian

*Description:* As part of the IDeA program, NCCR's IDeA Networks of Biomedical Research Excellence (INBRE) initiative promotes the development, coordination, and sharing of research resources and expertise to expand research opportunities and increase the number of competitive investigators in the IDeA states. The INBRE initiative supports the student pipeline through outreach to faculty and students in undergraduate institutions, tribal colleges, community colleges, and high schools.

The Montana INBRE supports student education to increase scientific and technical knowledge in the state's workforce and to develop community-based health research on Montana's Indian reservations to improve health in Native American communities. In Montana, seven Tribal colleges, including Little Big Horn, Chief Dull Knife, Blackfeet, Fort Belknap, Fort Peck, Salish Kootenai, and Stone Child are brought together under the IDeA Program to collaborate on biomedical research projects with undergraduate and research universities across the state.

*Results:* Over 20 students worked as interns on the project entitled "Exposure Assessment to Environmental Contaminants on the Crow Reservation" at Little Big Horn College. Two additional NIH grants were developed and funded, in part, from the progress achieved by INBRE-funded projects.

### **Nebraska Research Network in Functional Genomics – The Little Priest Tribal College (LPTC)**

*Project Type:* Research

*Population:* Native American

*Description:* The Little Priest Tribal College's INBRE research project, "Aura Imaging, Iridology, and Sclerology Research," demonstrates the complexity of the human organism and the importance of the many homeostatic mechanisms that work in concert to give a person health and vitality. It offers interns hands-on research experience that is equivalent to their level of education and commensurate with their cultural experience. The project

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supports students' goals to pursue degrees in health-related fields and satisfies their desire to provide a service to the larger community of the Winnebago Tribe. It also exposes students to current technology and demonstrates an immediate, relevant, and practical application of that technology.

**New Mexico INBRE Program**

*Project Type:* Capacity-Building

*Population:* American Indian

*Description:* The INBRE program at New Mexico State University is involved in reaching out to American Indian communities through a variety of mechanisms. Significant inter-programmatic outreach collaboration exists between NM-INBRE and the NIH NIGMS-funded program Bridges to the Future, Associate to Baccalaureate Degree for American Indian Students Program, through the project titled "Bridge to Native American Students in Community Colleges." The NM-INBRE research portfolio includes a new pilot project which enrolls a large percentage of students from the Navajo, Ute, and Jicarilla Apache Nations and provides opportunities for students to participate directly in biomedical research while they are enrolled in this first stage of the pipeline. The community-based Zuni Health Initiative correlates cultural links to health disparities, with potential for education and the development of interventions to improve the health status of their tribal communities.

*Publication/Reference:* Jean W. MacCluer, Marina Scavini, Vallabh O. Shah, Shelley A. Cole, Sandra L. Laston, V. Saroja Voruganti, Susan S. Paine, Alfred J. Eaton, Anthony G. Comuzzie, Francesca Tentori, Dorothy R. Pathak, Arlene Bobelu, Jeanette Bobelu, Donica Ghahate, Mildred Waikaniwa and Philip G. Zager: Genetic Effects on Measures of Renal Disease among Zuni Indians: The Zuni Kidney Project -American J of Kidney Disease -Nov 2009

Malhotra Alka A et al, Family Investigation of Nephropathy and Diabetes Research Group. Genome-wide linkage scans for type 2 diabetes mellitus in four ethnically diverse populations-significant evidence for linkage on chromosome 4q in African Americans: the family investigation of nephropathy and diabetes research group. Diabetes Metab Res Rev 25 8, 2009 Nov pp.740-7

Raj Dominic S C DS, Carrero Juan J JJ, Shah Vallabh O VO, Qureshi Abdul R AR, Bárány Peter P, Heimbürger Olof O, Lindholm Bengt B, Ferguson Jennet J, Moseley Pope L PL, Stenvinkel Peter P. Soluble CD14 levels, interleukin 6, and mortality among prevalent hemodialysis patients. Am J Kidney Dis 54 6, 2009 Dec pp.1072-80

Vallabh O. Shah, Jeannette E. Ferguson, Lucy A. Hunsaker, Lorraine M. Deck and David L. Vander Jagt. Natural Products Inhibit LPS-induced Activation of Pro-inflammatory Cytokines in Peripheral Blood Mononuclear Cells. Natural Product Research. 2009 July

### **North Dakota INBRE: Health and the Environment**

*Project Type:* Capacity-Building

*Population:* Native American

*Description:* The North Dakota INBRE supports and expands efforts to engage Native American students in undergraduate research. It has established a genetics-based undergraduate-driven research program on pre-eclampsia at Turtle Mountain Community College in the Native American community. An introduction to research course has been developed recently by Native American faculty for the Cankdeska Cikana Community College. In addition, the North Dakota INBRE funded and stabilized the K-12 portion of the Indians into Medicine Program.

*Results:* The K-12 portion of the Indians into Medicine Program produced over 25% of the Nation's Native American physicians.

### **Oklahoma INBRE**

*Project Type:* Capacity-Building

*Population:* Native American

*Description:* At the Harold Hamm Oklahoma Diabetes Center, researchers are investigating the genetic and environmental factors influencing 14 diabetes-related genetic traits in AI sibling pairs. The identification of genetic and environmental components of diabetes risk is necessary so that effective, culturally-appropriate intervention and treatment strategies can be developed. In addition, Comanche Nation Tribal College has used the Oklahoma INBRE to build its capacity to offer more STEM programming and to develop science coursework.

*Results:* The Comanche Nation College Science/Math classroom now is completed, with new lab desks, lab stations, lab cabinets, lab equipment, and 15 microscopes. These new additions have made a great impact on learning in biology classes. Students now are able to perform more learning activities with these additions and thus increase their knowledge in the fields of Science. The total number of science and math students at Comanche Nation College during this time was 115.

### **The South Dakota INBRE**

*Project Type:* Capacity-Building

*Population:* Native American

*Description:* The South Dakota INBRE:

1. Develops human resources for undergraduate and graduate programs in the biomedical sciences and bioinformatics
2. Instills a culture of research
3. Provides a pipeline for students interested in biomedical research at South Dakota's predominantly undergraduate institutions and tribal colleges. Two tribal colleges,

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Oglala Lakota and Sisseton Wahpeton Colleges, have received funding from the South Dakota INBRE

**The Center for Alaska Native Health Research (CANHR): Investigating Obesity and Chronic Disease-Related Risk Factors of Alaska Natives**

*Project Type:* Capacity-Building

*Population:* Alaska Inupiat and Yup'ik Eskimo

*Description:* The IDeA Program also creates Centers of Biomedical Research Excellence (COBRE) to strengthen institutional biomedical research capability. The Centers promote collaborative interactive efforts among researchers with complementary backgrounds, skills, and expertise.

The overall goal of CANHR, which is supported through a COBRE award, is to achieve a permanent and sustainable research center at the University of Alaska Fairbanks (UAF) with the primary theme of investigating obesity and chronic disease-related risk, control, and prevention among Alaska Natives.

The CANHR employs a collaborative research model working with Yup'ik Eskimo and other Alaska Native communities, tribal health care organizations, and individuals in order to frame research questions, develop methodologies and procedures, and interpret and apply data to the prevention and treatment of diabetes, cardiovascular diseases, mood disorders, and substance abuse.

*Results:* The CANHR has joined with other NIH-funded Alaska research projects to combine Alaska Inupiat and Yup'ik health research data sets representing almost 4,000 people, giving scientists a better understanding of Alaska Eskimo's health risks and protections.

*Publication/Reference:* Rivkin, I, Lopez, EDS, Quaintance, TM, Trimble, J, Hopkins, S, Fleming, C, Orr, E, Mohatt, GV. (Accepted 04/10). Value of Community Partnership for Understanding Stress and Coping in Rural Yup'ik Communities: The CANHR Study. Journal of Health Disparities Research and Practice

Pasker, R., Dickson, M., Wiener, H., M., Jeannet, M.A., O'Brien, D., Tiwari, H.K., Boyer. B.B. "Gene by environment interactions between four candidate genes for obesity and omega-3 polyunsaturated fatty acids (PUFAs) in Yup'ik Eskimos." American Society for Human Genetics, October 2009

Moses SK, Whiting AV, Muir DC, Wang X, O'Hara TM. Organic nutrients and contaminants in subsistence species of Alaska: concentrations and relationship to food preparation method. Int J Circumpolar Health. 2009 Sep; 68(4):354-71

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Oppel, S., A.N. Powell, D.M. O'Brien 2010. "King eiders use an income strategy for egg production – a case study for incorporating individual dietary variation in nutrient allocation research" *Oecologia*. In press

**Pacific Center for Emerging Infectious Diseases Research**

*Project Type:* Capacity-Building, Research

*Population:* Native Hawaiian

*Description:* The Pacific Center for Emerging Infectious Diseases Research at the University of Hawaii, Manoa, conducts research on the emergence and spread of newly-recognized infectious diseases, with special attention to those that disproportionately affect underserved ethnic minority populations and disadvantaged or marginalized communities in Hawaii and the Asia-Pacific region.

*Results:* There has been progress in understanding the molecular epidemiology of various pathogens, identifying unique bacterial strains among Native Hawaiians and Polynesians, and understanding the host immune responses to infectious diseases. Recent publications address rheumatic fever in American Samoa and the molecular epidemiology of dengue in Hawaii.

*Publication/Reference:* Erdem G, Mizumoto C, Esaki D, Abe L, Johnson D, Yamaga K, Effler PV, Reddy V, Lim A, Kaplan EL. Unusual emm types among clinical isolates of *Streptococcus pyogenes* in Hawaii, a region with high- incidence acute rheumatic fever. *Pediatr. Infect. Dis. J.* 2008

Erdem G, Mizumoto C, Esaki D, Reddy V, Kurahara D, Yamaga K, Abe L, Johnson D, Yamamoto K, Kaplan EL. Group A streptococcal isolates temporally associated with acute rheumatic fever in Hawaii: differences from the continental United States. *Clin Infect Dis.* 2007 Aug 1;45(3):e20-4. Epub 2007 Jun 19

Erdem Guliz, Dodd Anna, Tuua Anita, Sinclair Sandra, I'atala Tagi'ilima F, Marrone James R, Tuua Benjamin. Acute rheumatic fever in American Samoa. *Pediatr Infect Dis J* 26 12, 2007 Dec pp.1158-9

**RCMI Clinical Research Infrastructure at the University of Hawaii Manoa: Development of Metabolic Syndrome in Native Hawaiian and Samoan Adolescents/Hawaii Youth Metabolic Study (HYMS)**

*Project Type:* Research

*Population:* Native Hawaiian and Samoan children

*Description:* The RCMI program is dedicated to enhancing research capability in minority institutions that have doctoral programs in the health sciences. This RCMI program supports a community-based observational study on the development of metabolic

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syndrome (MS) in overweight Native Hawaiian and Samoan children. The study goals are to:

1. Determine the prevalence of metabolic syndrome in overweight Native Hawaiian and Samoan youth
2. Examine the pattern of physical and laboratory markers associated with metabolic syndrome in high-risk children
3. Examine the relationship between maternal gestational diabetes, birth weight, and growth rate in the first three years of life with the development of MS

*Results:* RCMI investigators have developed many prevention programs that focus on childhood obesity, including the first Eating Disorders and Obesity (EDO) prevention program implemented in Hawaii. The EDO has:

1. Addressed a spectrum of weight and body image issues in boys
2. Used a Healthy Body Image (HBI) curriculum designed to promote healthy lifestyles among 4<sup>th</sup> - 6<sup>th</sup> graders
3. Implemented studies aimed at comparing perspectives about body size, food-related behavior, and exercise attitudes among Hawaiian teens

**University of Iowa's Institute for Clinical and Translational Science: Streptococcus Mutans and Dental Caries in Native American Children**

*Project Type:* Research

*Population:* Native American

*Description:* The CTSA program is a national consortium of medical research institutions transforming clinical and translational research across the nation. This unique network of organizations is working together to speed laboratory discoveries into treatments for patients, to engage communities in clinical research, and to train clinical and translational researchers.

The CTSA at the University of Iowa is supporting a study to identify risk factors for early childhood caries (ECC) among AI/AN infants and toddlers and to determine if Streptococcus Mutans (SM) alone, or in combination with environmental and behavioral factors, increases risk of caries in Native American children. The study is looking at transmission of SM in Native American children, the incidence of ECC in Native American children through age 36-months, and the dietary and nutritional risk factors for acquisition of virulent SM clones and ECC in Native American infants and toddlers.

**NCCR Science Education Partnership Award (SEPA) Biomedical Partnership for Research Education Pipeline in Alaska (Alaska BioPREP)**

*Project Type:* Educational, Community Outreach

*Population:* Alaska Native (Aleut, Alutiiq, Yupik, Inupiaq, Athabascan, and Tlingit), Native Hawaiian

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*Description:* Through the Science Education Partnership Award (SEPA) program, NCCR provides funding to improve life science literacy throughout the nation, including at Tribal Colleges and Universities. The project has the following three main goals:

1. Rural Alaska high school students will gain an appreciation of the importance of STEM education and molecular biological approaches to the practice of medicine and health policy in their daily lives
2. A community-based model will blend the resources of local school teachers and health providers
3. There will be encouragement for the pursuit of biomedical and health careers in Alaska communities

*Results:* The first two years of SEPA funding were planning years for the Alaska BioPREP program. Teachers from four new schools joined BioPREP in summer 2010 and will have active research projects during the 2010-11 school year. The locations are: Kaktovik (pop. 286), Wainwright (pop. 501), the Alternative high school in Anchorage (pop. 290,000), and Petersburg (pop. 2973).

The program at Mt. Edgecumbe boarding high school, primarily Alaska Natives, will continue. Of the 10 high school students in the six-week summer 2010 intensive biomedical research program at UAF, four are Alaska Native or American Indian and six are Caucasian. A new genetics and biotechnology module is being piloted during the two week summer residential program at UAF for nine middle and high school students. The long-standing and popular Biomedicine module also continues with eight participants.

A new program element, the Regional Program, will be piloted in the town of Barrow (pop. 4119). The 13 high-school-student participants will use much of the same curriculum as the new genetics and biotechnology module.

*Publication/Reference:* <http://www.alaska.edu/inbre/outreach/alaska-bioprep/>

**NCCR Science Education Partnerships Award (SEPA): Environmental Health Science Education for Rural Youth**

*Project Type:* Educational

*Population:* Salish Kootenai College, American Indian tribal community

*Description:* This project has the following goals:

1. Offer innovative training experiences and career development opportunities in biomedical science
2. Increase enrollment in post-secondary science education
3. Improve science literacy by making information and materials culturally appropriate and comprehensible to a broad audience, including Native Americans, rural residents, and groups most affected by environmental health problems and disparities in health outcomes

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*Results:* The project has impacted approximately 5,710 students, teachers, and community members to date with a monthly newsletter ([www.umt.edu/cehs/k12\\_outreach.html](http://www.umt.edu/cehs/k12_outreach.html)); student internships; partnerships with Region 10 EPA, Alaska Intertribal Council, NSF Big Sky Science Project and Clark Fork Watershed Education Program; and on-line Resources for Teachers.

*Publication/Reference:* Jones et al, Science Education and Public Engagement: An International Journal, 1(2): 51-55 (2007)

Ward et al., The Big Sky Model: A regional collaboration for participatory research on environmental health; Journal of Higher Education Outreach & Engagement; Vol 12(3): 103-115, (2008)

Adams et al, The Big Sky Inside: Measuring rural indoor air quality and its impact on the community. The Science Teacher, Vol 76(4), 40-45 (2009)

Project URL: [http://www.umt.edu/cehs/k12\\_outreach.html](http://www.umt.edu/cehs/k12_outreach.html)

**NCCR Science Education Partnership Award (SEPA) K-12: Virtual Clinical Research Center & Medical Ignorance Exploratorium**

*Project Type:* Educational

*Population:* Hispanic, American Indian, African Indian, Asian-Pacific Islander, Caucasian

*Description:* This project aims to:

1. Build stepwise a prototype Virtual Clinical Research Center for K-12 learners and mentors (diverse peers, experts, and patients)
2. Develop the Medical Ignorance Exploratorium as a hybrid K-12 cybercafé-health science museum with a navigable, game-like, 3D environment
3. Rigorously evaluate the impact and effectiveness
4. Disseminate widely to additional K-12 schools and communities

*Results:* Five percent of the students are still in high school while almost all others are attending or graduated from community or four-year colleges, most in Tucson, with science or pre-professional careers, with 1% in military service, 6% not tracked, 37 admitted or attending medical school, 54 admitted or completed graduate school, with 37 in Masters, 12 in PHD, four in MD/PHD, and 17 in health professional schools. Twenty-three percent are doing research.

*Publication/Reference:* Witte, Marlys H. MD; Crown, Peter PhD; Bernas, Michael MS; Garcia, Francisco A.R. MD, MPH; "Ignoramics" in Medical and Premedical Education; Journal of Investigative Medicine: October 2008 - Volume 56 - Issue 7 - pp 897-901

Project URL: <http://www.ignorance.medicine.arizona.edu/>

**NCRR Science Education Partnership Award (SEPA): Building Bridges: Health Science Education in Native American Communities**

*Project Type:* Educational, Community Outreach

*Population:* Native American

*Description:* The goals of this project is to:

1. Promote student interest in the sciences by hands on science lessons, fostering a more science literate public
2. Increase the number of Native Americans entering health and science careers
3. Improve science instruction in the classrooms serving Native American partners – student engagement will be enhanced through summer experiences at science camps for middle school to extended laboratory research projects for select high schools students
4. Increase awareness of health and science professions among Native American populations and help to bridge the significant gap in health and education disparities

**NCRR Science Education Partnership Award (SEPA): Genes, the Environment, and ME (GEM)**

*Project Type:* Educational

*Population:* Native American, Hispanic

*Description:* This project addresses the pressing need for deeper understanding of biomedical research among diverse populations and will increase representation of underrepresented minorities in biomedical fields through a Community-Based Participatory Research Approach to involve community members. GEM will work primarily with school districts in the Yakima Valley, a rural agricultural region in central Washington with a large percentage of Hispanic and Native American students.

**Indian Health Service's (IHS) Native American Centers for Health**

*Project Type:* Community-Based Participatory Research

*Population:* American Indian

*Description:* In 2009, NCRR entered into a multi-year agreement with the IHS to co-fund a major national study of community-based participatory research approaches for addressing health disparities in Indian Country through a Native American Research Centers for Health grant. The grant was awarded to the National Congress of American Indians Policy Research Center, with sub-awards to the University of New Mexico and the University of Washington. The project seeks to determine conditions under which CBPR in Native communities is most effective. It will result in a testable model of CBPR practice, produce site-specific and aggregate reports about promoters and inhibitors of CBPR in Native communities, and allow for the comparison of Native data to data from other communities of color.

### **Alaska INBRE: Environmental Agents and Disease**

*Project Type:* Capacity-Building

*Population:* Alaska Native

*Description:* The INBRE at the University of Alaska supports biomedical workforce training in Alaska. This training starts early in high schools located in rural communities and remote Alaska Native villages. The INBRE also engages their parents and communities as well, particularly in the villages. The program emphasizes pre-college programs for Alaska Natives and support for undergraduate research.

The INBRE network includes students and faculty from lead and partner campuses, government laboratories, K-12 sites, tribal organizations and tribally-controlled health corporations. The INBRE funds student stipends for summer research experiences and other undergraduate research opportunities to build and support the pipeline leading toward health careers for Alaska Native students. The Alaska INBRE supports the Alaska Native Science and Engineering Program (ANSEP) to integrate outreach, recruitment, retention, and placement strategies to promote success in college and encourages graduate study.

*Results:* ANSEP has increased retention rates of Native Americans in engineering programs (73% vs. national average 27%).

## **NATIONAL EYE INSTITUTE (NEI)**

The mission of the National Eye Institute (NEI) is to conduct and support research, training, health information dissemination, and other programs with respect to blinding eye diseases, visual disorders, mechanisms of visual function, preservation of sight, and the special health problems and requirements of the blind.

### **Amblyopia in Astigmatic Children - Development & Treatment**

*Project Type:* Research

*Population:* Native American - Tohono O'odham Nation

*Description:* This research project is investigating the development of astigmatism and astigmatism-related amblyopia in young children. The Tohono O'odham Nation has a high prevalence of astigmatism, allowing large-scale studies of the development of these visual disorders, which should aid in the development of improved guidelines for treatment and prevention.

*Results:* It was observed that overall prevalence of astigmatism is greater in the Tohono O'odham children than in non-Native American populations. Also, spectacle correction during the preschool years results in a significant improvement in best-corrected letter recognition acuity in astigmatic children by the time they reach kindergarten.

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*Publication/Reference:* Harvey EM, Dobson V, Miller JM, Schwiegerling J, Clifford-Donaldson CE, Green TK, Messer DH. Prevalence of corneal astigmatism in Tohono O'odham Native American children six months to eight years of age. *Invest Ophthalmol Vis Sci.* 2011 Jun 21;52(7):4350-5

Harvey EM, Miller JM, Schwiegerling J, Clifford-Donaldson CE, Green TK, Messer DH, Dobson V. Accuracy and validity of IK4 handheld video keratometer measurements in children. *Journal of AAPOS.* 2011 Aug; 15(4):407-9

Harvey EM, Dobson V, Clifford-Donaldson CE, Green TK, Messer DH, Miller JM. Prevalence of astigmatism in Native American infants and children. *Optom Vis Sci.* 2010 Jun; 87(6):400-5

Dobson V, Harvey EM, Clifford-Donaldson CE, Green TK, Miller JM. Amblyopia in astigmatic infants and toddlers. *Optom Vis Sci.* 2010 May; 87(5):330-6

Garvey KA, Dobson V, Messer DH, Miller JM, Harvey EM. Prevalence of strabismus among preschool, kindergarten, and first-grade Tohono O'odham children. *Optometry.* 2010 Apr; 81(4):194-9

**NATIONAL HEART, LUNG AND BLOOD INSTITUTE (NHLBI)**

The National Heart, Lung, and Blood Institute (NHLBI) provides global leadership for research, training, and education programs to promote the prevention and treatment of heart, lung, and blood diseases and enhance the health of all individuals so that they can live longer and more fulfilling lives. The NHLBI stimulates basic discoveries about the causes of disease, enables the translation of basic discoveries into clinical practice, fosters training and mentoring of emerging scientists and physicians, and communicates research advances to the public. It creates and supports a robust, collaborative research infrastructure in partnership with private and public organizations, including academic institutions, industry, and other government agencies. The Institute collaborates with patients, families, health care professionals, scientists, professional societies, patient advocacy groups, community organizations, and the media to promote the application of research results and leverage resources to address public health needs. The NHLBI also collaborates with international organizations to help reduce the burden of heart, lung, and blood diseases worldwide.

**Genetics of Coronary Artery Disease in Alaska Natives (GOCADAN)**

*Project Type:* Research, Educational, Capacity-Building  
*Population:* Alaska Native

*Description:* The goals for GOCADAN are to detect, characterize, and map genes that influence quantitative risk factors for preclinical and overt cardiovascular disease (CVD) in Alaska Eskimos. The detection and mapping of such risk factor genes are a first step in

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predicting risks for individuals and will provide a focus for future efforts to identify these genes.

*Results:* The GOCADAN study will lead to valuable therapeutic and prevention strategies for the Alaska Eskimo and other populations in the US and the world, where the epidemics of obesity, diabetes, and cardiovascular disease are increasing rapidly. Recent study findings support the public health data indicating that despite traditional lifestyles (i.e., substantial physical activity and traditional diets), CVD prevalence, particularly stroke, is high in Alaska Eskimos. Aggressive blood pressure, lipid lowering, and smoking cessation are warranted to reduce this burden. The study continues to focus on quality control of data, systematic surveillance, and identification of potential fatal and non-fatal CVD events. The study also is exploring the potential surveillance of additional villages. Training of community members for research careers is in progress. One Alaska Native physician, who is completing the third year of residency training, presented an abstract and published a paper on a community-based screening study that showed significant differences in mortality rates among minority groups.

*Publication/Reference:* Jolly SE, Eilat-Adar S, Wang H, Mete M, Fabsitz RR, Devereux RB, Ebbesson SO, Umans JG, Howard BV. (2011) Sex-specific associations of nutrition with hypertension and systolic blood pressure in Alaska Natives findings from the GOCADAN study. *Int J Circumpolar Health*. Jun; 70(3):254-65

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**Strong Heart Study - Coordinating Center and Oklahoma Field Center**

*Project Type:* Research, Educational, Capacity-Building

*Population:* American Indian

*Description:* The objectives of the Strong Heart Study (SHS) are to survey cardiovascular disease (CVD) morbidity and mortality rates among three geographically diverse groups of American Indians (AIs) and to estimate their levels of CVD risk factors. Genomics technologies have been integrated with existing SHS genetic data to identify risk factors for obesity, diabetes, and CVD.

*Results:* A total of 4,549 tribal members (ages 45-74 years) from three centers in Arizona, Oklahoma, and the Dakotas participated in the study. As a result of the SHS, the general assumption that AIs are at lower risk of developing CVD compared to the general population has been demonstrated to be incorrect. In addition, the Strong Heart Family Study (SHFS) has expanded upon previous genetic findings, to characterize more thoroughly the various types of CVD and their risk factors, especially in the young. Ninety-four families (3,838 AIs, average age 15 years old) have been re-examined to assess the biological and behavioral CVD risk factors (e.g., demographics, socioeconomic status, smoking, alcohol, medical and reproductive history, diet, depression, stress, trauma, and physical activity by accelerometer, etc.). Furthermore, a continuing effort to maintain morbidity and mortality (M&M) surveillance of the SHS cohort has been expanded to include new CVD events.

The SHS has confirmed that diabetes is a major risk factor for CVD among AIs. Gene-environment investigations have shown that behavioral factors such as alcohol intake, smoking, and socioeconomic factors including level of education, can modify the genetic effects of blood pressure phenotypes. Also, objectively measured data suggest that inactivity may be a problem among AI adults. These results would warrant advocating an increase in physical activity levels in this population.

*Publication/Reference:* Shara, NM., Wang, H., Valaitis, E., Pehlivanova, M., Resnick, HE., Wang, W., Umans, JG. Lee, ET., Howard, BV., Devereux, RB., Wilson., PW.. (2011) Comparison of Estimated Glomerular Filtration Rates and Albuminuria in Predicting Risk of Coronary Heart Disease in a Population with a High Prevalence of Diabetes Mellitus and Renal Disease. *American Journal of Cardiology*, Vol. 107(3): 399-405

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Calhoun, D., Beals, J., Carter EA., Mete M., Welty, TK.. Fabsitz, RR., Lee, ET., Howard, BV. (2010) Relationship between Glycemic Control and Depression among American Indians in the Strong Heart Study. *Journal of Diabetes Complications*, Vol. 24(4): 217-222

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### **Arsenic Exposure, Cardiovascular Disease, and Diabetes in Native Americans**

*Project Type:* Research, Educational, Capacity-Building

*Population:* Native American

*Description:* The objective is to evaluate the association of inorganic arsenic exposure, as determined by the sum of inorganic and methylated arsenic species in urine, and arsenic biotransformation with the risk of cardiovascular disease and diabetes in 4,549 Native Americans who participated in the Strong Heart Study.

*Results:* A total of 1,168 urine samples have been analyzed for urine arsenic species [arsenite, arsenate, methylarsonate (MA), dimethylarsinate (DMA) and arsenobetaine], total arsenic, and metals (i.e., antimony, cadmium, lead, molybdenum, selenium, tungsten, and zinc). An initial analysis showed low-to-moderate inorganic arsenic exposure and confirmed long-term constancy in arsenic exposure and urine excretion patterns in American Indians from three US regions over a 10-year period. Further analysis of 600 samples is in progress to correlate arsenic exposure and cardiovascular and pulmonary health. A recent publication suggests that seafood intake is a major determinant of changes in total arsenic and arsenobetaine in the US population.

*Publication/Reference:* Navas-Acien A, Francesconi KA, Silbergeld EK, Guallar E. (2011) Seafood intake and urine concentrations of total arsenic, dimethylarsinate and arsenobetaine in the US population. *Environ Res.*; 111(1):110-8

### **Tribal College Faculty and Tribal Health Professionals Development Project**

*Project Type:* Training, Educational, Capacity-Building

*Population:* American Indian

*Description:* The purpose of this study is to increase the capacity in basic epidemiology research among tribal college or university faculty and tribal health professionals. The primary objective is to develop and conduct skill-building workshops to enhance research capacity. These skills will be applicable immediately to their current positions in the health field.

This study is a part of the Native American Research Centers for Health NHLBI-Supported Projects. The Indian Health Service and the National Institutes of Health, through the National Institute of General Medical Sciences (NIGMS), established an initiative to support NARCH, which is designed to develop opportunities for conducting research and research training responsive to the needs of Native American communities. NHLBI actively participates in the NARCH funding and currently, through the National Institute of General Medical Science and an agreement with the Indian Health Service, supports many projects.

*Results:* This project began in FY 2010 with an aim to build capacity among the tribal college faculty and tribal health professionals working in health research and other health

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fields. The project helps to foster relationships between academic institutions and tribal communities by providing a forum for collaboration.

**The Prevalence of Congenital Heart Disease in Native Americans in Wisconsin**

*Project Type:* Training Program, Educational, Capacity-Building  
*Population:* American Indian

*Description:* Congenital heart disease is the most common birth defect encountered in Wisconsin and there is evidence that the incidence may be nearly twice the expected rate in Native Americans. This pilot project is aimed at determining the actual rate of congenital heart disease in Native Americans in Wisconsin and to identify possible risk factors. This study is a part of the NARCH family of projects.

*Results:* This project began in FY 2010 and will determine the actual rate of congenital heart disease in Native Americans in Wisconsin and identify possible risk factors.

**Summer Research Training Institute for AI/AN Health Professionals**

*Project Type:* Training Program, Educational, Capacity-Building  
*Population:* American Indian

*Description:* The overall goal of the Summer Research Training Institute for AI/AN Health Professionals is to develop a cadre of highly trained AI/AN biomedical and health researchers who are sensitive to the culture and specific concerns of Indian communities and who can bring the benefits of academic research to these communities to reduce health disparities. This study is a part of the NARCH family of projects.

*Results:* This project began in FY 2010. It offers up-to-date classes on a variety of relevant topics on career advancement in AI/AN health-related research. Assessment of the training needs of AI/AN biomedical and health researchers is in progress.

**Oral Flora, Periodontitis, and Vascular Dysfunction in Young Native Americans**

*Project Type:* Training, Educational, Capacity-Building  
*Population:* American Indian

*Description:* The overall goal of this project is to examine the possible relationship between periodontal disease and vascular disease in American Indians/Alaska Natives ages 21-40 years. Cardiac disease is the leading cause of mortality in adult AI/AN, and the proposed studies may establish a link with prevalent periodontal disease. This study is a part of the NARCH family of projects.

*Results:* This project began in FY 2009 and examines the relationship between gum disease and blood vessel function that leads to hardening of the arteries (atherosclerosis). The complex populations of bacteria that live in the mouth will be characterized and correlated

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with gum disease and vascular dysfunction. The patients with gum disease will be treated and re-evaluated for vascular function and for changes in the bacterial populations. Recruitment is in progress at this time and the study population comprises 200 Native Americans seeking health care at the Indian Health Council. The study will determine if gingivitis or mild/moderate periodontitis is associated with detectable vascular dysfunction.

**NATIONAL HUMAN GENOME RESEARCH INSTITUTE (NHGRI)**

The National Human Genome Research Institute (NHGRI) led the NIH's contribution to the International Human Genome Project, which had as its primary goal the sequencing of the human genome. This project was successfully completed in April 2003. Now, the NHGRI's mission has expanded to encompass a broad range of studies aimed at understanding the structure and function of the human genome and its role in health and disease. Toward that end, NHGRI supports the development of resources and technology that will accelerate genome research and its application to human health. A critical part of the NHGRI mission continues to be the study of the ethical, legal, and social implications (ELSI) of genome research. NHGRI also supports the training of investigators and the dissemination of genome information to the public and to health professionals.

**Web-Based Genomic Research Guide for American Indian and Alaska Native Communities**

*Project Type:* Educational, Capacity-Building  
*Population:* American Indian, Alaska Native

*Description:* NHGRI has funded the National Congress of American Indians Policy Research Center to create a web-based genomic research resource guide about genetics research for American Indian and Alaska Native community members. The goal of this project is to provide Native communities with the tools needed to make their own informed decisions about genetics research. The objectives of the genetics research web-based resource guide are to provide communities basic information on genetics research studies and genetics technologies, assist individuals and communities in making informed decisions about genetics research participation, equip communities to be equal partners in genetics research studies, and effectively regulate genetics research done on their lands. The project also seeks to provide communities with information and tools, including educational materials about genetics/genomics research, existing federal and tribal data sharing policies, model research contracts, tribal research codes, sets of questions to ask related to genetics research, an ethics framework for tribes, and other documents.

*Publication/Reference:* [www.ncai.org](http://www.ncai.org)

### **Summer Workshop in Genomics (Short Course)**

*Project Type:* Training

*Population:* American Indian, Alaska Native

*Description:* This annual program provides training for undergraduate and graduate faculty from diversity-populations-serving institutions. Participants attend six days of lectures, tours, and training at the NIH campus in Bethesda. Participants include faculty from Tribal Colleges and Universities (TCUs). The 2011 Short Course was held July 24-29, 2011. Three of the programs participants were faculty at a TCU in 2011: Salish-Kootinai College, Stone Child College, and Fort Peck Community College.

*Publication/Reference:* <http://www.genome.gov/10000217>

### **Center for Genomics and Healthcare Equality**

*Project Type:* Research Center

*Population:* American Indian, Alaska Native

*Description:* The overall goal of the Center for Genomics and Healthcare Equality is to explore the implications of genomics for medically underserved communities – particularly American Indian and Alaska Native communities. The investigators have developed collaborative relationships with three AI/AN Tribal organizations and with a research center dedicated to Alaska Native health concerns.

## **NATIONAL INSTITUTE ON AGING (NIA)**

The National Institute on Aging (NIA) leads a broad scientific effort to understand the nature of aging and to extend the healthy, active years of life. In 1974, Congress granted authority to form the NIA to provide leadership in aging research, training, health information dissemination, and other programs relevant to aging and older people. Subsequent amendments to this legislation designated the NIA as the primary federal agency on Alzheimer's disease research. The institute's mission is to:

1. Support and conduct genetic, biological, clinical, behavioral, social, and economic research related to the aging process, diseases and conditions associated with aging and other special problems and needs of older Americans
2. Foster the development of research and clinician scientists in aging
3. Communicate information about aging, and advances in research on aging, to the scientific community, health care providers, and the public

## **Telecognitive Assessment: Extending Neuropsychology to Underserved Elders**

*Project Type:* Research

*Population:* American Indian, Alaska Native, Native American - Choctaw Nation

*Description:* Roughly 25% of the US population lives in rural areas, where access to medical specialties may be limited. Unlike other ethnic groups in the US, more than half of the 2.5 million Native Americans live outside of metropolitan areas, and the percentage of elderly Native Americans is predicted to more than double by the year 2050. Telemedicine or videoconferencing technology has been used to extend care in psychiatry and other specialties into rural areas, although long-distance assessment of dementia has received little attention. One of the goals of this NIA project is to use modern telemedicine technology to conduct neurocognitive testing compared with traditional face-to-face examinations in older Native American and non-Native American adults with and without cognitive impairment. NIA-funded investigators will field test procedures in a rural Native American population at a satellite clinic at the Choctaw Nation Healthcare Center in Southeastern Oklahoma, where investigators presently conduct videoconference-based psychiatric interviews and face-to-face neurocognitive examinations.

## **Native Elder Research Center**

*Project Type:* Research, Capacity-Building

*Population:* American Indian, Alaska Native, Native American

*Description:* The University of Colorado Denver and Health Sciences Center's Native Elder Research Center (NERC) is an NIA Resource Center on Minority Aging Research (RCMAR). Programmatic aims include:

1. Expanding partnerships with AI/AN/NA communities to ensure continuous access and involvement of Native elders, their families, and local systems of care in the aging research process
2. Preparing AI/AN/NA investigators for successful research careers at the interface of aging, health, and culture and to reduce differentials in health status

Community liaison activities continued in FY 2011. The project investigators were able to expand from 16 to 18 local Offices of TeleHealth and TeleEducation (Sinte Gleska University and Rosebud Tribal Veterans Program/Rosebud Sioux Tribe, Mission and Rosebud, SD; Oglala Community School, Oglala Sioux Tribe, Pine Ridge, SD; Seattle Indian Health Board, Seattle, WA; Mary Conrad Long-Term Care Center, Providence Health Systems/Cook Inlet Regional Corporation, Anchorage, AK; White River Nursing Skilled Care/Assisted Living Center, Rosebud Sioux Tribe, White River, SD; IHS Service Unit and Morning Star Manor Skilled Care Facility, Shoshone Tribe, Ft. Washkie, WY; Veterans Center/Readjustment Counseling Services, DVA, Navajo Nation, Chinle, AZ; Blackfeet IHS Service Unit, Browning, MT; Fort Peck Indian Reservation, Poplar, MT; Blackfeet Indian Reservation, Browning, MT; Chippewa/Cree Nation, Rocky Boy, MT; Salish/Kootenai Indian Reservation, Flathead, MT; Crow Nation IHS Service Unit, Lodgepole, MT), which integrate local IHS and Veterans Health Administration services.

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Project investigators also were able to pursue aging-related educational and research activities through real-time videoconferencing at these sites.

The project supported the 22nd Annual IHS Research Conference in Portland, OR; "Navajo Nation Human Research Review Board Conference" in Window Rock, AZ; and the "Alaska Native Research Conference" in Anchorage, AK. All conferences featured sessions on aging-related research presented by NERC/RCMAR faculty and/or Native investigators. Of special note, Native investigators co-organized and chaired the IHS Research Conference and chaired the Alaska Native Research Conference.

Lastly, NIA's collaboration with the Division of Diabetes Treatment and Prevention, Indian Health Service, specifically the Special Diabetes Program for Indians' Competitive Grant Program, which began with supplemental funding to the NERC/RCMAR in PGY-08, continues to grow. Two of the Native investigators in the current cohort used data from this project to fulfill their secondary data analytic projects. A third Native investigator received a two-year research grant from the National Institute on Minority Health and Health Disparities (NIMHD) to conduct a randomized control trial of a health information technology-based intervention to reduce cardiovascular disease among at-risk members of two urban Indian communities (Denver, CO and Albuquerque, NM). This investigative team presently enjoys strong working relationships with 66 grantees, representing 112 reservations, urban Indian programs, and villages.

*Publication/Reference:* Buchwald D and Dick RW (2011). Weaving the Native web: using social network analysis to demonstrate the value of a minority career development program. *Academic Medicine: Journal of the Association of American Medical Colleges.* 86 (6):778-86

### **Arizona Alzheimer's Disease Core Center**

*Project Type:* Research

*Population:* American Indian and Native American: Zuni Elderly Program, Navajo Nation and associated caregiver programs, Tohono O'odham Nation, Hopi Tribe, White Mountain Apache Tribe, San Carlos Apache Tribe, Camp Verde Apache Tribe, Colorado River Indian Community, Gila River Indian Community, Ft. McDowell Indian Community, Ak-Chin Indian Community, Pascua Yaqui Tribe, Prescott Yavapai Tribe, Hualapai Tribe, and Salt River Pima Maricopa Indian Community

*Description:* The Banner Alzheimer's Institute conducts outreach activities to:

1. Increase knowledge and awareness about dementia for Native American communities throughout Arizona for both community members and health care workers
2. Work with selected tribes to develop further education, outreach, and research plans designed in collaboration with American Indian/Alaska Native groups.

*Publication/Reference:* Cascelli RJ et.al. (2011). Cerebrovascular risk factors and preclinical memory decline in healthy APOE ε4 homozygotes. *Neurology* 76 (12):1078-84

**NATIONAL INSTITUTE ON ALCOHOL ABUSE AND ALCOHOLISM (NIAAA)**

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) provides leadership in the national effort to reduce alcohol-related problems by:

1. Conducting and supporting research in a wide range of scientific areas including genetics, neuroscience, epidemiology, health risks and benefits of alcohol consumption, prevention, and treatment
2. Coordinating and collaborating with other research institutes and federal programs on alcohol-related issues
3. Collaborating with international, national, state, and local institutions, organizations, agencies, and programs engaged in alcohol-related work
4. Translating and disseminating research findings to health care providers, researchers, policymakers, and the public

### **Genetic Influences on Alcoholism Vulnerability in American Indians**

*Project Type:* Research

*Population:* Alaska Native, American Indian - Plains Indians and Southwestern Tribes

*Description:* The aims of the project are to:

1. Identify genetic factors contributing to alcoholism and related problems
2. Identify gene-environment interactions
3. Understand the effects of genes on intermediate phenotypes mediating risk of alcoholism
4. Define efficacy of naltrexone in an Alaska Native tribe

*Results:* In these studies on American Indian populations over two decades, there have been significant discoveries in all four of the areas identified above, and these results have been reported in high profile journals. On the epidemiologic side, the independent negative role of binge drinking was elucidated. A powerful impact of early trauma on alcoholism risk was found, despite the high prevalence of alcoholism, in two American Indian tribes. Gene by environment interaction of early trauma with specific functional genetic variants including a variant of the monoamine oxidase gene was found to increase the risk of alcoholism and related problems.

A short questionnaire was validated for screening for alcoholism. On the genetic/genomic side, the first whole genome linkage study in American Indians (in 1988) identified the effects of genes on chromosome 4, both GABAA (benzodiazepine) receptors and alcohol metabolic genes that have been replicated and extended to other populations. Recently, study of genetically influenced differences in the Plains Indian tribe in Western Oklahoma led to the discovery, by family linkage, of an influence of a stress related gene, CRHBP, in an alcoholism-related EEG trait as well as alcoholism itself (Enoch et al). This was followed by a genome-wide association study which detected several genome-wide

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significant loci influencing the EEG (Hodgkinson et al). One of these, also replicated in Europeans, also influences risk of alcoholism.

*Publication/Reference:* Bletzer KV, Yuan NP, Koss MP, Polacca M, Eaves ER, Goldman D. Taking humor seriously: talking about drinking in Native American focus groups. *Med Anthropol.* 2011 May; 30(3):295-318

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Ducci F, Enoch MA, Yuan Q, Shen PH, White KV, Hodgkinson C, Albaugh B, Virkkunen M, Goldman D. HTR3B is associated with alcoholism with antisocial behavior and alpha EEG power--an intermediate phenotype for alcoholism and co-morbid behaviors. *Alcohol.* 2009 Feb; 43(1):73-84

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Liu J, Zhou Z, Hodgkinson CA, Yuan Q, Shen PH, Mulligan CJ, Wang A, Gray RR, Roy A, Virkkunen M, Goldman D, Enoch MA. Haplotype-based study of the association of alcohol-metabolizing genes with alcohol dependence in four independent populations. *Alcohol Clin Exp Res.* 2011 Feb; 35(2):304-16

O'Malley SS, Robin RW, Levenson AL, GreyWolf I, Chance LE, Hodgkinson CA, Romano D, Robinson J, Meandzija B, Stillner V, Wu R, Goldman D. Naltrexone alone and with sertraline for the treatment of alcohol dependence in Alaska Natives and non-Natives residing in rural settings: a randomized controlled trial. *Alcohol Clin Exp Res.* 2008 Jul; 32(7):1271-83

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Yuan NP, Eaves ER, Koss MP, Polacca M, Bletzer K, Goldman D. "Alcohol is something that been with us like a common cold": community perceptions of American Indian drinking. *Subst Use Misuse*. 2010 Oct; 45(12):1909-29

**Prenatal Alcohol and SIDS and Stillbirth (PASS) Network**

*Project Type:* Research

*Population:* American Indian of the Northern Plains - Spirit Lake and Oglala Sioux Tribes

*Description:* The Safe Passage Study, conducted by the PASS Network and funded by NICHD, NIAAA, and NIDCD, is a collection of community-based studies investigating the role of prenatal alcohol exposure in the risk for Sudden Infant Death Syndrome (SIDS) as well as the risk of adverse pregnancy outcomes, including stillbirth and Fetal Alcohol Spectrum Disorders (FASD). Information gained will help towards the reduction of fetal and infant mortality and will improve child health in communities at high risk for prenatal alcohol exposure.

*Results:* Established in 2003, the PASS Network continues enrollment of approximately 12,000 pregnant women from high-risk populations for prenatal alcohol exposure, SIDS, stillbirth, and FASD in a prospective study, with follow-up of their infants to one postnatal year. The PASS Network is interested in information on exposures (alcohol, tobacco, and drugs) during the prenatal period, fetal physiological development, infant neurobehavioral measures, maternal and infant genetic factors, infant hearing, and EEG. Epidemiological analyses will occur at completion of enrollment.

*Publication/Reference:* Odendaal HJ, Elliott A, Kinney HC, Human M, Gaspar D, Petersen D, Randall B, Dempers J; Prenatal Alcohol and SIDS and Stillbirth (PASS) Network. Consent for autopsy research for unexpected death in early life. *Obstet Gynecol*. 2011 Jan; 117(1):167-71

Dempers J, Wade SA, Boyd T, Wright C, Odendaal HJ, Sens MA; Prenatal Alcohol and SIDS and Stillbirth (PASS) Network. Hepatic hemangioendothelioma presenting as sudden unexpected death in infancy: a case report. *Pediatr Dev Pathol*. 2011 Jan-Feb; 14(1):71-4

**Prenatal Alcohol Consumption among Native American Women in San Diego County**

*Project Type:* Research

*Population:* American Indian - Southern California Tribes

*Description:* This study will examine the effectiveness of two methods of screening, brief intervention, and referral for risky alcohol consumption among Native American women who are or have the potential to become pregnant. The study will test if either culturally-adapted web-based or peer-counseling methods are superior to treatment as usual.

*Results:* The web-based screening and intervention tool has been adapted through a recursive process of key informant interviews, focus groups, and pilot testing with the local

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population. The web-based screening and intervention protocol has been implemented in the two Indian Health Clinic settings in 2011. To date, 119 women of reproductive age have been recruited and baseline data collected. Of these, 16 are pregnant. Plans are to complete recruitment of the web-based intervention sample in 2011, and initiate the peer based health educator model in 2012.

**Prevention Trial in the Cherokee Nation: Interactive Effects of Environment & SBI**

*Project Type:* Research

*Population:* American Indian, Cherokee Nation

*Description:* This project conducted and evaluated a community-level intervention to prevent underage drinking and negative consequences among American Indian and white youth in rural, high-risk communities in Northeastern Oklahoma. The study utilized community environmental change and brief intervention and referral approaches that will be evaluated alone and in combination.

**Preventing Underage Drinking by Southwest California Indians**

*Project Type:* Research, Capacity-Building

*Population:* American Indian - Southern California Mission Indian Reservations

*Description:* The goal of the project is to reduce underage drinking among Native American reservation dwelling youth. The community-based environmental prevention program will focus on:

1. Reducing underage access to alcohol
2. Preventing underage drinking and driving through enhanced enforcement
3. Individual level interventions including screening and brief interventions

*Results:* Two hundred in-clinic surveys have been completed and analyzed. A survey of 36 Native American tribal leaders found that:

1. A substantial proportion of reservation youth would accept Motivational Interviewing (MI) for behavior change (but few are actually ready to engage)
2. MI intervention is well-suited to prevent underage drinking in this youth population. Project materials for checking on sales to individuals who appear to be underage and training of reservation police departments are ready. Baseline data to use for post interventions comparisons have been collected. A culturally-tailored brief intervention to reduce drinking and its associated consequences in youth is underway

*Publication/Reference:* Gilder, David A., Juan A. Luna, Daniel Calac, Roland S. Moore, Peter M. Monti, Cindy L. Ehlers (2011), Acceptability of the use of Motivational Interviewing to reduce underage drinking in a Native American community, *Substance Use & Misuse*, 46(6):836-842. PMID: PMC3075848 [Available on 2012/1/6]

Friese, Bettina, Joel W. Grube, Steve Seninger, Mallie J. Paschall, and Roland S. Moore, (2011) Drinking Behavior and Sources of Alcohol: Differences between Native American

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and White Youth, *Journal of Studies on Alcohol and Drugs*, 72(1):53-60. PMID: PMC3001681 [Available on 2012/1/1]

Moore, Roland S. and Benson, Peter (2011). Writing NIH Proposals about Culture and Health: Understanding New Guidelines, *Society for Medical Anthropology Section Column*, *Anthropology News*, 52(4):40

### **Risk Factors for Alcoholism in Native Americans**

*Project Type:* Research

*Population:* Native American - Mission Indians in San Diego County

*Description:* These studies are aimed at identifying risk and protective factors related to alcohol dependence in reservation-dwelling Mission Indians. They are studying the genetic, clinical, and neurobehavioral factors related to alcohol abuse. The identification of factors associated with risk for alcohol dependence should guide the development of tailored intervention programs.

*Results:* The findings suggest that Mission Indians have a distinct cluster of biological and behavioral risk factors for alcohol dependence. The results demonstrate that initiation of alcohol use during adolescence is particularly malignant for Mission Indians. These studies have demonstrated a unique course of alcoholism and comorbidity as well as an identifiable cluster of genetic risk factors for alcoholism. Unique endophenotypes have been identified and several chromosome regions have been linked to alcohol dependence phenotypes as well as other co-morbid disorders.

*Publication/Reference:* Ehlers CL, Gilder DA, Gizer IR, Wilhelmsen KC. Heritability and a genome-wide linkage analysis of a Type II/B cluster construct for cannabis dependence in an American Indian community. *Addict Biol* 14(3): 338-348, 2009

Ehlers CL, Gizer IR, Gilder DA, Wilhelmsen KC. Linkage analysis of stimulant dependence, craving, and heavy use in American Indians. *Am J Med Genet B Neuropsychiatr Genet* 156(7): 772-780, 2011

Ehlers CL, Gizer IR, Phillips E, Wilhelmsen KC. EEG alpha phenotypes: linkage analyses and relation to alcohol dependence in an American Indian community study. *BioMedCentral Medical Genetics* 2010, 11:43

Ehlers CL, Phillips E, Gizer IR, Gilder DA, Wilhelmsen KC. EEG spectral phenotypes: heritability and association with marijuana and alcohol dependence in an American Indian community study. *Drug Alcohol Depend*, 15; 106(2-3):101-10, Jan 2010

Gilder DA, Gizer IR, Ehlers CL. Item response theory analysis of binge drinking and its relationship to lifetime alcohol use disorder symptom severity in an American Indian community sample. *Alcohol Clin Exp Res* 35(5): 984-995, 2011

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Gilder DA, Lau P, Ehlers CL. Item response theory analysis of age of first use of cannabis and lifetime cannabis use disorder criteria in an American Indian community sample. *Journal of Studies on Alcohol and Drugs*, 70(6): 839-849, 2009

Gizer IR, Edenberg HJ, Gilder DA, Wilhelmsen KC, Ehlers CL. Association of alcohol dehydrogenase genes with alcohol-related phenotype in a Native American community sample. *Alcohol Clin Exp Res* 2011. In press

### **AI Reservation-Based Fetal Alcohol Spectrum Disorder (FASD) Prevention**

*Project Type:* Research, Capacity-Building

*Population:* American Indian - Red Cliff Band of Lake Superior Chippewa Tribe

*Description:* The researchers seek to reduce drinking and Fetal Alcohol Spectrum Disorder rates among American Indian women of childbearing age in a reservation community. They will assess the relevance, feasibility, and sustainability of evidence-based FASD preventive interventions and select one for adaptation and pilot testing in preparation for a randomized control trial on multiple reservations.

*Results:* The investigators have completed the analysis of initial focus group data to inform the cultural adaption of an evidence-based FASD preventive intervention. They have met with the Community Advisory Board to review the adapted intervention and discuss piloting this intervention on a small scale, modifying the adapted intervention based on results of the pilot work. The CAB selected Choice as the intervention and it is currently being piloted in one community.

### **Family Intervention of Youth AOD in Indian Communities**

*Project Type:* Research, Capacity-Building

*Population:* American Indian - Klamath Tribes (Confederated Tribes of Warm Spring Reservation)

*Description:* The researchers are testing a community-based, culturally appropriate intervention for American Indian youth. The project uses a multiple baseline design and tailors the family interventions to each of three American Indian communities. They are developing resources to address the communities' alcohol and other drug needs in the form of a Family Resource Center at each site.

*Results:* Employing a multiple baseline, the researchers have collected baseline and post-intervention measures and carried out the year-long family intervention at all three tribal sites. The Family Resource Centers had been established for the sites and were in full operation during the intervention phase of the project. Final data analysis is underway.

*Publication/Reference:* Boyd-Ball, A. J. (2003). A culturally responsive, family-enhanced intervention model. *Alcoholism: Clinical and Experimental Research*, 27(8), 1356–1360

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Boyd-Ball, A. J., & Dishion, T. J. (2006). Family-centered treatment for American Indian adolescent substance abuse: Toward a culturally and historically informed strategy. In H. Liddle & C. Rowe (Eds.), *Adolescent substance abuse: Research and clinical advances*. New York: Cambridge University Press

Boyd-Ball, A. J., Manson, S. M., Noonan, C., & Beals, J. (2006). Traumatic events and alcohol use disorders among American Indian adolescents and young adults. *Journal of Traumatic Stress, 19*(6), 937–947

Boyd-Ball, A. J., Light, J. M., Dishion, T. J., & Myers, M. W. (in press). Predicting adolescent substance use trajectories following inpatient treatment in American Indian families. *Journal of Ethnicity in Substance Abuse*

Boyd-Ball, A. J., Véronneau, M.-H., Dishion, T. J., & Kavanagh, K. (under review). Influences of parental monitoring, community monitoring, and exposure to peers who use drugs and engage in problem behavior on early-onset substance use of AI adolescents. *Prevention Science*

### **Research Supplements to Promote Diversity in Health-Related Research**

*Project Type:* Training

*Population:* Underrepresented racial and ethnic groups, including one American Indian post-master student, individuals with disabilities, and individuals from disadvantaged backgrounds

*Description:* This program promotes diversity in the biomedical, behavioral, clinical, and social sciences research workforce by providing support to individuals at the high school, undergraduate, graduate, postdoctoral, and investigator level of their career. Individuals receiving support come from groups that have been shown to be underrepresented in science.

### **Building Bridges: Advancing American Indian/Alaska Native (AI/AN) Substance Abuse Research - A State of the Science and Grant Development Workshop**

*Project Type:* Research Meeting, Capacity-Building

*Population:* American Indian, Alaska Native

*Description:* This project was a collaboration among NIAAA, NIDA, NCI, and OBSSR to hold a meeting for emerging AI/AN researchers and their Tribal partners. The meeting:

1. Showcased state-of-the-science AI/AN substance abuse research
2. Provided expert panelist to identify research needs
3. Provided training and technical assistance in NIH grant writing and partnership development to young investigators and their tribal partners

*Results:* Young investigators continued to work on their applications. Their drafts and NIH applications were submitted for a mock review in October 2011.

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*Publication/Reference:* Scientific presenters are writing manuscripts for a special edition of the American Journal of Drug and Alcohol Abuse (AJDAA).

### **23<sup>rd</sup> Annual Native Health Research Conference**

*Project Type:* Research Meeting, Capacity-Building

*Population:* American Indian, Alaska Native, Native American

*Description:* The 23<sup>rd</sup> Annual Native Health Research Conference was held June 27-30 in Niagara Falls, New York. Individuals who are involved with, and use, health research in Native American communities attended the conference. The conference enhanced the collective ability to advance biomedical, behavioral, and health services research for their benefit. NCCAM staff also held a workshop. The NIAAA presented an invited plenary talk entitled, “Building a Culturally-Supportive Framework for the Indigenous Research Community: Engaging Future Generations of Alcohol Researchers.”

## **NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES (NIAID)**

The mission of the National Institute of Allergy and Infectious Diseases (NIAID) is to conduct and support basic and applied research to better understand, treat, and ultimately prevent infectious, immunologic, and allergic diseases. NIAID research has led to therapies, vaccines, diagnostic tests, and other technologies that have improved the health of millions of people in the US and around the world.

### **Native American Research Centers of Health (NARCH)**

*Project Type:* Research, Training

*Population:* Alaska Native, American Indian

*Description:* NIAID supports two subprojects under the NARCH initiative. The goals of this program are to:

1. Increase the number of Alaska Native and American Indian researchers
2. Strengthen the research capacity of tribal health organizations through partnerships with research-intensive institutions
3. Conduct scientifically sound research, especially that focused on health issues of highest priority to the Alaska Native and American Indian people

The specific aims are to:

1. Provide mentoring for researchers or trainees at the Alaska Native Tribal Health Consortium (ANTHC), including individuals with funded NARCH projects and other potential Alaska Native and American Indian researchers or trainees
2. Develop a research training seminar series specific to the needs of investigators at ANTHC

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3. Enhance/expand the partnership with research intensive institutions, including the University of Alaska at Anchorage (UAA) and other institutions
4. Foster the completion of five scientifically sound research projects related to Alaska Native and American Indian health and health disparities

The NARCH is a collaboration between the Indian Health Service and the NIH via the National Institute of General Medical Sciences. NARCH programs develop the research capacity of Alaska Native and American Indian individuals and organizations by engaging Native people in key research roles and by providing appropriate mentorship and training opportunities.

### **Intramural NIAID Research Opportunities (INRO)**

*Project Type:* Outreach

*Population:* Alaska Native, American Indian

*Description:* This is an outreach program to recruit research trainees from populations underrepresented in biomedical research. INRO marketing includes direct listserv communication and tailored emails to Alaska Native and American Indian intermediaries, such as the American Indian Graduate Center and the National Indian Education Association; print ads (*SACNAS News*, *Winds of Change*, and *Tribal College Journal*); support and presence at key conferences (Society for Advancement of Chicanos and Native Americans in Science, and American Indian Science and Engineering Society); and ongoing relations with American Indian collegiate partners. Of the 171 applications received for INRO 2011, seven were from Alaska Native and American Indian populations. Of those, one attended INRO and subsequently signed on for a research traineeship at NIAID.

### **Natural Phenotypic Diversity of Hepatitis C Virus (HCV) Non-Structural (NS)-3/4A Protease**

*Project Type:* Research

*Population:* Alaska Native, American Indian

*Description:* This study will assess the genetic evolution (mutation) of HCV during natural human infection in untreated and long term, naturally occurring, and chronically infected persons. The Alaska Native and American Indian Peoples cohort will participate in the study.

### **Human and Mouse Antibodies against Influenza Virus**

*Project Type:* Research

*Population:* American Indian, Alaska Native

*Description:* This project will develop a more effective influenza vaccine strategy against seasonal flu changes than the current method. The study will characterize sites on the virus

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that human antibodies induced by vaccination or infection recognize. Antibody responses will be measured in the elderly and in lupus patients.

*Results:* An inverse relationship was observed between antibody levels before and after vaccination. The low frequency of antibody responses may be due to high pre-immunization antibody levels. The study is ongoing and in the future will enroll subjects of various races and ethnicities, including American Indian and Alaska Native.

*Publication/Reference:* Feng J, Gulati U, Zhang X, et al. Antibody quantity versus quality after influenza vaccination. *Vaccine*. 2009 Oct 23; 27(45):6358-62

Gulati U, Keitel WA, Air GM. Increased antibodies against unfolded viral antigens in the elderly after influenza vaccination. *Influenza Other Respi Viruses*. 2007 Jul;1(4):147-56

**University of New Mexico Interdisciplinary Human Papillomaviruses (HPV) Prevention Center**

*Project Type:* Research  
*Population:* American Indian

*Description:* This multi-project study will establish an HPV prevention research center focusing on viral pathogenesis, vaccine design, and the effectiveness of prevention strategies. Study participants will represent general and university populations in New Mexico, including Native American.

**Improvement in Paired Donation Program**

*Project Type:* Research  
*Population:* Native American, Alaska Native

*Description:* This new project will develop a computerized algorithm and new laboratory methods to help end-stage renal disease patients. The algorithm will help willing, but incompatible, living donors find a match with other incompatible donor/recipient pairs.

**Hematopoietic Stem Cell and Cord Blood Transplantation**

*Project Type:* Research  
*Population:* Native American, Alaska Native

*Description:* This new project will identify genetic variations between donors and recipients for hematopoietic stem cell and cord blood transplantation. The study will assess genetic immune factors that impact transplant rejection including the major histocompatibility complex and natural killer cell inhibitory receptor.

### **Interleukin (IL)-21 and Immune Mediated Viral Control**

*Project Type:* Research

*Population:* American Indian, Alaska Native

*Description:* This project will determine the role of the immune mediating protein IL-21 in the immune response to viral infection, specifically influenza. Additionally, the study will assess the age dependent changes in the levels and numbers of IL-21 producing T cells.

*Publication/Reference:* Yi JS, Ingram JT, and Zajac AJ. IL-21 deficiency influences CD8 T cell quality and recall responses following an acute viral infection. *J Immunol.* 2010 Oct 15;185(8):4835-45. Epub 2010 Sep 15

Mackerness KJ, Cox MA, Lilly LM, et al. Pronounced virus-dependent activation drives exhaustion but sustains IFN- $\gamma$  transcript levels. *J Immunol.* 2010 Sep 15; 185(6):3643-51. Epub 2010 Aug 18

### **Montana Wyoming Tribal Leaders Council Native Youth Academy**

*Project Type:* Community Outreach, Educational

*Population:* Native American

*Description:* NIAID's Rocky Mountain Laboratories (RML) hosted the Native Youth Academy of the Montana-Wyoming Tribal Leadership Council for a one-day experiential learning program. This NIAID activity also had participation from the National Institutes of Health Office of the Director, other NIH Institutes/Centers, and the Indian Health Service.

*Results:* Approximately 100 Native American middle school students, clan leaders, teachers, and chaperones from Montana and Wyoming reservations came to RML for the program. The program consisted of laboratory activities for students as well as presentations on NIH educational, outreach, training, and employment programs for the adults. The students enjoyed dissecting a fetal pig and learning about second hand smoke, while clan leaders appreciated the opportunity to discuss challenges that face schools and educators on reservations. Attendees expressed a strong desire to have the program repeated and expanded. Several students expressed interest in pursuing science in school and as a career.

## **NATIONAL INSTITUTE OF ARTHRITIS AND MUSCULOSKELETAL AND SKIN DISEASES (NIAMS)**

The mission of the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) is to support:

1. Research into the causes, treatment, and prevention of arthritis and musculoskeletal and skin diseases
2. The training of basic and clinical scientists to carry out this research
3. The dissemination of information on research progress in these diseases

## **Understanding Rheumatic Disease in Oklahoma Tribal Members**

*Project Type:* Research

*Population:* American Indian - Chickasaw Nation

*Description:* As part of the NARCH program, sponsored by the IHS, the NIAMS is supporting efforts by the Chickasaw Nation Health System to improve the health status of Native Americans who suffer from rheumatic diseases.

*Results:* Preliminary results of the study were presented at the American College of Rheumatology's Annual Meeting. They suggest that a tailored approach for diagnosing and treating Native Americans who have rheumatic diseases might be beneficial.

*Publication/Reference:* Gaddy, Jasmine R., Dedeker, Amy B., Klein, Wendy, Mota, Fabio, Cooper, Tina, Khan, M. Sohail, et al; Rheumatic Diseases among Oklahoma Tribal Populations. *Arthritis Rheum* 2010; 62 Suppl 10:780 DOI: 10.1002/art.28548 (<http://www.blackwellpublishing.com/acrmeeeting/abstract.asp?MeetingID=774&id=89430>)

## **Summer Internship Program and Post-Baccalaureate Fellows Program**

*Project Type:* Training

*Population:* Native American

*Description:* Through its Summer Internship Program and Post-Baccalaureate Fellows Program, NIAMS exposes talented students from underprivileged backgrounds to basic elements of research in NIAMS disease areas, in combination with science education, training, and mentoring. Staff promote the program at various meetings, including the American Indian Science and Engineering Society (AISES) Annual Conference.

## **Patty Iron Cloud Program for the National Youth Initiative for Biomedical Research**

*Project Type:* Training

*Population:* Native American

*Description:* NIAMS participated in planning the Patty Iron Cloud Program for the National Youth Initiative for Biomedical Research (sponsored by NIMHD).

## **Trans-NIH American Indian and Alaska Native Health Communications and Information Work Group**

*Project Type:* Community Outreach

*Population:* Native American

*Description:* The Trans-NIH American Indian and Alaska Native Health Communications and Information Work Group, led by NIAMS, coordinates efforts to develop and disseminate health information targeting AI/AN communities. It partners with the IHS to

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disseminate quarterly NIH information kits to approximately 1600 Community Health Representatives.

*Results:* Since the inception of the project in January 2008, the NIH has sent more than 8000 information kits to Community Health Representatives in the areas of arthritis, bone health, cancer diagnosis and treatment, diabetes, drug abuse prevention, heart health, physical activity, stroke, and sudden infant death syndrome.

### **Multi-Cultural Outreach Initiative**

*Project Type:* Community Outreach

*Population:* Native American

*Description:* The NIAMS Multi-Cultural Outreach Initiative helps to address disparities in accessing information about bone, joint, muscle, and skin diseases among minority populations, including Native Americans. Its goals are to improve availability of research-based, culturally relevant information; emphasize that better health relies on research; and involve organizations and other agencies.

*Results:* Since the project's inception in 2010, NIAMS established four workgroups with diverse membership that offer guidance in developing and disseminating messages and products for American Indians, Alaska Natives, Native Hawaiians, Other Pacific Islanders, African Americans, Asian Americans, and Hispanics/Latinos. The group addressing Native American needs includes members who are affiliated with the Navajo Nation, Sioux, Klamath Tribes of Oregon, Laguna Tribe in New Mexico, and Alaska Native communities.

## **NATIONAL INSTITUTE OF BIOMEDICAL IMAGING AND BIOENGINEERING (NIBIB)**

The mission of the National Institute of Biomedical Imaging and Bioengineering (NIBIB) is to improve health by leading the development, and accelerating, the application of biomedical technologies. The Institute is committed to integrating the physical and engineering sciences with the life sciences to advance basic research and medical care. This is achieved through:

1. Researching and developing new biomedical imaging and bioengineering techniques and devices to improve fundamentally the detection, treatment, and prevention of disease
2. Enhancing existing imaging and bioengineering modalities
3. Supporting related research in the physical and mathematical sciences
4. Encouraging research and development in multidisciplinary areas
5. Supporting studies to assess the effectiveness and outcomes of new biologics, materials, processes, devices, and procedures
6. Developing technologies for early disease detection and assessment of health status
7. Developing advanced imaging and engineering techniques to conduct biomedical research at multiple scales

### **Ambulatory Cardiac Monitor to Address Heart Disease in American Indian Population**

*Project Type:* Research  
*Population:* American Indian

*Description:* The NIBIB provided support for this Small Business Innovative Research (SBIR) project aimed at developing an ultra low power, wireless, electrocardiograph sensor for ambulatory monitoring of heart disease in American Indians. Improving access to quality diagnostic tools will help to decrease disparities in health outcomes for American Indian populations.

**NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT (NICHD)  
EUNICE KENNEDY SHRIVER**

The *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD) conducts and supports research on all stages of human development, from pre-conception to adulthood. The NICHD pursues activities to address developmental disabilities (intellectual and physical) in order to understand normative processes as well as specific health issues of children, adults, families, and communities, including those involving reproductive health, pregnancy, birth defects, intellectual and developmental disabilities, and medical rehabilitation.

### **Child Policy Fit in Experimental Early Childhood Interventions**

*Project Type:* Research  
*Population:* American Indian

*Description:* The project analyzes data from educational interventions - Oklahoma Pre-K Program - that involve the provision of high-quality child care to infants, toddlers, and preschool children to understand better the diverse effects of such care.

*Results:* Results will enable planners to target existing programs towards subgroups of children for whom they are effective and to guide the redesign of program elements to achieve stronger effects for those subgroups that are not currently receiving adequate education and care in preparation for kindergarten.

### **Promoting Early School Readiness in Primary Healthcare**

*Project Type:* Research  
*Population:* Native American

*Description:* The Video Interaction Project (VIP) leverages the opportunity presented by pediatric primary health care (i.e., universal access to a preschool population and low cost by building on existing infrastructure) to reduce poverty-related disparities through

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promotion of responsive parenting. This continuation will assess the impact of VIP from birth to five years.

*Results:* Findings will have broad public health implications related to the role of pediatric primary health care in the promotion of early child development and school readiness in children at risk due to poverty.

*Publication/Reference:* Mendelsohn, Alan L., et al. Primary Care Strategies for Promoting Parent-child Interactions and School Readiness in At-risk Families: the Bellevue Project for Early Language, Literacy, and Education Success. Arch Pediatr Adolesc Med 2011, 165:33-41

Mendelsohn, Alan L., et al. Randomized Controlled Trial of Primary Care Pediatric Parenting Programs: Effect on Reduced Media Exposure in Infants, Mediated through Enhanced Parent-Child Interaction. Arch Pediatr Adolesc Med 2011, 165:42-8

Tomopoulos, S., Mendelsohn, Alan L., et al. Infant Media Exposure and Toddler Development. Arch Pediatr Adolesc Med, 164:1105-11, Dec 2011

Berkule-Silberman, S.B., Mendelsohn, Alan L., et al. Sources of Parenting Information in Low SES Mothers. Clin Pediatr (Phila), 49:560-8, Jun 2010

Mendelsohn, Alan L., et al., Do Verbal Interactions with Infants during Electronic Media Exposure Mitigate Adverse Impacts on their Language Development as Toddlers? Infant Child Dev, 19:577-593 Nov 2010

### **Brain Imaging and Developmental Follow-up of Infants Treated with Erythropoietin**

*Project Type:* Research

*Population:* American Indian

*Description:* This study uses detailed longitudinal neuro-developmental assessments and state-of-the-art neuro-imaging to evaluate the long-term developmental effects of one promising neuro-protective treatment, erythropoietin, when given in the neonatal period. The focus of the project is to understand better the disorders associated with prematurity through an improved understanding of brain-behavioral relationships.

*Results:* The investigators hope to determine whether erythropoietin is an effective treatment to prevent brain damage associated with prematurity and to lay the groundwork for further studies using principles of neuroplasticity to improve the developmental outcome of premature delivery.

*Publication/Reference:* Lowe, JR., Maclean, PC., Caprihan, A., Ohis, RK., et al. Comparison of Cerebral Volume in children Aged 18-22 and 36-47 Months Preterm and Term, J Child Neurol. 2011  
<http://jcn.sagepub.com/content/early/2011/08/31/0883073811415409>

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Phillips, JP., Montague EQ., Aragon, M., Lowe, JR., Schrader, RM., Ohis, RK., et al. Prematurity Affects Cortical maturation in Early Childhood, *Pediatr Neurol* 2011, 45(4):213-9

Lowe, J., Duval SW., MacLean, PC., Caprihan, A., Ohis, R., et al. Comparison of Structural Magnetic Resonance Imaging and Development in Toddlers Born Very Low Birth Weight and Full-term. *J Child Neurol* 2011, 26(5):566-92

**My Life: Evaluation of Self-Determination Enhancement for Adolescents in Foster Care**

*Project Type:* Research  
*Population:* American Indian

*Description:* The study gathers preliminary data on the feasibility of implementing a self-determination enhancement intervention with youth in foster care and the potential efficacy it has on transition outcomes for this group of at-risk youth. Outcomes, including self-determination, quality of life, employment, mental health, educational achievement, and independent living are assessed.

*Results:* The study will yield important information on the efficacy of the model for all youth exiting the foster care system. Unequivocal data will be provided in regard to whether enhanced self-determination mediates, at least partially, various outcome areas, including mental health, educational achievement, employment, independent living, and quality of life.

**A Randomized Controlled Trial to Improve Teen Driving**

*Project Type:* Research  
*Population:* American Indian

*Description:* The study evaluates an intervention that is designed to provide parents with objective feedback about their teen's driving using in-vehicle monitoring and strategies to improve communication about safety behaviors behind the wheel.

*Results:* If successful, the proposed intervention could be implemented widely to help parents improve the driving skills and safe driving practices of their teen-aged novice drivers. The long range goal of this research is to reduce crashes and related injuries among teen drivers.

### **Pediatric Adverse Drug Reactions in Non-alcoholic Steatohepatitis or NASH**

*Project Type:* Research

*Population:* American Indian, Alaska Native

*Description:* The study is designed to determine the effect of nonalcoholic fatty liver disease (NAFLD) on the major drug metabolizing enzymes and transporters, and whether patients at risk of adverse drug reactions can be identified. The prevalence of NAFLD coincides with the rise in childhood obesity, insulin resistance, and hyperlipidemia.

*Results:* A major goal of individualized medicine is to identify the appropriate dose of a drug that will not elicit an adverse response in susceptible patients. A major factor in determining a safe dose of a drug is the capacity of the patient to metabolize and eliminate that drug from the body.

### **The Effects of Homelessness Interventions on Child Outcomes**

*Project Type:* Research

*Population:* Native American

*Description:* Piggy-backing on a Housing and Urban Development-funded study, the effects of housing and service interventions on the health and development of 0 to 15 year-old children are studied in 2400 homeless families that were randomized to receive ongoing housing subsidies, community-based rapid re-housing, transitional housing, or usual care.

*Results:* The results from the study will help to develop models that help to explain the relationship between environmental circumstances and child outcomes among extremely disadvantaged children and will inform policy and practice about how interventions to help homeless families affect children.

### **Impact of the P479L Variant in Carnitine Palmitoyltransferase (CPT1A) on Infant Mortality in Alaska**

*Project Type:* Research

*Population:* Alaska Native

*Description:* The study is designed to investigate whether a sequence variance in carnitine palmitoyltransferase, an enzyme involved in mitochondrial fatty acid oxidation, is a risk factor for infant death. Alterations of energy metabolism resulting from CPT1 dysregulation affect insulin sensitivity, appetite regulation, and other critical functions linked to fatty acid metabolism.

*Results:* The results of this study will aid in the development of evidence-based guidelines for the treatment of Alaska Native infants diagnosed with CPT1A deficiency by newborn screening.

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*Publication/Reference:* Gillingham, MB, Hirshfeld, M., Matem, D., Shoemaker, J., Lambert, WE, and Koeller, DM, et al. Impaired fasting tolerance among Alaska Native children with a common carnitine palmitoyltransferase 1A sequence variant. *Molecular Genetics and Metabolism* June 2011  
<http://www.sciencedirect.com/science/article/pii/S1096719211002046>

Gessner, BD, Gillingham, MB, Birch, S., Wood, T., and Koeller, DM. Evidence for an Association between Infant Mortality and a Carnitine Palmitoyltransferase 1A Genetic Variant. *Pediatrics* 2011, 126(5):945-51

### **Brain and Behavior Indexes of the Arithmetic Organization in Bilinguals**

*Project Type:* Research  
*Population:* American Indian

*Description:* The study uses a direct measure of electrical brain activity and behavioral assays to uncover how arithmetic facts are represented and accessed for multiple bilingual formats – digits and number words in each language – as well as to understand the nature of the underlying cognitive and neural processes within each language.

*Results:* Learning more than one language alters behavior and the structural and functional organization of the brain, with changes extending beyond the realm of language. Accordingly, elucidating the basis of performance differences observed across a bilingual's languages will help to inform models of language and arithmetic more generally, which ultimately can inform our understanding of impaired processing in childhood learning disabilities, such as dyscalculia, as well as to improve teaching and testing methodologies, taking into account differential processing strategies for bilinguals and monolinguals alike.

### **Evolved Placental Response to Hypoxia**

*Project Type:* Research  
*Population:* Native American

*Description:* The project aims to discover placental genes that specifically evolved to protect babies *in utero* from the consequences of insufficient oxygen in the placenta. The approach includes tests designed to reveal the degree to which genes have been under selective pressure, permitting the isolation of effects due to ancestry versus environment.

*Results:* The study potentially will enable the development of clinical tests that can detect when babies *in utero* are not growing normally as well as to design therapies to improve their growth and long-term health. Additionally, the translational promise of the proposed study is that it may allow the identification of the adaptive evolutionary responses to hypoxic stress that can then be evaluated for therapeutic relevance in the treatment of pathological conditions at sea level.

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*Publication/Reference:* Illsley, NP, Caniggia, I and Zamudio, S. Placental Metabolic Reprogramming: Do Changes in the Mix of Energy-generating Substrates Modulate Fetal Growth? Int J Dev Biol 2010, 54:409-19

Zamudio, S., et al. Hypoglycemia and the Origin of Hypoxia-Induced Reduction in Human Fetal Growth. PLoS Med 2010, 1:e8551

### **Perinatal Assessment of At-Risk Populations**

*Project Type:* Research

*Population:* American Indian

*Description:* The studies focus on testing healthy term and at-risk, prematurely born infants in response to physiological challenges associated with changes in sleep state, sleep positions, and orthostatic tilt. The objectives are to elucidate physiological mechanisms that underlie SIDS and to develop non-invasive tests that will identify infants at greatest risk.

*Results:* The studies are critical to carrying out a program of research to develop non-invasive assessment tools, grounded in known physiological mechanisms in infants at greatest risk for SIDS and other developmental disorders. It is predicted that altered pattern of electrocortical synchrony will be associated with adverse prenatal exposures, both in premature infants and in the high risk sample from the Northern Plains.

*Publication/Reference:* Tarullo, AR, Balsam, PD, Fifer, WP, Sleep and Infant Learning. Infant Child Dev, 2011 40:35-46

Fifer, WP, et al., Newborn Infants Learn During Sleep, Proc Natl Acad Sci (USA), 2010 107:10320-3.

Sahni, R., Schulze, KF, Ohira-Kist, K., Dashyp, S., Myers, MM, and Fifer, WP. Interactions among Peripheral Perfusion, Cardiac Activity, Oxygen Saturation, Thermal Profile and Body Position in Growing Low Birth Weight Infants. 2010 99:135-9

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### **Healthy Native Babies Project**

*Project Type:* Outreach

*Population:* Native American

*Description:* The project focuses on providing Sudden Infant Death Syndrome (SIDS) risk-reduction messages to American Indians and Alaska Natives in the Northern Tier of the US using culturally and regionally appropriate training and outreach materials, including a national brochure and flyer and a workbook to assist with community-based SIDS risk-reduction outreach.

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*Results:* Community-based SIDS risk-reduction outreach. Ultimately a decrease in the Native American infant mortality rate due to SIDS is anticipated.

**Prenatal Alcohol and SIDS and Stillbirth (PASS) Network: The Safe Passage Study**

*Project Type:* Research

*Population:* American Indian, Alaska Native - Northern Plains Indian Communities

*Description:* This study, funded by the National Institute on Deafness and Other Communication Disorders (NIDCD), is supported under the PASS Research Network, includes auditory tests of brainstem function and focuses on deficits in auditory conduction and neural processing as well as their association with maternal alcohol intake prenatally and other possible risk factors.

*Results:* The study will help to improve prevention and intervention strategies that can, in turn, improve the future health and lives of high-risk newborns in American Indian populations as well as increase knowledge about the importance of hearing screening. The improved prevention and intervention strategies can also help to ensure improved communication, occupational, and financial outcomes of children from economically disadvantaged groups. The PASS Research Network, which is conducting the study, is jointly funded by NICHD, NIAAA, and NIDCD.

**Biomedical/Biobehavioral Research Administration Capacity Development (BRAD) Program**

*Project Type:* Capacity-Building

*Population:* Native American, Alaska Native

*Description:* The program provides training in NIH policies and procedures through distance learning and an NIH Residency Training Program. Additionally, funds are provided to strengthen existing or facilitate the establishment of new research administration infrastructures such as Offices of Sponsored Projects (ORSP) or components of such entities.

*Results:* The BRAD program is designed to assist institutions to develop research support infrastructures that will enable the thorough oversight and administrative management of extramural grant awards, foster and facilitate ongoing research activities at the institution, and support entities that serve as the main organizational unit for the technical development of grant proposal submissions and oversight.

**NATIONAL INSTITUTE ON DEAFNESS AND OTHER COMMUNICATION DISORDERS (NIDCD)**

The mission of the National Institute on Deafness and Other Communication Disorders (NIDCD) is to conduct and support biomedical research, behavioral research, and research training in the

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normal and disordered processes of hearing, balance, smell, taste, voice, speech, and language. The institute also conducts and supports research and research training related to disease prevention and health promotion, addresses special biomedical and behavioral problems associated with people who have communication impairments or disorders, and supports efforts to create devices that substitute for lost or impaired sensory and communication function.

**Prenatal Alcohol and SIDS and Stillbirth (PASS) Network**

*Project Type:* Research

*Population:* Northern Plains Indian Communities

*Description:* Hearing loss is one of the most common birth disorders in the US, and American Indians are two times more likely to have hearing loss and otitis media (infection of the middle ear) than Caucasians and four times more likely than other groups. Hearing loss has great cultural impact to American Indians due to their reliance on using oral communication for the transfer of knowledge by elders to the tribe. Alcoholism is one of the most significant public health problems for American Indians. American Indians also have some of the highest rates of fetal alcohol spectrum disorders in the Nation. These effects can include physical problems and problems with behavior and learning, including birth defects, vision and hearing problems.

The Safe Passage Study, which is being conducted by the PASS Research Network, with joint funding by NICHD, NIAAA, and NIDCD, includes American Indian populations. This NIDCD-funded study includes auditory tests of brainstem function. While not a true hearing assessment program, these tests may reveal deficits in auditory conduction and neural processing as well as their association with maternal alcohol intake prenatally and other possible risk factors. The study will help also to:

1. Improve prevention and intervention strategies that can improve the future health or lives of these high-risk newborns in American Indian populations
2. Increase knowledge about the importance of hearing screening and follow-through for under-represented groups, to ensure improved communication, occupational, and financial outcomes for these children

**NATIONAL INSTITUTE OF DENTAL AND CRANIOFACIAL RESEARCH (NIDCR)**

The mission of the National Institute of Dental and Craniofacial Research (NIDCR) is to improve oral, dental, and craniofacial health through research, research training, and the dissemination of health information. The NIDCR accomplishes its mission by:

1. Performing and supporting basic and clinical research
2. Conducting and funding research training and career development programs to ensure an adequate number of talented, well-prepared and diverse investigators
3. Coordinating and assisting relevant research and research-related activities among all sectors of the research community
4. Promoting the timely transfer of knowledge gained from research and its implications for health to the public, health professionals, researchers, and policy-makers

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The Center for Native Oral Health Research at the University of Colorado, Denver, was funded by NIDCR to study several aspects of Early Childhood Caries (ECC) and other aspects of American Indian/Alaska Native oral health. Early childhood caries prevalence varies widely, from 1% to 85% of children depending on diagnostic criteria, teeth examined, age, race, ethnicity, socioeconomic status (SES), and fluoride exposure. Historically, one of the groups most severely affected is American Indians/Alaska Natives. The consequences of ECC can be dramatic. When left untreated, ECC can become painful, resulting in altered chewing, eating, and sleeping patterns in addition to potential growth restrictions. Severe ECC frequently requires extensive treatment under general anesthesia.

**Promoting Behavioral Change in American Indian Mothers and Children**

*Project Type:* Research

*Population:* American Indian - Northern Plains

*Description:* This randomized controlled trial will test the effectiveness of motivational interviewing to prevent Early Childhood Caries. The intervention will be conducted in collaboration with the American Indian community to assure the development of culturally appropriate educational and health promotional materials that emphasize the value of family oral health from birth.

**Preventing Caries in Preschoolers: American Indian Head Start Programs**

*Project Type:* Research

*Population:* American Indian - Navajo Nation

*Description:* This trial will test the effectiveness of an oral health promotion program delivered by community oral health workers in the Head Start setting to prevent Early Childhood Caries. In addition to evaluating the impact on ECC, the study will examine family changes in oral health knowledge, attitudes, and behaviors.

**Periodontal Disease Prevention and Control in American Indian and Alaska Native Adolescents**

*Project Type:* Research

*Population:* American Indian, Alaska Native

*Description:* This study is generating pilot data for a future behavioral intervention trial to improve the periodontal health of adolescents with Type 2 diabetes. Both of these associated diseases are increased in AI/AN populations. The study participants are urban-dwelling AI/AN adolescents living in Denver, Colorado who are at high risk for Type 2 diabetes and periodontitis.

### ***Streptococcus Mutans* and Dental Caries in Native American Children**

*Project Type:* Research

*Population:* American Indian, Northern Plains

*Description:* This prospective study is identifying risk factors for Early Childhood Caries (ECC) and determining if *Streptococcus Mutans* alone or in combination with environmental factors increases the risk of ECC. This research project will provide valuable information on the acquisition of bacteria-causing dental decay among American Indian children.

### **Prevention of Adult Caries (PACS)**

*Project Type:* Research

*Population:* American Indian - Navajo Nation

*Description:* This randomized, multi-center, placebo-controlled, Phase III clinical trial was designed to test the efficacy of chlorhexidine dental coating to reduce new dental caries of adults. One of the four participating centers is a dental clinic within a Native American Health Care Corporation, the Tuba City Regional Health Care Corporation, in Tuba City, Arizona.

*Results:* Study results were presented to the Native American Health Care Corporation and the Navajo Nation Human Research Review Board.

## **NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES (NIDDK)**

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) conducts and supports research on many chronic and costly diseases affecting the public health. Several diseases studied by the NIDDK are among the leading causes of disability and death in the Nation; all affect seriously the quality of life of those suffering from them. The strategic vision that guides NIDDK is improved health and quality of life for all Americans, through basic and clinical research to address the diseases and disorders within the Institute's statutory research mandate. A number of diseases and disorders that disproportionately impact the health of racial/ethnic minority populations in the US receive high priority in NIDDK research areas. These include diabetes, obesity, nutrition-related disorders, hepatitis C, sickle cell disease, and kidney diseases. The NIDDK will continue to support research and to encourage specific efforts in these areas of health disparity in order to advance the foundation of knowledge in the biomedical sciences.

### **National Diabetes Prevention Program (DPP)**

*Project Type:* Research

*Population:* American Indian, Alaska Native, Native American

*Description:* The NIDDK-led landmark Diabetes Prevention Program (DPP) clinical trial was designed and conducted in collaboration with IHS to ensure that American Indians were well represented in the study cohort. As a result, the benefits of the DPP drug (metformin) and lifestyle interventions for preventing diabetes were established to be equally as effective in American Indians as in the DPP cohort as a whole. This was a significant finding in a population that is at extremely high risk for developing Type 2 diabetes. The IHS continues to work with NIDDK to enhance the DPP follow-up study, the DPP Outcomes Study (DPPOS), and DPP translational efforts.

### **Diabetes Mellitus Interagency Coordinating Committee (DMICC)**

*Project Type:* Research

*Population:* American Indian, Native American

*Description:* The Diabetes Mellitus Interagency Coordinating Committee (DMICC), chaired by NIDDK, and of which IHS is a member, helps facilitate coordination of federal diabetes research. In 1997, Congress established the Special Diabetes Program for Indians (SDPI), administered by IHS, to address the growing problem of diabetes in those communities. Participation as a DMICC member organization has provided IHS with valuable input for this important program. This involvement also ensured that these communities were provided opportunities to participate in the design of clinical trials and to participate in efforts to translate research findings to the real world by other DMICC member organizations. In addition, collaboration with NIDDK helped IHS to establish and implement targeted demonstration projects aimed at diabetes prevention and cardiovascular disease risk reduction in American Indian groups.

### **Action for Health in Diabetes (Look AHEAD)**

*Project Type:* Research

*Population:* American Indian, Alaska Native, Native American

*Description:* The purpose of Look AHEAD is to assess the long-term health impact of interventions designed to achieve and sustain weight loss over the long-term. The Action for Health in Diabetes (Look AHEAD) Clinical Trial includes a Southwest American Indian clinical center at the NIDDK Phoenix Epidemiology and Clinical Research Branch in Arizona.

## **Type 2 Diabetes in Adolescents and Youth (TODAY)**

*Project Type:* Research

*Population:* American Indian, Native American

*Description:* The purpose of TODAY is to identify the best treatment for Type 2 diabetes in children and teens, with a focus on minority youth. Seventy-eight percent of the TODAY cohort is comprised of individuals from racial/ethnic minority groups. The study began recruitment in May 2004, recruitment was completed in November 2009, and the intervention phase will continue through November 2011. The participants average 14 years of age, all had diabetes for less than two years at the time they entered the study, and are 22% White, 34% African American, 35% Hispanic, and 5% American Indian.

## **Genetic Determinants of Obesity in Pima Indians**

*Project Type:* Research

*Population:* Pima Indian

*Description:* The Pima Indians of Arizona have the highest prevalence of Type 2 diabetes mellitus of any population in the world. Obesity is also extremely common and several types of analyses in the past decade have indicated that obesity in this population has major genetic determinants. In 2009, a genome-wide association study using over 500,000 single nucleotide polymorphisms was conducted and completed on approximately 1500 members of the Pima Indian population of the Gila River Indian Community in Arizona. Analyses are currently being done to identify regions of the genome that harbor single nucleotide polymorphisms associated with measures of body fat and also to identify differential expression of genes in fatter versus lean members of the population. Combinatorial analyses are also being conducted to identify regions of the genome that have both genotypic and gene expression associations indicating genetic determinants of gene expression that influence body composition.

## **Family Investigations of Diabetes and Nephropathy (FIND)**

*Project Type:* Research

*Population:* American Indian, Native American

*Description:* Family Investigations of Diabetes and Nephropathy (FIND) is carrying out studies to elucidate the genetic susceptibility to kidney disease in patients, especially those with diabetes mellitus. African Americans, Hispanics, and Native Americans appear to have an increased incidence and prevalence of diabetic as well as non-diabetic renal disease, and these populations are particularly targeted in FIND. The major goals of the FIND study are to acquire sets of families, as well as case-control sets, with well-characterized diabetic nephropathy; establish a secure master database; and to localize and identify genes that influence susceptibility to diabetic nephropathy and end stage renal disease (ESRD). FIND recruited European American, African American, Mexican American, and American Indian populations to assess genetic contributions that may be specific to various populations.

## **Diabetic Nephropathy**

*Project Type:* Research

*Population:* Pima Indian, American Indian, Native American

*Description:* The NIDDK has a substantial portfolio of clinical investigation of diabetic nephropathy in Americans Indians, supported through the intramural program. In addition to the portfolio of laboratory intervention, NIDDK also supports several small pilot studies evaluating interventional methods. Several of these clinical studies are evaluating the factors that affect therapeutic response. A randomized study is examining the response to converting enzyme inhibitors.

Another randomized, double-blinded, placebo-controlled clinical trial is underway in Pima Indians to determine whether blockade of the renin-angiotensin system can prevent or attenuate the development and progression of early diabetic kidney disease in Type 2 diabetes. A clinical intervention is underway in Pima Indians to determine if angiotensin-converting enzyme inhibitors are effective in slowing the progression of advanced diabetic kidney disease. State-of-the-art measures of kidney structure and function are being made serially in Pima Indians to identify the factors responsible for the development and progression of diabetic kidney disease. Other research is using proteomic methods to evaluate potential urinary markers of progression.

## **National Diabetes Education Program (NDEP) Multicultural Campaigns**

*Project Type:* Community Outreach, Educational

*Population:* American Indian, Alaska Native, Native American

*Description:* The NIDDK launched the National Diabetes Education Program (NDEP) with the Centers for Disease Control and Prevention in 1997 to change the way diabetes was treated. Since its inception, NDEP has taken a multicultural approach to address its goals of improving diabetes management, treatment, and outcomes for populations disproportionately affected by diabetes, including African Americans, Asian Americans and Pacific Islanders, American Indians and Alaska Natives, and Hispanics/Latinos. NDEP promotes early diagnosis and prevention of diabetes, thus reducing morbidity and mortality associated with the disease. NDEP components include public awareness and education campaigns, special population approaches, community-based interventions, health system changes, and an inclusive partnership network.

## **Prevention and Control of Type 2 Diabetes in the Pima Indians of Arizona**

*Project Type:* Research

*Population:* Pima Indian, American Indian, Native American

*Description:* The NIDDK, community leaders, and community members have developed and produced several health education materials to promote the message that diabetes can be

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prevented. These materials include two videos, “Close to the Heart: Breastfeeding Our Children and Honoring Our Values,” which encourages breastfeeding to prevent obesity and Type 2 diabetes, and “Message of Hope: We Can Prevent Diabetes in Native American Communities.” Members of the Gila River Indian Tribe participated in this effort.

### **National Kidney Disease Education Program (NKDEP)**

*Project Type:* Community Outreach, Educational

*Population:* American Indian, Alaska Native, Native American

*Description:* The NIDDK initiated the National Kidney Disease Education Program (NKDEP) in the summer of 2000. Since then, NKDEP has worked to reduce the burden of chronic kidney disease (CKD) and ESRD, especially among communities most impacted by the disease. ESRD disproportionately impacts racial and ethnic minorities, particularly African Americans, Hispanics, and Native Americans, and Native Americans are 1.8 times more likely than Whites to develop ESRD.

### **Multiethnic Study of Type 2 Diabetes Genes**

*Project Type:* Research

*Population:* American Indian, Native American

*Description:* The purpose of this project is to bring together multiethnic samples representative of the US population, drawn from the Jackson Heart Study (JHS), Framingham Heart Study (FHS), Multiethnic Cohort (MEC) study, and Diabetes Prevention Program (DPP). This unique resource includes:

1. 29,000 individuals with DNA for genetic research
2. Inclusion of multiple groups collected in the US, including African Americans, Hispanics/Latinos, Asian Americans, Native Hawaiians, Native Americans, and Non-Hispanic Whites
3. Use of identical phenotyping protocols in JHS and FHS, providing high-quality, comparable clinical data for T2D and related traits, including  $\beta$ -cell function and insulin resistance
4. Availability of high-density, genome-wide SNP data (JHS, FHS, and MEC controls) for imputation and genomic control
5. Population-based environmental data and longitudinal follow-up (JHS, FHS, MEC)
6. A multi-ethnic randomized clinical trial conducted in exquisitely phenotyped participants to assess whether genetic variants influence the reduction in risk conferred by lifestyle or pharmacological interventions (DPP)

### **Telomere Attrition and Diabetes Risk in American Indians**

*Project Type:* Research  
*Population:* American Indian

*Description:* This study proposes to investigate the prospective association and determinants of telomere attrition and diabetes risk in American Indians using an existing, well-defined, longitudinal cohort, the Strong Heart Family Study. Results will provide valuable data regarding biological aging and diabetes in American Indians and other ethnic groups as well.

### **Prenatal Conditions and the Pathway to Obesity and Diabetes in Children**

*Project Type:* Research  
*Population:* American Indian

*Description:* Obesity is increasing at an alarming rate in children and threatening their future health, especially among American Indians and Hispanics. This project examines the maternal factors that predispose to obesity and diabetes and how they affect preschool-aged children. This information will be useful in designing specific interventions and assessing their efficacy.

### **Washington University Center for Diabetes Translation Research**

*Project Type:* Research  
*Population:* American Indian

*Description:* Washington University in St. Louis and the National Congress of American Indians (NCAI) have combined their resources and expertise in organizing the Washington University Center for Diabetes Translation Research (WU-CDTR). The goal of the WU-CDTR is to eliminate disparities in Type 2 diabetes by translating evidence-based interventions to diverse communities. To achieve this goal, the WU-CDTR is organized around two interacting scientific themes that address the root causes of diabetes and disparities, and obesity as a major contributing factor to Type 2 diabetes.

### **Center for American Indian and Alaska Native Diabetes Translational Research (CAIANDTR)**

*Project Type:* Research  
*Population:* American Indian, Alaska Native

*Description:* The mission of the CAIANDTR is to translate research of proven efficacy and effectiveness into practice in both clinical and community settings, with the goal of improving the diabetes-related health of Native people. To meet these goals, CAIANDTR will provide core resources and consultation locally, regionally, and nationally in areas relevant to the NIDDK's translational research agenda, specific to AI/ANs but generalizable

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to other segments of the population - in particular racial/ethnic minorities and rural populations.

We have four specific aims:

1. Provide an administrative structure that promotes excellence in translational research and research capacity-building specific to improving diabetes-related health. Included within the Administrative Core will be the following:
  - a. A Pilot and Feasibility program that provides initial support for exploration of possibly innovative directions in translational research among AI/AN communities; and
  - b. An Enrichment program that provides ample opportunities for CAIANDTR faculty, staff, students, and community members and providers to learn from one another; meet those serving AI/ANs at risk for or with diabetes, and learn from distinguished experts.
2. Convene a research base of funded UCD faculty whose research either directly targets diabetes prevention and management or is translational in nature with clear potential for application to diabetes translation research
3. Institute and staff four Resource Cores (Engagement; Technology; Implementation, Dissemination, and Diffusion; and Sustainability) designed to facilitate a multidisciplinary, culturally grounded, problem-oriented translational research program of major scientific and programmatic importance
4. Serve as a National Resource Core for other investigators in the US seeking to work with AI/AN communities, as well as to those struggling to pursue diabetes translational research in rural and other racial/ethnic minority populations

## **Reversing Non-Adherence in American Indians with Diabetes Mellitus Type 2**

*Project Type:* Research

*Population:* American Indian

*Description:* This pilot study is designed to compare diabetes self-management outcomes and effectiveness between two groups of adult American Indians who have been identified as having uncontrolled diabetes mellitus type two (DM2) and have been prescribed insulin but do not take insulin as directed. The experimental group will receive diabetes self-management education (DSME) using the culturally appropriate Talking Circles (TCs) format and the control group will receive DSME using the traditional didactic-classroom format.

## **Chronic Kidney Disease Knowledge and Awareness among American Indians**

*Project Type:* Research, Educational

*Population:* American Indian

*Description:* This study proposes to conduct a series of focus groups and create a chronic kidney disease knowledge and awareness survey. Few educational intervention clinical trials have been conducted among those at risk for or with early chronic kidney disease. To

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our knowledge, none have used digital storytelling as a means to deliver the educational message and none have been conducted among American Indians, a group with high prevalence of chronic kidney disease and end stage kidney disease. The aims of the research project are to:

1. Quantify levels of chronic kidney disease knowledge and awareness among American Indians with metabolic syndrome
2. Determine the effectiveness of a culturally tailored health presentation with computerized digital stories made by American Indians, compared to a conventional health video presentation only, for improving chronic kidney disease knowledge and factors thought to be preventative of chronic kidney disease or its progression at baseline and follow-up in a pilot clinical intervention trial

### **A Targeted Approach to Increasing American Indian Tissue and Organ Donation**

*Project Type:* Research, Educational

*Population:* American Indian

*Description:* In this project, investigators will mount a multi-pronged program on ESRD and organ donation at seven Tribal Colleges and Universities (TCUs) in the Pacific Northwest and Northern Plains. These states are primarily rural, contain medically underserved areas, and have large populations of American Indians. Because students are among those most likely to donate organs, TCUs offer the possibility of reaching a young and educated population of American Indians. To understand our target population's knowledge and attitudes regarding donation, we will conduct focus groups, then develop culturally appropriate educational materials (brochures, posters) to distribute at TCUs and surrounding communities. We will create also an on-line course on chronic diseases and ESRD, underscoring the need for kidney donation.

### **Genetics of Obesity in Yup'ik Eskimos**

*Project Type:* Research

*Population:* Yup'ik Eskimo

*Description:* The investigators extended their current data set of over 800 interrelated Yup'ik Eskimos to 1000 family members in order to identify SNPs in the seven candidate genes; to test these genes for association with obesity phenotypes and to test for gene-environment and gene-gene interactions. Strengths of their approach include:

1. Ongoing access to, and excellent research partnership with, Yup'ik Eskimos
2. Extensive, well-defined medical histories
3. Highly variable levels of polyunsaturated fatty acid (PUFA) intake and physical activity. Treatment for obesity has been only modestly successful, perhaps because the complex etiology is largely unknown. The discovery of gene-environment interactions gained from this study will further the understanding of obesity and will be relevant to future studies aimed at developing and testing interventions as well as identifying novel therapeutic targets for obesity

### **Neural Correlates of Food Reward in American Indian Women**

*Project Type:* Research, Educational

*Population:* American Indian

*Description:* Despite the disproportionate obesity burden among American Indians, this will be the first study using functional magnetic resonance imaging (fMRI) and an opioid antagonist to focus on this underrepresented population. Our results will provide important data about brain activation in response to high-calorie foods that will inform dietary interventions aimed at preventing and treating obesity and may identify a promising pharmacologic treatment for obesity and overeating in American Indians.

### **Hepatitis Beta Research Network Clinical Center in Pacific Northwest/Alaska**

*Project Type:* Research

*Population:* American Indian, Alaska Native, Native American

*Description:* We propose to establish a Clinical Center as part of the Hepatitis B Clinical Research Network (HB-CRN) consisting of three collaborating institutions in the states of Washington and Alaska. This Clinical Center brings together the patients, investigators, and resources of the University of Washington, including the University of Washington Medical Center, the Children's Hospital and Regional Medical Center, the Harborview Medical Center, and the Veterans Affairs Puget Sound Health Care System; Virginia Mason Medical Center; and the Alaska Native Tribal Health Consortium, as well as a number of affiliated community and outreach clinics. We plan to establish a data base, a natural history study, and a bio repository of patients with chronic HBV infection from the Pacific Northwest and Alaska, including both adults and children from a diverse range of ethnic groups and encompassing five of the major HBV genotypes and several of the HBV sub-genotypes (A1, A2, Ba, Bj, C, D and F).

## **NATIONAL INSTITUTE ON DRUG ABUSE (NIDA)**

The mission of the National Institute on Drug Abuse (NIDA) is to lead the Nation in bringing the power of science to bear on drug abuse and addiction. This charge has two critical components. The first is the strategic support and conduct of research across a broad range of disciplines. The second is ensuring the rapid and effective dissemination and use of the results of that research to improve significantly the prevention and treatment of, and inform policy as it relates to, drug abuse and addiction.

For more than three decades, the National Institute on Drug Abuse has led the way in supporting research to prevent and treat drug abuse and addiction and mitigate the impact of their consequences, which include the spread of HIV/AIDS and other infectious diseases. To confront the most pressing aspects of this complex disease and to tackle its underlying causes, our strategic approach is necessarily a multipronged one. It takes advantage of research programs in basic, clinical, and translational sciences. This includes genetics, functional neuroimaging,

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social neuroscience, medication and behavioral therapies, prevention, and health services, including comparative effectiveness and cost-effectiveness research. Our burgeoning portfolio has given us a large and growing body of knowledge that informs our strategic directions and priorities for the future. These directions are grouped into four major goal areas: prevention, treatment, HIV/AIDS, and crosscutting priorities.

**Native American Research Centers for Health (NARCH) Initiative**

*Project Type:* Research, Training

*Population:* American Indian, Alaska Native

*Description:* Through NARCH, NIDA continued its support of twelve ongoing NARCH programs, including studies of:

1. Pain rehabilitation for American Indians with chronic pain
2. The process of community-based participatory research (CBPR)
3. Prevention of intentional injury
4. Improving health research skills for trainees
5. Factors related to methamphetamine abuse
6. Physical activity and drug use
7. Family-based alcohol and drug-prevention interventions

**Native Pathways to Sobriety: Pacific Northwest Oral Life Histories**

*Project Type:* Research

*Population:* American Indian, Alaska Native

*Description:* This study explores resiliency and recovery related to alcohol and drug abuse and dependence. Ultimately information will be used to inform the development of prevention and treatment strategies.

**Caring for Our Generations: Supporting Native Mothers and Their Families**

*Project Type:* Research

*Population:* American Indian, Alaska Native

*Description:* This four-year developmental project explores maternal health behaviors, maternal substance use, risk factors for substance use during and after pregnancy, and protective factors that support healthy maternal behaviors.

**In-Home Prevention of Substance Abuse Risks in Native Teen Families**

*Project Type:* Research

*Population:* American Indian

*Description:* This NIDA-administered randomized controlled trial will evaluate the effects of the Family Spirit intervention, a prenatal/early childhood home visiting program aimed at

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increasing maternal positive parenting practices and reducing maternal and child behavioral risks for lifetime drug abuse.

*Results:* Mothers in the Family Spirit Intervention group had greater parenting knowledge gains. Mothers in the intervention group also reported their infants to have significantly lower scores on the externalizing domain and less separation distress in the internalizing domain. This study supports the efficacy of the paraprofessional-delivered home-visiting intervention for young AI mothers on maternal knowledge and infant behavior outcomes.

*Publication/Reference:* Barlow, A., Mullany, B.C., Neault, N., Davis, Y., Billy, T., Hastings, R., Coho-Mescal, V., Lake, K., Powers, J., Clouse, E., Reid, R., & Walkup, J.T. (2010). Examining correlates of methamphetamine and other drug use in pregnant American Indian adolescents. *American Indian and Alaska Native Mental Health Research*, 17:1-24

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### **Tobacco Cessation Treatment for Alaska Native Youth**

*Project Type:* Research

*Population:* Alaska Native youth of the Yukon-Kuskokwim Delta region

*Description:* This study is developing a behavioral intervention for tobacco cessation that is culturally appropriate for youth of the Yukon-Kuskokwim Delta region. These efforts may ultimately reduce risk of cancer and other tobacco-related disease.

### **A Community Trial in Alaska to Prevent Youth's Use of Legal Products to Get High**

*Project Type:* Research

*Population:* American Indian and Alaska Native adolescents

*Description:* This efficacy trial integrates community participation and cultural heritage to inform interventions aimed at preventing use of inhalants and other harmful legal products among Native American youth in remote rural and sustainable communities.

*Results:* Following combined environmental and ThinkSmart intervention exposure, youth displayed significant increases in knowledge of harms related to harmful legal product (HLP) use. Results encourage the use of combined community, home, and school-based prevention strategies to reduce HLP use among young people in Alaskan frontier communities.

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*Publication/Reference:* Johnson, K.W., Ogilvie, K.A., Collins, D.A., Shamblen, S.R., Dirks, L.G., Ringwalt, C.L., & Norland, J.J. (2010). Studying implementation quality of a school-based prevention curriculum in frontier Alaska: application of video-recorded observations and expert panel judgment. *Prevention Science: The Official Journal of the Society for Prevention Research*, 11: 275-86

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Ogilvie KA, Moore RS, Ogilvie DC, Johnson KW, Collins DA, Shamblen SR (2008). Changing community readiness to prevent the abuse of inhalants and other harmful legal products in Alaska. *J Community Health*, 33:248-58

Courser MW, Holder HD, Collins D, Johnson K, Ogilvie K (2007). An evaluation of retail outlets as part of a community prevention trial to reduce sales of harmful legal products to youth. *Eval Rev*. 31:343-63

### **Drug Use Among Young Indians: Epidemiology & Prediction**

*Project Type:* Research

*Population:* American Indian, Alaska Native

*Description:* This project continues a 30-year surveillance effort assessing the levels and patterns of substance use among American Indian adolescents attending reservation schools. Findings will guide recommendations for the design of drug, alcohol, and violence prevention programs that will be effective for American Indian youth.

*Results:* Current data shows rates for inhalant use among younger Native American youth (4<sup>th</sup>-6<sup>th</sup> grade) are generally lower than their non-Native American counterparts. Rates of alcohol and marijuana use, however, are significantly higher, which may indicate that Native American (compared to non-Native American) children could be experiencing greater social and environmental pressures to use alcohol and drugs at an earlier age.

*Publication/Reference:* Tragesser, S.L., Beauvais, F., Burnside, M., & Jumper-Thurman, P. (2010). Differences in illicit drug-use rates among Oklahoma and non-Oklahoma Indian youth. *Substance Use & Misuse*, 45(13), 2323-39

Miller, K A, Beauvais, F, Burnside, M Jumper-Thurman, PA (2008). Comparison of American Indian and non-Indian fourth to sixth graders' rates of drug use. *Journal of Ethnicity in Substance Abuse*, 7:258-67

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Beauvais, F, Jumper-Thurman, P, Burnside M. (2008). Surveillance of drug use among American Indian students over the past 30 years. *American Indian and Alaska Native Mental Health Research*, 15: 15-24

Beauvais, F, Jumper-Thurman, P, Helm H, Plested, B., Burnside M. (2004). Surveillance of drug use among American Indian adolescents; patterns over 25 years. *The Journal of Adolescent Health*, 34: 493-500

### **Evidence-Based Practices and Substance Abuse Treatment for Native Americans**

*Project Type:* Research

*Population:* American Indian, Alaska Native

*Description:* The specific aims of this project are to:

1. Describe the use of specific Evidence-Based Practices (EBPs) in substance abuse treatment programs serving AI/AN communities
2. Describe process decisions for implementing EBPs
3. Identify better dissemination methods of EBPs to substance abuse treatment programs serving AI/AN communities. This project will help to inform future substance abuse treatment strategies among AI/AN communities

### **Factors Related to Substance Use Development in Young American Indian Adolescents**

*Project Type:* Research

*Population:* American Indian and Alaska Native adolescents

*Description:* This project will increase understanding of emergent patterns of substance use among young adolescent American Indians and identify risk and protective factors that may provide windows of opportunity for prevention.

### **Opening the Pipeline for Native High Schools**

*Project Type:* Research

*Population:* American Indian, Alaska Native

*Description:* This program, via partnership with Harvard Medical School, seeks to improve the opportunity for Native American High school students to engage in science education and pursue undergraduate and graduate training in biomedical sciences and medicine. Additional goals of this project are to increase educational expectations, understanding of substance abuse psychology, and encourage community change.

### **Zuni MI/CRA Project**

*Project Type:* Research

*Population:* Zuni Pueblo

*Description:* This project aims to combine, adapt, and test a combination of evidence-based methods, motivational interviewing, and community reinforcement approach (MICRA), in preparation for a formal substance abuse treatment intervention clinical trial in Zuni Pueblo communities. After development and testing, generalizability of MICRA for use with other tribes will be assessed.

### **Understanding Racial Disparities in Teen Methamphetamine Use**

*Project Type:* Research

*Population:* Native American, Caucasian

*Description:* This study will provide a comprehensive portrait of the risk and protective factors associated with adolescent methamphetamine use. The long-term goal of the research is to explore how racial and economic stratification produce health disparities. Results will inform strategies to reduce race- and economic-based disparities among Native Americans.

### **Pathways from Maltreatment to Substance Abuse**

*Project Type:* Research

*Population:* American Indian

*Description:* The aim of this K24 proposal is to understand better the neurobiological pathways underlying early trauma and substance abuse. Understanding the effects of early trauma and genetics on brain development will help identify causal mechanisms that may lead to effective interventions. The study sample is 25% American Indian.

*Results:* Findings suggest that low SES and history of abuse is linked with greater trauma symptoms and specific memory deficits in youth. Results suggest the importance of identifying individuals with a history of trauma and use of trauma-focused behavior therapies (such as CBT).

*Publication/Reference:* De Bellis, M.D., Hooper, S.R., Woolley, D.P., & Shenk, C.E. (2010). Demographic, maltreatment, and neurobiological correlates of PTSD symptoms in children and adolescents. *Journal of Pediatric Psychology, 35:570-7*

## **Vulnerability to Drug Abuse: Pathways to Recovery**

*Project Type:* Research  
*Population:* American Indian

*Description:* This research aims to understand the prevalence and mechanisms involved in stable substance use disorder (SUD) recovery versus unstable patterns of SUD, relapse, and adult onset; and to identify predictors that lead to stable recovery, such as to SUD history, psychiatric disorders, income and quality of life. The study sample is 25% American Indian.

*Results:* Current findings show that family poverty during childhood and low parental education negatively influences family social functioning and SUD prevalence as adults.

*Publication/Reference:* Copeland, W.E., Sun, H., Costello, E.J., Angold, A., Heilig, M.A., Barr, C.S. (2011). Child  $\mu$ -opioid receptor gene variant influences parent-child relations. *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology*, 36:1165-70

Costello E.J., Erkanli A., Copeland, W. and Angold, A (2010). Association of family income supplements in adolescence with development of psychiatric and substance use disorders in adulthood among an American Indian population. *JAMA*, 303:1954-60  
Brown, R.A., Adler N.E., Worthman, C.M., Copeland, W.E., Costello E.J., and Angold A (2008). Cultural and community determinants of subjective social status among Cherokee and White youth. *Ethn Health*,  
<http://www.ncbi.nlm.nih.gov/pubmed/18701990?dopt=Citation> 13:289-303

Costello, E.J., Compton, S.N., Keeler, G., Angold, .A (2003). Relationships between poverty and psychopathology: A natural experiment. *JAMA*, 290:2023–2029

## **Prefrontal Function in Adolescent Limited vs. Life Course Persistent Substance Use Disorder**

*Project Type:* Research  
*Population:* American Indian

*Description:* The focus of this research is to understand the brain mechanisms of persistence versus desistence of adolescent onset alcohol and/or marijuana use disorder, defined as DSM-IV substance abuse/dependence, from adolescence into young adulthood. The study sample is 25% American Indian.

*Results:* Trauma experience is linked with increased risk for psychological and behavioral health problems (including substance abuse) in youth and young adults.

*Publication/Reference:* Kaplow, J.B., Saunders, J., Angold, A., & Costello, E.J. (2010). Psychiatric symptoms in bereaved versus nonbereaved youth and young adults: A

longitudinal epidemiological study. *Journal of the American Academy of Child and Adolescent Psychiatry*, 49: 1145-54

### **Testing a Substance Abuse Prevention for Cherokee Early Adolescents**

*Project Type:* Research  
*Population:* American Indian

*Description:* The overall objective of this research study is to examine the feasibility of using an innovative culturally appropriate school-based substance use prevention [Cherokee Talking Circle (CTC)] intervention in Cherokee 6th graders as they transition to middle school, a period of high vulnerability.

### **Brief Intervention for Substance Using Native Youth**

*Project Type:* Research  
*Population:* American Indian, Alaska Native

*Description:* This five-year research project will develop and test a school-based brief motivational intervention (MI) for substance using Native American high school students. The primary goal of the proposed study is to conduct a clinical trial evaluating a culturally congruent, school-based MI intervention targeting substance use among Native American high school students.

### **A Computer-Based Drug Prevention Intervention for Native American Youth**

*Project Type:* Research  
*Population:* American Indian, Alaska Native

*Description:* This project will develop and evaluate multimedia, internet, and computer-versions of the Statewide Indian Drug Prevention Program (SIDPP), an effective and low-cost culturally relevant drug prevention program for Native American youth. The project addresses the need for evidence-based, culturally relevant drug prevention interventions that are accessible and engaging to Native American youth in remote locations.

### **Methamphetamine and Other Drugs (MOD) in American Indians**

*Project Type:* Research  
*Population:* American Indian, Alaska Native

*Description:* Exploratory and pilot studies conducted with tribal and urban sites across several states to develop collaborations with tribes and Native American treatment programs and explore the epidemiology of methamphetamine use and co-occurring problems and disorders in diverse Native American communities.

**Acceptability of a Web-Delivered, Evidence-Based, Psychosocial Intervention among Individuals with Substance Use Disorders who Identify as American Indian/Alaska Native**

*Project Type:* Research

*Population:* American Indian, Alaska Native

*Description:* This study is examining the acceptability of a web-delivered Community Reinforcement Approach intervention (Therapeutic Education System [TES]) among AI/AN clients in two non-reservation based treatment programs. The study will collect both quantitative and qualitative acceptability data that will be used to inform possible TES adaptation for this population.

**CBPR with Tribal Colleges-Universities: Alcohol Problems-Solutions**

*Project Type:* Research

*Population:* American Indian, Alaska Native

*Description:* This project uses CBPR methods to conduct the first investigation of alcohol, drug, and mental disorders (ADM) at Tribal Colleges and Universities (TCUs) and is a preliminary step on a path toward developing culturally appropriate and sustainable interventions at TCUs.

**Advancing Science with Culturally Distinct Communities**

*Project Type:* Research Conference Grant

*Population:* American Indian, Alaska Native

*Description:* The Center for Alaska Native Health Research (CANHR) held a conference to address issues related to small sample research. This included research designs and analysis methods that can maximize statistical power, strategies that respond to cultural distinctiveness to reduce error and bias, and use of mixed methods that combine qualitative and quantitative methodologies.

**NCRE II: Native Children's Development in the Context of Substance Use**

*Project Type:* Research Conference Grant

*Population:* American Indian, Alaska Native

*Description:* The Native Children's Research Exchange (NCRE) holds annual meetings focused on substance use and child development in Native populations. Goals are to facilitate interaction and exchange among scholars studying child development in Native communities, foster collaborative work to advance Native child development research related to substance use, and provide mentorship to new researchers.

### **Partnership for Public Health Research in the Oglala Sioux Tribe**

*Project Type:* Research Infrastructure Program

*Population:* American Indian, Alaska Native

*Description:* The Oglala Sioux Tribe faces numerous health challenges, many stemming from behaviors that emerge during childhood and adolescence. The goal of this collaborative project is to facilitate research infrastructure development within the tribe, focusing on prevention among the tribe's youth.

### **Prevention Trial in the Cherokee Nation: Interactive Effects of Environment & SBI**

*Project Type:* Research

*Population:* American Indian, Alaska Native

*Description:* This project is designed as a partnership between prevention scientists and the Cherokee Nation Behavioral Health Services to create, implement, and evaluate a new, integrated community-level intervention designed to prevent underage drinking and associated negative consequences among American Indian and white youth living in rural, high-risk, underserved communities.

### **Ecological Factors and Drug Use of Native Hawaiian Youth**

*Project Type:* Training

*Population:* American Indian, Alaska Native

*Description:* This project proposes a structured program of mentoring, training, coursework, and supervised research to increase the capacity to conduct large-scale, high-quality quantitative and qualitative research. The long-term objective of this grant is to develop grantee research capabilities in the area of substance use in indigenous youth populations (e.g., American Indian youth and Native Hawaiian youth), ultimately allowing the grantee to develop successfully and conduct federally-funded drug and alcohol research within American Indian and Native Hawaiian populations.

*Publication/Reference:* Okamoto, S.K., Helm, S., Delp, J.A., Stone, K., Dinson, A., Stetkiewicz, J. (2011). A community stakeholder analysis of drug resistance strategies of rural Native Hawaiian youth. *The Journal of Primary Prevention*, 32(3-4), 185-93. doi: 10.1007/s10935-011-0247-7

Okamoto, S K, Helm, S, Po'a-Kekuawela, K, Chin, C I H, Nebre, L H (2009). Community risk and resiliency factors related to drug use of rural Native Hawaiian youth: an exploratory study. *Journal of Ethnicity in Substance Abuse*, 8: 163-77

### **Contextual Risk Factors for Substance Use in Adolescent Reservation-Dwelling American Indians**

*Project Type:* Training  
*Population:* American Indian

*Description:* The present project proposes a structured program of mentoring, training, and supervised research to increase grantee capacity to conduct high-quality research blending state-of-the-art qualitative and quantitative methodologies to address questions related to substance abuse among AI populations.

### **Mentoring Diverse Scientists in HIV Research on Substance Abuse and Mental Health**

*Project Type:* Research  
*Population:* American Indian, Alaska Native

*Description:* The aim of this K24 proposal is to increase the pool and career development of researchers investigating behavioral aspects of HIV research within ethnic and sexual minority populations (e.g., Native American, African American, and Latino/Hispanic MSM). Specific emphasis for this grant is placed on Native HIV research, including HIV preventive interventions.

### **Association of American Indian Physicians (AAIP): NIDA Mentoring Meeting**

*Project Type:* Training, Outreach  
*Population:* American Indian, Alaska Native

*Description:* The NIDA American Indian and Alaska Native Scholars group convened a one-day workshop at the Association of American Indian Physicians (AAIP) meeting to address questions related to developing and implementing research projects related to substance abuse in Indian Country (August, 2011).

### **Behavior Health Center of Excellence: First Annual Behavioral Health Conference**

*Project Type:* Outreach  
*Population:* American Indian, Alaska Native

*Description:* NIDA provided support to the Aberdeen Area Tribal Chairmen's Health Board to support a meeting focused in part on disseminating research on state of the art behavioral health practice.

### **Native Research Network**

*Project Type:* Outreach  
*Population:* American Indian, Alaska Native

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*Description:* NIDA scientists participated in, and provided travel support for, junior investigators to attend the Native Research Network Conference, which serves to promote research and workforce development among indigenous cultures (June, 2011).

**Summer and Winter Institutes on AI/AN Health Research**

*Project Type:* Outreach

*Population:* American Indian, Alaska Native

*Description:* NIDA provided support for, and participated in, a one-week course at the Summer Institute for American Indian and Alaska Native Health Professionals. This meeting focused on drug abuse epidemiology and treatment among AI/AN populations (June 2011). NIDA staff also participated in the Johns Hopkins Winter Institute for AI/AN Health Research, which introduces indigenous health leaders to public health approaches that address health disparities in tribal communities.

**National Action Alliance for Suicide Prevention: AI/AN Task Force**

*Project Type:* Outreach, Capacity-Building

*Population:* American Indian, Alaska Native

*Description:* NIDA serves on the National Action Alliance for Suicide Prevention AI/AN Task Force. Goals of this effort include increasing the focus on the intersection between suicide and substance abuse, as well as increasing research in this area.

**Building Bridges: Advancing American Indian and Alaska Native Substance Abuse Research - State of the Science and Grant Development Workshop**

*Project Type:* Outreach, Capacity-Building

*Population:* American Indian, Alaska Native

*Description:* Specific objectives of this meeting included showcasing and assessing the state of the science of AI/AN substance abuse research, networking investigators working in this area, and providing intensive technical assistance to early career investigators focused on AI/AN research. Nineteen NIH funded investigators presented on the state of the science, and a two-hour session allowed experts to provide recommendations. Twenty-six AI/AN research concepts were reviewed and critiqued during the technical assistance sessions (October 5-7, 2010).

### **Making Culture Count: Exploring the Intersection of Indigenous Knowledge and Intervention Science**

*Project Type:* Capacity-Building  
*Population:* American Indian, Alaska Native

*Description:* This workshop convened Native Investigators to address questions related to the roles of Indigenous knowledge and Western scientific knowledge in furthering the state of the knowledge related to substance abuse interventions for AI/AN populations (May, 2011).

### **Society for Prevention Research**

*Project Type:* Outreach, Mentoring  
*Population:* American Indian, Alaska Native

*Description:* NIDA provided support for a symposium highlighting the state of substance abuse prevention research among American Indian and Alaska Native populations. A strategic planning workshop on best practices for networking among AI/AN substance abuse investigators and the broader prevention science community was also held at this meeting (June, 2011).

### **Junior Investigator Support**

*Project Type:* Outreach, Mentoring  
*Population:* American Indian, Alaska Native

*Description:* NIDA provided travel support to junior American Indian or Alaska Native investigators to attend the Native Children's Research Exchange and the American Psychological Association (APA) annual meetings. APA-supported AI/AN students presented posters showcasing their research.

### **Webinar program**

*Project Type:* Technical Assistance, Outreach  
*Population:* American Indian, Alaska Native

*Description:* NIDA began a series of webinars focused on AI/AN substance abuse research. The first in this series (March, 2011) addressed Alternatives to randomized clinical trials for American Indian and Alaska Native populations.

### **Seminar Series Mock Review: Follow-up to Building Bridges**

*Project Type:* Technical Assistance

*Population:* American Indian, Alaska Native

*Description:* A two-day mock review and technical assistance workshop was held for AI/AN substance abuse-focused research applications. Applicants were able to listen as their applications were mock reviewed. Participants also took part in two hours of one-on-one consultations with senior investigators and NIH program staff and heard presentations on cutting-edge research methods currently being utilized in AI/AN social science research (September, 2011).

### **NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES (NIEHS)**

The mission of the National Institute of Environmental Health Sciences (NIEHS) is to reduce the burden of human illness and disability by understanding how the environment influences the development and progression of human disease.

### **Environmental Health and Justice in Norton Sound, Alaska**

*Project Type:* Research

*Population:* Alaska Native

*Description:* The purpose of this project is to work in partnership with fifteen communities in the Norton Sound region of Alaska to find effective means to limit the release of, and mitigate the human health effects of, contaminants in the natural environment. The majority of the residents of these villages are Inupiat and Yupik, indigenous people who depend on the harvest of wild foods to sustain them and their ways of life.

The collaborative work includes constructing a database of information regarding formerly used defense sites (FUDS) in the region and the contaminants found at these sites. Researchers are working with village leaders to provide training to oversee FUDS clean-up work and establish independent monitoring programs for contaminants. Together, we will develop an environmental health care curriculum for the diagnosis and treatment of human health problems associated with environmental contaminants.

*Publication/Reference:* Organochlorine and metal contaminants in traditional foods from St. Lawrence Island, Alaska. Welfinger-Smith G, Minholz JL, Byrne S, Waghiyi V, Gologergen J, Kava J, Apatiki M, Ungott E, Miller PK, Arnason JG, Carpenter DO. J Toxicol Environ Health A. 2011 Sep 15; 74(18):1195-214

Polychlorinated biphenyls in serum of the Siberian Yupik people from St. Lawrence Island, Alaska. Carpenter DO, DeCaprio AP, O'Hehir D, Akhtar F, Johnson G, Scrudato RJ, Apatiki L, Kava J, Gologergen J, Miller PK, Eckstein L. Int J Circumpolar Health. 2005 Sep; 64(4):322-35

### **Protecting the Health of Future Generations: Assessing and Preventing Exposures**

*Project Type:* Research  
*Population:* Alaska Native

*Description:* This community-based participatory research project investigates exposures to two classes of emerging endocrine-disrupting chemicals (EDCs) with the Yupik people of St. Lawrence Island (SLI) in the Alaskan Arctic. The purpose of this project is to initiate research partnerships that work in collaboration with the two Yupik villages of SLI to assess multiple exposure routes of two emerging EDCs-polybrominated diphenyl ethers (PBDEs) and perfluorinated compounds (PFCs). The project will assess exposures to PBDEs and PFCs in surface waters through analyses of contaminant levels and biomarkers for xenobiotic chemicals in the threespine stickleback fish. The research team will also analyze household dust for PBDEs and PFCs.

### **Uranium in the Food Chain Near Abandoned Mining Sites in an American Indian Community**

*Project Type:* Educational  
*Population:* American Indian, Native American

*Description:* NIEHS is cofunding this NINR predoctoral fellowship for a young Native American woman with a nursing background who will determine if locally harvested and consumed dietary foods from selected animals and plants on Diné (formerly known as Navajo) lands in northwestern New Mexico might pose health risks due to uranium contamination.

### **Air Pollution Outreach, Education, and Research Capacity-Building in Alaska Natives**

*Project Type:* Research, Training Program, Community Outreach, Educational, Capacity-Building  
*Population:* Alaska Native

*Description:* In collaboration with the Alaska Native Tribal Health Consortium (ANTHC), the researchers will implement the Air Toxics Under the Big Sky program into seven Alaska Native villages to educate the communities on the importance of good indoor air quality. As the program evolves, it will support the communities to identify community-specific air pollution issues of importance and to characterize respiratory disease within the communities. In the future, intervention type strategies will be identified and implemented within each of the communities to mitigate the identified air pollution problems and improve respiratory health among the Alaska Native populations.

### **Navajo Uranium Assessment and Kidney Health Project and the DINÉ Network for Environmental Health Project**

*Project Type:* Research, Community Outreach

*Population:* Native American - Navajo People

*Description:* Projects address the health impact of past uranium mining at more than 1,000 mining and milling sites, with special focus on chronic kidney disease and contamination of drinking water from unregulated sources. The aim is to develop acceptable safe Alternative water sources as well as to calculate risks for kidney disease from contaminated water.

### **Domoic Acid Neurotoxicity in Native Americans**

*Project Type:* Research

*Population:* Native American

*Description:* A prospective longitudinal cohort design of 735 Native Americans (ages 6-months to 75- yrs) from three tribes, with nested case-control study of identified cases of ASP (amnesiac shellfish poisoning) will be implemented. The health impacts of chronic, low level exposures to DA (domoic acid) over time will be determined as well as the exposure and host factors associated with DA neurotoxicity.

*Publication/Reference:* Evaluation of dietary assessment tools used to assess the diet of adults participating in the Commun. Fialkowski, Marie K, McCrory, Megan A, Roberts, Sparkle M, Tracy, J Kathleen, Grattan, Lynn M, Boushey, Carol J J Am Diet Assoc (2010 Jan)

Domoic acid: neurobehavioral consequences of exposure to a prevalent marine biotoxin. Grant, Kimberly S, Burbacher, Thomas M, Faustman, Elaine M, Grattan, Lynn Neurotoxicol Teratol (2010 Mar-Apr)

Estimated nutrient intakes from food generally do not meet dietary reference intakes among adult members. Fialkowski, Marie K, McCrory, Megan A, Roberts, Sparkle M, Tracy, J Kathleen, Grattan, Lynn M, Boushey, Carol J. J Nutr (2010 May)

The early psychological impacts of the Deepwater Horizon oil spill on Florida and Alabama communities. Grattan, Lynn M, Roberts, Sparkle, Mahan Jr, William T, McLaughlin, Patrick K, Otwell, W Steven, Morris Jr., J Glenn. Environ Health Perspect (2011 Jun)

### **Metal Exposure and Children's Preschool Neurodevelopment**

*Project Type:* Research

*Population:* Native American

*Description:* In this project we will build upon an ongoing birth cohort study of 750 mothers and their children at a former hard rock mining community, the Tar Creek, OK, Superfund

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mega-site. To date, children have been followed to age two-years, involving the collection of extensive Pb, Mn, and As biomarker data (blood, hair, nails), providing a record of lifetime (including prenatal) exposures to these metals. In the proposed project, assessments will be conducted when children are 5.5 years-of-age. At that time, Mn and Pb will be measured in blood; Mn, As, and selenium (Se) in hair; and As and Se in nails. The neurodevelopmental assessment will include tests of intelligence, memory, visual-motor/spatial abilities, executive functions, and behavior. Data analyses will model the associations between neurodevelopment and individual metals and between neurodevelopment and joint exposures to metals.

### **Environmental Contaminants and School-Age Development**

*Project Type:* Research

*Population:* Native American

*Description:* Prenatal exposures to polychlorinated biphenyls (PCBs) and methylmercury have been linked prospectively to developmental deficits in children. The data from at least one important study are controversial, however, because the children were exposed simultaneously to high levels of both contaminants. The Inuit in Canada and Greenland are among the most heavily exposed populations to these substances due to their bioaccumulation in fish and sea mammals, staples of the Inuit diet.

On the other hand, the traditional Inuit diet is also rich in omega-3 fatty acids, which are known to promote early CNS development, and selenium, which may protect against mercury effects. The researchers have recently conducted a study of 215 infants in Northern Quebec and are currently completing data collection on an additional 78 infants in Greenland. Although the children have been exposed to significant levels of both contaminants, the exposures are only moderately confounded in these cohorts, and preliminary data analyses suggest that each contaminant affects distinct domains of cognitive function.

The study will follow up these two cohorts of Inuit children at 7.5 years-of-age. The aims are as follows:

1. Determine more specifically which developmental endpoints are related to which contaminants
2. Examine neural processes that may mediate the effects on these endpoints by assessing event-related potentials and eye blink conditioning
3. Test the hypothesis that the deficits associated with PCBs are mediated by reductions in thyroid hormone availability
4. Determine the degree to which omega-3 fatty acid and selenium intake can protect against these adverse effects

**Tribal-University Collaboration to Address Tribal Exposures to PAHs and Improve Community Health (Oregon State University Superfund Research Center)**

*Project Type:* Research, Community Outreach, Capacity-Building

*Population:* Native American, Confederated Tribes of the Umatilla Indian Reservation (CTUIR) Tribal agencies

*Description:* The CTUIR and many other U.S. tribes are engaged in traditional and cultural practices that may result in increased risk of disease due to cumulative PAH exposures from traditionally-smoked foods, air exposure from traditional smoking of foods, and ambient air pollution. This Outreach Core builds on strengths and resources within the Tribal community and is facilitating the Tribal communities' abilities to evaluate their PAH exposures and design risk reduction strategies.

*Results:* The Community Outreach Core held a symposium focused on conducting research with Tribal Communities, including Tribal legal issues, research ethics, concepts in indigenous and western science, and integration of sociocultural health indicators in Tribal risk research. It was attended by 85 university researchers, members of the public, and public agency staff. Also a unique Material and Data Sharing Agreement was developed and signed by all three parties, CTUIR, OSU, and the Pacific Northwest National Laboratories, and it is being used by all investigators in the Oregon State University SRP Center who are working with CTUIR data.

**Applying Toxicogenomics and Biomolecular Technologies to Environmental Monitoring, Risk Assessment, and Bioremediation (University of San Diego Superfund Research Center)**

*Project Type:* Research, Community Outreach, Capacity-Building (Superfund Research Program Research Translation Core)

*Population:* Native American - 29 Palms Band of Mission Indians

*Description:* Biomarkers developed by the UCSD Superfund Research Program scientists are being evaluated, in partnership with tribal labs, for environmental monitoring of water quality to be used as effective tools for detecting Superfund toxicants in contaminated watersheds.

*Results:* Important gaps persist in the tribal institutional capacity to access the most effective technologies to protect the environment and human health. Working in close partnership with the 29 Palms Band of Mission Indians, the UCSD Research Translation Core completed the transfer of a tried-and-true biomolecular assay for dioxin-screening. This effort serves as an effective model for building the institutional capacity of tribes to utilize cutting-edge molecular assays developed by the UCSD Superfund Research Center to address priority issues in Indian Country.

### **University of Cincinnati, Midwest Consortium for Hazardous Waste Worker Training**

*Project Type:* Educational, Training, Capacity-Building, Outreach

*Population:* American Indian, Native American (Three Affiliated Tribes - <http://www.mhanation.com/main/main.html>)

*Description:* Headed by the University of Cincinnati, the Midwest Consortium for Hazardous Waste Worker Training (MWC) will conduct training for workers who may be exposed to hazardous materials through established centers in eight states (IL, IN, KY, MI, MN, OH, TN, WI) and on the Reservation of the Three Affiliated Tribes (TAT) with the focus on emergency response training needs around oil rig drilling within TAT Reservation Boundaries in North Dakota.

*Results:* For the Three Affiliated Tribes, fire department training is needed to deal with different types of flammable chemicals, suits, and different types of breathing apparatus as a result of the increase in hazardous material and waste on the reservation and transportation accidents associated with increased oil rig drilling. For the period of August 1, 2010 to July 31, 2011, approximately 564 hours of training was conducted for 141 Native Americans.

*Publication/Reference:* <http://www.niehs.nih.gov/careers/hazmat/awardees/midwest.cfm>

### **The Workplace Safety Training Program (WST) at Jefferson State Community College (JSCC)**

*Project Type:* Educational, Training, Capacity-Building, Outreach

*Population:* Native American

*Description:* The Workplace Safety Training Program (WST at Jefferson State Community College (JSCC) in Birmingham, Alabama continued to deliver model NIEHS-Worker Training Program training to two worker populations under the Hazardous Waste Worker Training Program. The overall goal is to prevent harm to Native American tribal members and employees and public safety personnel. The program trained these workers to protect themselves and their communities from hazardous materials (hazmats) encountered in workplaces and during emergency response operations. Training was conducted under the Hazardous Waste and the Hazmat Disaster Preparedness Training Programs.

### **Hazardous Waste Worker Training Program**

*Project Type:* Training

*Population:* Native American

*Description:* During the FY 2011 grant year, 991 members of Native American tribes and public safety agencies were directly trained by JSCC instructors in 40 grant-funded classes, for a total of 8,664 contact hours of direct training. In addition, 25 courses conducted by Native American peer trainers who trained 452 workers at public safety facilities and Native American tribal settings for a total of 5,833 hours of secondary training. In all, 1,443

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trainees attended 65 classes for a total of 14,497 contact hours of grant-funded direct and secondary training.

JSCC continued to provide training for Native Americans through a partnership with the Native American Fish and Wildlife Society (NAFWS). A total of fifteen courses in First Responder Awareness Level, First Responder Operations Level, Incident Management Systems, Clandestine Drug Lab Awareness, Weapons of Mass Destruction Awareness, Radiological/Nuclear Awareness, and Mass Casualty Incident Triage were conducted this year for NAFWS.

Most Native American trainees are tribal members, including tribal employees of natural resource, law enforcement, emergency medical, fire service, and public works agencies. Some non-Native employees of tribal or federal agencies also attend. The Native American trainee population continues to be very interested in preparing for emergencies that may occur at locations such as transportation corridors crossing tribal lands. As a result, significant interest in hazmat first responder courses and Mass Casualty Incident courses will continue. The tribes also continue to show strong interest in Clandestine Drug Lab Awareness training, no doubt because of the continuing methamphetamine epidemic on tribal lands.

**Hazmat Disaster Preparedness Training Program:** During the grant year, 113 Native American and public safety responders were trained in nine courses for a total of 1040 contact hours. These courses were conducted to prepare responders to recognize the hazards that may be present in the event of a disaster, whether natural or man-made, which may involve hazardous materials.

JSCC provided disaster preparedness to Native American responders through a relationship with the Native American Fish and Wildlife Society (NAFWS). One eight-hour Responder Safety Awareness Course was attended by 18 trainees. One 16-hour Basic Incident course was attended by 17 trainees. These courses reached a total of 35 Native American responders in 416 contact hours.

Two courses, a Basic Disaster Life Support course and a Radiological and Nuclear Awareness course, were scheduled for a Native American tribe in Alabama during May. However, they were cancelled after tornadoes hit Alabama on April 27. The tribe planned extensive involvement of their response personnel in the recovery efforts and did not feel they could reschedule them within the grant year.

*Publication/Reference:* “Hazardous Materials and Emergency Response Training For Tribes” and “Preparing For Disasters.”

<http://www.niehs.nih.gov/careers/hazmat/programs/awardees/uab/index.cfm>

**NATIONAL INSTITUTE OF GENERAL MEDICAL SCIENCES (NIGMS)**

The mission of the National Institute of General Medical Sciences is to support basic biomedical research (<http://www.nigms.nih.gov/Research/>) that increases understanding of life processes and lays the foundation for advances in disease diagnosis, treatment, and prevention. NIGMS-funded researchers seek to answer important scientific questions in fields such as cell biology, biophysics (<http://www.nigms.nih.gov/About/Overview/CBB.htm>), genetics, developmental biology (<http://www.nigms.nih.gov/About/Overview/gdb.htm>), pharmacology, physiology, biological chemistry (<http://www.nigms.nih.gov/About/Overview/ppbc.htm>), bioinformatics, computational biology (<http://www.nigms.nih.gov/About/Overview/cbcb.htm>), selected aspects of the basic behavioral sciences, and specific cross-cutting clinical areas that affect multiple organ systems. NIGMS also provides leadership in training (<http://www.nigms.nih.gov/Training/default.htm>) the next generation of scientists and increasing the diversity of the scientific workforce to assure the vitality and continued productivity of the research enterprise. Several AI/AN/NA activities are supported through the NIGMS Minority Opportunities in Research (MORE) Division.

### **Native American Research Centers for Health (NARCH)**

*Project Type:* Research, Training, Capacity-Building.

*Population:* American Indian, Alaska Native, Native American

*Description:* In collaboration with the Indian Health Service, NARCH supports partnerships between AI/AN tribes or tribally-based organizations and institutions that conduct intensive academic-level biomedical, behavioral, and health services research. This collaboration is designed to enhance and expand the capacity and skills of tribal organizations and Native American researchers to conduct high-quality biomedical and behavioral health research and to apply successfully for competitive research grants.

*Results:* There are 18 active NARCH Centers, with representation from more than 450 AI/AN/NA tribes. Hundreds of AI/AN/NA science students and researchers, from high school to graduate school, have participated. Many AI/AN junior faculty have started their first grant-funded research with NARCH funds and half of the NARCH Centers have already progressed to receiving direct NIH grants.

### **Bridges to the Baccalaureate Program**

*Project Type:* Training

*Population:* American Indian, Alaska Native, Native American

*Description:* The Bridges to the Baccalaureate program is designed to help students make the transition from two-year post-secondary educational institutions to four-year baccalaureate-degree granting colleges and universities. Examples of activities supported through the Bridges program include: laboratory research experiences, mentoring and academic counseling programs, curriculum enrichment, visiting lectureships, and course

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development. The program aims to increase the number of students from groups underrepresented in the biomedical and behavioral research enterprise and/or populations disproportionately affected by health disparities (targeted groups).

*Results:* The Minority Opportunities in Research Division (MORE) Division at NIGMS currently supports several Tribal Colleges through partnerships with major institutions. These include the University of New Mexico-Gallup Branch Community College, Diné College at Tsaile, and Diné College at Shiprock (through New Mexico State University); Blackfeet Community College, Chief Dull Knife College, Red Crow Community College, Stone Child College, and Salish Kootenai College (through University of Montana-Missoula); Haskell Indian Nations University (through University of Kansas); Fond du Lac Tribal and Community College (through University of Minnesota-Duluth); and Fort Belknap College, Fort Peck Community College, Stone Child College, Little Big Horn College, and Chief Dull Knife College (through Montana State University- Bozeman). The expected long-term outcome of NIGMS's ongoing training activities is greater participation of students from populations currently underrepresented in the sciences. More specific goals and measures are outlined in applicants' funding proposals, and they vary from institution to institution. These outcomes are peer-reviewed when grantees submit renewal applications at the end of their funding period, and they are only one consideration in providing continued funding for a program.

The Bridges programs listed above are successful in meeting their goals and objectives. One program in particular at New Mexico State University has enjoyed great success, in spite of the considerable distance among the partner institutions, the UNM-Gallup Branch Community College and Diné College at Shiprock. This program is hugely successful with 70% of the students transferring to four-year colleges and completing their bachelor's degree.

### **The Institutional Research and Academic Career Development Award (IRACDA)**

*Project Type:* Training

*Population:* American Indian, Alaska Native, Native American

*Description:* IRACDA combines a traditional, mentored, postdoctoral research experience with an opportunity to develop academic skills through workshops. The primary goal of the IRACDA program is to develop a diverse group of highly-trained biomedical and behavioral scientists to address the nation's biomedical, behavioral, and clinical research needs. Other goals are to develop a cadre of researchers to motivate the next generation of scientists at minority-serving institutions (MSIs) and to promote linkages between research-intensive institutions and MSIs that can lead to further collaborations in research and teaching.

*Results:* The MORE Division at NIGMS currently provides support to the University of Kansas which partners with Haskell Indian Nations University, University of Minnesota-Duluth which partners with Fond du Lac CC and Lake Superior College, and University of North Carolina which partners with the University of North Carolina at Pembroke. These

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programs support a number of postdoctoral scholars who are classified as American Indian, Alaska Native, or Native American.

The expected long-term outcome of NIGMS's ongoing career development is greater participation of students from underrepresented populations in science. More specific goals and measures are outlined in applicants' funding proposals, and they vary from institution to institution. These outcomes are peer-reviewed when grantees submit renewal applications at the end of their funding period, and they are one consideration in providing continued funding for a program.

**Initiative for Minority Student Development (IMSD)**

*Project Type:* Training

*Population:* American Indian, Alaska Native, Native American

*Description:* The IMSD encourages domestic private and public educational institutions with fully developed and funded research programs to initiate and/or expand innovative programs to improve the academic and research capabilities of underrepresented minority students and to facilitate their progress toward careers in biomedical research. The application may be directed toward the development of underrepresented minority scientists who are in any phase of their career development, from the undergraduate level through the PhD. Awards under this program use the institutional education project grant mechanism.

*Results:* The MORE Division at NIGMS currently provides support to Montana State University and the University of Arizona, which have a significant number of Native American students in their IMSD program.

The expected long-term outcome of NIGMS's ongoing training activities is greater participation of students from underrepresented groups in the biomedical sciences. More specific goals and measures are outlined in applicants' funding proposals, and they vary from institution to institution. These outcomes are peer-reviewed when grantees submit renewal applications at the end of their funding period, and they are only one consideration in providing continued funding for a program.

**Research Initiative for Scientific Enhancement (RISE)**

*Project Type:* Training, Educational, Capacity-Building

*Population:* American Indian, Alaska Native, Native American

*Description:* The RISE program provides support for faculty and student development activities, which can include on- or off-campus workshops, specialty courses, travel to scientific meetings, and research experiences at on- or off-campus laboratories. Support is available for evaluation activities as well. RISE also offers some support for institutional development, which includes limited funds for the renovation or remodeling of existing facilities to provide space for an investigator to carry out developmental activities, limited equipment purchases, and the development of research courses.

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*Results:* The MORE Division at NIGMS currently provides support to Salish Kootenai College, Haskell Indian Nations University, and the University of North Carolina at Pembroke. A total of 15 students participated in RISE-sponsored developmental activities at these institutions.

The expected long-term outcome of NIGMS's ongoing training activities is greater participation of students from underrepresented groups in science. More specific goals and measures are outlined in applicants' funding proposals, and they vary from institution to institution. These outcomes are peer-reviewed when grantees submit renewal applications at the end of their funding period, and they are one consideration in providing continued funding for a program.

### **MARC Ancillary Training Activities**

*Project Type:* Community Outreach, Educational

*Population:* American Indian, Alaska Native, Native American

*Description:* The MORE Division at NIGMS has formed relationships with professional scientific societies to develop innovative programs aimed at increasing the number of biomedical scientists from minorities and other underrepresented populations. These societies include the American Society for Cell Biology, the American Society for Microbiology, the Society for Advancement of Chicanos and Native Americans in Science, and the Federation of American Societies for Experimental Biology. With NIGMS support, the societies have sponsored activities that engage students and faculty members in the biomedical sciences, including visiting scientist programs, summer research opportunities, and scholarships enabling attendance at national scientific meetings and conferences.

*Results:* The MORE Division at NIGMS currently provides support to the Society for Advancement of Chicanos and Native Americans in Science. The annual SACNAS conference is attended by a large number of Native American students.

### **Community Outreach**

*Project Type:* Community Outreach

*Population:* American Indian, Alaska Native, Native American

*Description:* The MORE Division at NIGMS is actively engaged in staff outreach visits to MSIs to explain new program requirements, review incoming applications, and monitor ongoing programs. In addition, NIGMS staff make presentations at regional workshops, targeted at MSIs not currently funded by NIGMS, to introduce the workshop participants to NIH and NIGMS and familiarize them with the Institute's efforts to recruit minorities into science careers. NIGMS also provides outreach through several websites designed to provide information on ongoing NIGMS minority programs and initiatives. In addition to staff outreach efforts, NIGMS provides extramural funding for technical assistance activities performed by third parties, such as professional societies.

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*Results:* The MORE staff routinely attends meetings such as AISES and SACNAS. In 2010 and 2011, the MORE staff attended the annual Native Health Research Conference in Rapid city, South Dakota, and Niagara Falls, New York.

The MORE staff also makes site visits to gain firsthand exposure to the needs and resources of the TCU, learn about the challenges that American Indian students and Tribal Colleges face in pursuit of their educational goals, and provide information and guidance to TCU faculty and administrators on grant availability from NIH.

**NATIONAL INSTITUTE OF MENTAL HEALTH (NIMH)**

The mission of the National Institute of Mental Health (NIMH) is to transform the understanding and treatment of mental illnesses through basic and clinical research, paving the way for prevention, recovery, and cure. For the Institute to continue fulfilling this vital public health mission, it must foster innovative thinking and ensure that a full array of novel scientific perspectives are used to further discovery in the evolving science of brain, behavior, and experience. In this way, breakthroughs in science can become breakthroughs for all people with mental illnesses.

**Can Medicaid Benefits Reduce Access Disparities for Minority Children & Youth?**

*Project Type:* Research

*Population:* Low-income white and ethnic minority children and youth including AI/AN/NA

*Description:* The study goal is to examine the aggressive enforcement of Medicaid's (Medi-Cal's) Early Periodic Screening Diagnosis and Treatment program (EPSDT) to learn whether reducing important structural barriers to public mental health care will equalize spending and treatment patterns among low-income white and ethnic minority children and youth including those from American Indian/Alaska Native American populations in California.

**Developing Community-Based Interventions for American Indian Mental Health**

*Project Type:* Career Development

*Population:* American Indian (with a focus on Navajo youth and their families)

*Description:* This career development award is designed to provide comprehensive mentored research training in community-based mental health services for American Indian adolescents (age 12-16), with a focus on Navajo youth and their families. The training includes coursework, mentoring, and applied research related to developing and implementing culturally tailored mental health services.

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*Results:* Results of the first phase of the research have been presented at two national conferences and manuscripts for publication are currently under review.

**Gene-Environment Interplay, Development, and Emotional Disorders**

*Project Type:* Mentoring, Career Development

*Population:* American Indian, Alaska Native

*Description:* Through this mentored career development award, a clinical psychologist will use a genome-wide association-informed candidate gene approach to investigate gene-by-environment interactions on the development of anxiety and depression across several different environmental risk categories. Two existing longitudinal samples, the Caring for Children in the Community sample and the Great Smoky Mountain Study sample, will be employed.

*Publication/Reference:* Copeland WE, Magnusson A, Göransson M, Heilig MA. Genetic moderators and psychiatric mediators of the link between sexual abuse and alcohol dependence. *Drug Alcohol Depend.* 2011 Jun 1; 115(3):183-9. Epub 2010 Dec 28. PMID: 21193270

Copeland W, Shanahan L, Costello EJ, Angold A. Cumulative prevalence of psychiatric disorders by young adulthood: a prospective cohort analysis from the Great Smoky Mountains Study. *J Am Acad Child Adolesc Psychiatry.* 2011 Mar; 50(3):252-61. Epub 2011 Jan 26. PMID: 21334565

Costello EJ, Erkanli A, Copeland W, Angold A. Association of family income supplements in adolescence with development of psychiatric and substance use disorders in adulthood among an American Indian population. *JAMA.* 2010 May 19; 303(19):1954-60. PMID: 20483972

**Lumbee Rite of Passage: A Suicide Prevention Model for American Indian Youth**

*Project Type:* Research

*Population:* American Indian - Lumbee Tribe

*Description:* The overall goal of this study is to determine the impact of cultural programs, specifically a culture class (“Lumbee Rite of Passage for Life”) on suicidal ideation among American Indian adolescents between the ages of 12 and 17 years. The intervention will be delivered at three tribally owned Boys and Girls Clubs.

### **Indigenous HIV/AIDS Research Training (IHART) Program**

*Project Type:* Research, Educational

*Population:* American Indian, Alaska Native

*Description:* I-HART was developed to increase the number of AI/AN health researchers to successfully garner major grants for Tribal priority health issues. The I-HART program will target junior and mid-career AI/AN community/tribal-based researchers and AI/AN university-based researchers to hone their competitive grant making skills for mental health and HIV/AIDS research grant acquisition.

### **Mental Health and Diabetes among Ojibwe Adults**

*Project Type:* Research

*Population:* American Indian - Ojibwe Tribe

*Description:* This project aims to identify and understand culturally-specific mental health and substance use issues comorbid with Type 2 Diabetes (T2D) and further investigate the impact of such comorbidity on treatment compliance and health behaviors among Ojibwe adults by way of community-based participatory research (CBPR).

### **Mental Illness and Community Reentry in a Multi-Ethnic Population of Female Inmates**

*Project Type:* Research

*Population:* American Indian

*Description:* The project will assess the role of mental illness among Hispanic, Native American, and White women moving to rural environments from prison, examine their provision of social support in the reentry process, and determine strategies to strengthen and sustain their community connections and access to formal and informal helping resources.

### **The Mentorship in Mental Health Research Program**

*Project Type:* Research, Educational, Training

*Population:* American Indian

*Description:* This program develops TCU faculty who conduct high quality, culturally appropriate, and community-supported mental health research among AI/AN/NA communities. Current mentorship projects include projects between the University of Nebraska at Lincoln, Nebraska and the Sinte Gleska University, Antelope, South Dakota; University of Washington, Salish Kootenai College, and the Tribal College and University of The Confederated Salish and Kootenai Tribes; and Vanderbilt University and the United South and Eastern Tribes, Inc. (USET).

### **Mid-Career Investigator Award: Suicidal Behaviors**

*Project Type:* Mentoring, Career Development

*Population:* Adolescents, including American Indian and Native American youth

*Description:* This award supports an overall research program, ongoing career development activities, and mentoring in the area of interventions for suicidal youth. Specific projects include participation in the cross-site evaluation of the suicide prevention programs funded via the Garrett Lee Smith Memorial Suicide Prevention Act, including programs focused on AI/NA populations, and a treatment development and effectiveness study of a community-based suicide prevention program collaboratively developed with the Ojibwe reservations in the upper Midwest.

*Publication/Reference:* Goldston DB, Walrath CM, McKeon R, Puddy RW, Lubell KM, Potter LB, Rodi MS. The Garrett Lee Smith memorial suicide prevention program. *Suicide Life Threat Behav.* 2010 Jun; 40(3):245-56. PMID: 20560746

Heilbron N, Compton JS, Daniel SS, Goldston DB. The Problematic Label of Suicide Gesture: Alternatives for Clinical Research and Practice. *Prof Psychol Res Pr.* 2010 Jun 1; 41(3):221-227. PMID: 20640243

Daniel SS, Goldston DB, Erkanli A, Franklin JC, Mayfield AM. Trait anger, anger expression, and suicide attempts among adolescents and young adults: a prospective study. *J Clin Child Adolesc Psychol.* 2009 Sep; 38(5):661-71. PMID: 20183651

### **National Native American Youth Initiative**

*Project Type:* Training, Educational

*Population:* American Indian, Alaska Native

*Description:* The National Native American Youth Initiative is an intense academic enrichment and reinforcement program designed to better prepare AI/AN high school students to remain in the academic pipeline and pursue a career in the health professions and/or biomedical research.

### **Research Supplements to Promote Diversity in Health-Related Research**

*Project Type:* Training

*Population:* Underrepresented racial and ethnic groups (including AI/AN/NA populations), individuals with disabilities, and individuals from disadvantaged backgrounds

*Description:* This program promotes diversity in the biomedical, behavioral, clinical, and social sciences research workforce by providing support to individuals at the high school, undergraduate, graduate, postdoctoral, and investigator career stages who come from groups that have been shown to be underrepresented in science.

## **Resilience through the High School Years**

*Project Type:* Research

*Population:* American Indian - Ojibwe Tribe

*Description:* This project is a longitudinal study of cultural and individual factors which influence risk and resilience for mental, emotional, and behavioral disorders in Ojibwe participants. The prospective study follows children through high school, a period of increased risk for emotional, behavioral, and substance use problems. This study will show the progression of mental health and substance use disorders among a large sample of indigenous adolescents.

*Results:* The investigators are in the process of fitting highly sophisticated multi-wave models of mental health trajectories. This type of modeling has never been done with indigenous adolescents. Preliminary data suggest that there is an important prevention/intervention window for Indigenous early adolescents at ages 10-12 years prior to early use and early psychological symptoms associated with use. Findings indicate that delaying onset of use by intervening during this critical period could have substantial effects on long term substance use outcomes.

*Publication/Reference:* Cheadle JE, Whitbeck LB. Alcohol use trajectories and problem drinking over the course of adolescence: a study of north American indigenous youth and their caretakers. *J Health Soc Behav.* 2011; 52(2):228-45. Epub 2011 May 10. PMID: 21558489

Whitbeck LB. The beginnings of mental health disparities: emergent mental disorders among Indigenous adolescents. *Nebr Symp Motiv.* 2011; 57:121-49. PMID: 21166307

Whitbeck LB, Walls ML, Johnson KD, Morrisseau AD, McDougall CM. Depressed affect and historical loss among North American Indigenous adolescents. *Am Indian Alsk Native Ment Health Res.* 2009; 16(3):16-41. PMID: 20052631

Whitbeck LB, Crawford DM. Gestational risks and psychiatric disorders among indigenous adolescents. *Community Ment Health J.* 2009 Feb; 45(1):62-72. Epub 2008 Nov 8. PMID: 18998209

## **Virtual Mentoring to Enhance Diversity of the Mental Health Research Workforce**

*Project Type:* Research

*Population:* Diverse populations, including American Indian, Alaska Native, and Native American

*Description:* The long-term goal of this project is to create a cadre of mental health researchers studying suicide prevention who are members of, or interested in working with, diverse populations through specific virtual and face-to-face interactive programs, career development opportunities, and tailored mentoring.

**NATIONAL INSTITUTE ON MINORITY HEALTH AND HEALTH DISPARITIES (NIMHD)**

The National Institute on Minority Health and Health Disparities leads scientific research to improve minority health and eliminate health disparities. To achieve its mission, NIMHD plans, reviews, coordinates, and evaluates all minority health and health disparities research and activities of the National Institutes of Health; conducts and supports research on minority health and health disparities; promotes and supports the training of a diverse research workforce; translates and disseminates research information; and fosters innovative collaborations and partnerships.

The NIMHD is the focal point for the scientific enterprise of the improvement in the health of racial/ethnic minority and other populations with health disparities. The Patient Protection and Affordable Care Act (P.L. 111-148) affords NIMHD a leadership role at the NIH in the planning, review, coordination, and evaluation of minority health and health disparities research activities conducted by NIH Institutes and Centers. The framework for activities is guided by the *NIH Health Disparities Strategic Plan and Budget*, a comprehensive document that sets the overarching health disparities agenda for the entire agency. The plan focuses on support for basic, clinical, social, epidemiological, and behavioral research as well as promoting research infrastructure, research training, and dissemination of information to health disparity communities.

### **American Indian and Alaska Native Health Disparities**

*Project Type:* Research Project, Training, Community Outreach, Educational

*Population:* American Indian, Alaska Native

*Description:* This NIMHD Center of Excellence conducts projects leading to understanding and improving:

1. The detection and management of depression in primary care
2. The contribution of traditional healing practices to reduce risk of diabetes and cardiovascular disease
3. The availability of Medicaid insurance on patient outcomes and survival among cancer patients
4. The built environment in increasing physical activity levels and select metabolic health outcomes
5. The early psychosocial interventions for injury survivors at high risk of posttraumatic stress disorder
6. The evidence based follow up of cancer survivors by tribal health care providers
7. The elevated risk of chronic liver disease
8. The communication of risk information on renal disease to patients with type 2 diabetics
9. The implicit racial biases and stereotypes of primary care providers
10. Oral health prevention for young children

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*Publication/Reference:* Racial disparities in health status: a comparison of the morbidity among American Indian and US adults with diabetes. O'Connell J, Yi R, Wilson C, Manson SM, Acton KJ. Diabetes Care. 2010 Jul;33(7):1463-70. Epub 2010 Mar 31. PMID: 20357367

**Oklahoma Center on American Indian Diabetes Health Disparities**

*Project Type:* Research, Training, Community Outreach, Educational  
*Population:* American Indian

*Description:* The purpose of the Oklahoma Center for American Indian Diabetes Health Disparities (OCAIDHD) is to reduce and eventually eliminate the excess mortality, morbidity, and quality of life and culture lost by American Indians due to diabetes. The primary focal areas of the OCAIDHD will be on diabetes, maternal health, infant mortality, and obesity. The OCAIDHD confronts health disparities by focusing the expertise of a multi-disciplinary, multi-college team of diabetes researchers on specific biological, physiological, behavioral, and cultural stressors of the disease.

**Center for Health Research in Tribes in SD-MT-WY**

*Project Type:* Research Project, Training, Community Outreach, Educational  
*Population:* American Indian

*Description:* The Center for Health Research with Aberdeen Area Tribes advances the science of health disparities through the conduct of a research study on a treatment for urinary incontinence in American Indian women and the evaluation of a model for preconception health promotion in young American Indian women.

Activities to support American Indian students wishing to pursue careers in health professions and/or research include:

1. Support and coordination of an undergraduate American Indian retention program
2. Establishment of undergraduate summer research experiences for American Indians
3. Development of a health disparities educational seminar series
4. Distribution of cultural awareness materials developed for the research community
5. Support of American Indian cultural committee activities in order to increase the dissemination and utilization of scientific and health information relevant to health diversity populations. Community Outreach activities provide technical assistance, training, and support to tribal health and physical activities programs in order to conduct Community Child Health Needs Assessments and to develop tribally-tailored programs to prevent and reduce childhood obesity

### **Consortium for Community-Based Research in Native American Health**

*Project Type:* Research Project, Training, Community Outreach, Educational

*Population:* American Indian

*Description:* This project aims to redress the health concerns and reverse the health disparities experienced by American Indians living in Montana. The Consortium for Community-Based Research (CBPR) in Native American Health was developed out of a dual request by American Indian communities seeking to replicate successful CBPR projects and by researchers seeking an entree to address American Indian health concerns and disparities. The project's specific aims are to:

1. Establish an enduring, adaptable and conducive infrastructure for researchers, medical and public health practitioners, and American Indian community members to address the health disparities faced by Montana's American Indian populations
2. Develop 12-25 CBPR pilot projects that address needs identified by American Indian communities
3. Develop mentoring relationships for students to actively engage in research dealing with health issues of Montana's American Indians
4. Develop an understanding of the community structures and processes to address concerns and disparities

*Publication/Reference:* Community-based participatory research in Indian Country: improving health through water quality research and awareness. Cummins C, Doyle J, Kindness L, Lefthand MJ, Bear Dont Walk UJ, Bends AL, Broadaway SC, Camper AK, Fitch R, Ford TE, Hamner S, Morrison AR, Richards CL, Young SL, Eggers MJ. *Fam Community Health*. 2010 Jul-Sep; 33(3):166-74. PMID: 20531097

Contextualizing CBPR: Key Principles of CBPR meet the Indigenous research context. Laveaux D, Christopher S. Pimatisiwin. 2009 Jun 1; 7(1):1. PMID: 20150951

### **Child Safety Seat Intervention for Pacific Northwest Tribes**

*Project Type:* Research

*Population:* American Indian

*Description:* Using a community based participatory research model, partners from Northwest tribes, Northwest Portland Area Indian Health Board, and Harborview Injury Prevention Center at University of Washington are implementing child safety interventions in six Northwestern tribal communities. Qualitative interviews and focus groups determined the barriers to appropriate restraint use, worked with tribes to design and carry out culturally appropriate interventions, and conduct observational vehicle surveys at three discrete time points over the five years. Tribes will be involved in every facet of the research process, including interpretation and future planning based on results.

### **Using CBPR to Implement Smoking Cessation in an Urban American Indian Community**

*Project Type:* Research

*Population:* American Indian, Alaska Native

*Description:* This All Nations Breath of Life (ANBL) intervention is designed to address the high smoking and low quit rates among AI/AN. This culturally-tailored smoking cessation program was developed by the American Indian Health Research and Education Alliance, a partnership organization composed of the Kansas University Medical College (KUMC) and several community-based organizations. The ANBL intervention has been developed and pilot tested and is being implemented in the urban AI/AN community of the Kansas City Metroplex. One of the aims of this project is infrastructure development for the Heart of America Indian Center, the proposed primary implementation site for the ANBL intervention.

*Publication/Reference:* All Nations Breath Of Life: Using Community-Based Participatory Research to Address Health Disparities in Cigarette Smoking among American Indians. Christine Makosky Daley, K. Allen Greiner, Niaman Nazir, Sean M. Daley, Cheree L. Solomon, Stacy L. Braiuca, T. Edward Smith, Won S. Choi. *Ethn Dis.* 2010 Autumn; 20(4): 334–338. PMID: PMC3061617

### **Native Navigators across the Cancer Continuum (NNACC)**

*Project Type:* Research

*Population:* American Indian

*Description:* The Native Navigators Across the Cancer Continuum (NNACC) is a CBPR project based on partnerships among three American Indian communities in Colorado, South Dakota, and Michigan. The goal of this project is for the partners to collaborate, refine, expand, and adapt various navigator models used within each partners' setting to address American Indian community and patients' needs throughout the continuum of cancer care. Through collaboration, the NNACC partners' share successful components of their ongoing navigation models and refine, adapt, and expand existing programs to be relevant to their local American Indian communities and clinical settings. Outcome measures include, but are not limited to, comprehensive navigator-in-service training programs, community education interventions, evaluation data documenting an increase in community participants' knowledge and intended behaviors, tracking data documenting increased and timely access to diagnostic and treatment services, and documentation of dissemination of findings to community participants, their respective communities, and others.

### **Impact of Pneumococcal Conjugate Vaccine on Disease and Colonization among Native American Communities**

*Project Type:* Research

*Population:* American Indian - Navajo, White Mountain Apache

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*Description:* The broad, long-term objective of this research project is the reduction of pneumococcal disease among Navajo and White Mountain Apache communities and, by extension, epidemiologically similar communities domestically and internationally, through the implementation of highly effective pneumococcal vaccine strategies. The specific objective of this project is the investigation of the mechanism, at a population level, and the impact of 13-valent pneumococcal conjugate vaccine introduction on pneumococcal ecology, population transmission dynamics, and pneumococcal invasiveness characteristics resulting from vaccine induced antibody pressure. The researchers are studying systematically the circulating disease-causing and nasopharyngeal-colonizing strains of *Streptococcus pneumoniae* (pneumococcus) among Navajo and White Mountain Apache communities which are at high-risk for pneumococcal disease.

### **Central Plains Center for American Indian Health Disparities**

*Project Type:* Research, Training, Community Outreach, Educational  
*Population:* American Indian

*Description:* The goal of the Central Plains Center for American Indian Health Disparities (CPC-AIHD) center of excellence is to reduce health disparities among American Indians in the Central Plains through quality community-based participatory research (CBPR) and enhanced opportunities for American Indian students to enter the health professions through pipeline programs from high school through college and into graduate and medical school. The specific aims for the CPC-AIHD are to:

1. Create an interdisciplinary, CBPR center for health disparities research in American Indian communities in the Central Plains
2. Provide methodological support to health disparities
3. Create an educational pipeline from high school to graduate school in a health profession for American Indian high school students
4. Enlist the help of the local and regional American Indian communities in all parts of the research process through Community Advisory Boards and research staff

*Publication/Reference:* A longitudinal study of tobacco use among American Indian and Alaska Native tribal college students. Babalola Faseru, Christine M Daley, Byron Gajewski, Christina M Pacheco, Won S Choi BMC Public Health. 2010; 10: 617

### **Building Research Infrastructure for the Crow Community**

*Project Type:* Research Project, Training, Research Infrastructure  
*Population:* American Indian - Crow

*Description:* This NIMHD Building Research Infrastructure and Capacity project supports the development of research, education, and faculty development capacity at Little Big Horn College (LBHC). The long-term goal is to prepare better LBHC American Indian students in science and mathematics for transfer to four-year institutions, graduate study, and employment to address widespread health disparities on the Crow Reservation.

### **Native American Summer Research Internship in Maternal/Child Health**

*Project Type:* Educational  
*Population:* American Indian

*Description:* This project is an innovative Summer Research Internship in Maternal and Child Health at the University of Utah for American Indian (AI) undergraduates. The internship combines basic and clinical research experiences with didactic educational sessions devoted to research design and ethics. Participants will also engage in complementary learning experiences, including opportunities to develop test-taking and writing skills, health-related community outreach, and shadowing health professionals and educators.

The internship was developed using principles of community engagement. Talking circles with the AI elders, faculty, and students have provided important insights into the needs and goals of AI students considering scientific and health careers. The goals of this program are to address educational disparity and to increase diversity in the health and scientific workforce by supporting the academic and experiential development of undergraduate AI students.

### **Improving Montana Community Health through Graduate Education**

*Project Type:* Educational  
*Population:* American Indian

*Description:* The goal of Improving Montana Community Health through Graduate Education is to increase community capacity to reduce health disparities in the state by supporting under-represented minority graduate students in biomedical and behavioral sciences, who have strong ties to underserved Montana communities. The specific aims are to:

1. Actively and personally recruit potential scholars statewide, providing mentorship throughout the application process
2. Help scholars envision and plan how they can use their graduate programs to address health disparities or improve health in their home communities, by providing opportunities to learn about community-based participatory research, and by connecting them with existing tribal college-university networks and appropriate MSU advisors
3. Provide scholars with financial assistance and academic support for key areas of their graduate education not being addressed by existing MSU resources
4. Provide scholars with professional development opportunities that will help them succeed both in the academic world and in their home communities
5. Explore whether integrating a CBPR option into graduate research will increase underrepresented minority students' recruitment into, retention in, and satisfaction with, graduate education, thereby also increasing their community's capacity to address local health issues, and disseminate what is learned

### **Elluam Tungiinun - Toward Wellness**

*Project Type:* Research Project

*Population:* Alaska Native

*Description:* Alaska Natives face significant health disparities associated with alcohol use disorders and suicide. Elluam Tungiinun is a Yup'ik Eskimo term translatable as "towards wellness." Elluam Tungiinun (ET) is a culturally-based preventative intervention to reduce suicide risk and co-morbid underage drinking among Alaska Native Yup'ik Eskimo youth. The ET process approach contextualizes its intervention program to the local needs and culture of each rural Alaska community it serves through a set of intensive community co-researcher adaptation process procedures. The project seeks to:

1. Reduce the most significant source of health disparity of public health importance disproportionately affecting Alaska Natives and American Indians
2. Advance CBPR methods in health related research with tribal communities and other ethnic minority, low socioeconomic status, medically underserved, and rural populations
3. Enhance understanding of factors predictive of health among indigenous and other ethnic minority groups

### **The Native Proverbs 31 Health Project**

*Project Type:* Research Project

*Population:* American Indian - Lumbee

*Description:* Cardiovascular disease (CVD) rates have increased dramatically among American Indians in recent years. Modifiable CVD risk factors, such as obesity, type 2 diabetes, sedentary behavior, and tobacco use are generally higher in most American Indian communities compared to non-Hispanic whites, although there is limited understanding of the unique cultural aspects of appropriate CVD primary prevention strategies in these populations. This project is designed to develop, implement, and evaluate a CVD prevention program (e.g. modifications in diet, physical activity, and tobacco use) among Lumbee Indian women in Robeson County, NC, focusing on the biblical messages in Proverbs 31.

### **Using CBPR to Adapt a Culturally-Grounded Prevention Curriculum for Urban America**

*Project Type:* Research Project

*Population:* American Indian

*Description:* American Indian families now living in urban areas experience disproportionate health disparities associated with substance abuse and risky sexual behavior, but few evidence-based prevention approaches exist to prevent, reduce, and eliminate health disparities among this rapidly growing population. Family disruption, stresses related to poverty and rural-to-urban migration, and loss of cultural and social

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connections frequently operate as pathways to adverse health outcomes among AI families. By strengthening family functioning (parental involvement, family support, parental monitoring, and parent-child communication), a parenting intervention can help parents strengthen culturally-relevant parenting skills that are consistent with promoting their children's health and well-being and help them serve as direct sources of influence in reducing their children's risk of substance use and risky sexual behavior. The aims of the study are to create and test a culturally-grounded parenting intervention for urban AI families through a modification of an existing prevention program, Families Preparing the Next Generation (FPNG). The adaptation will employ a Cultural Adaptation Model for adapting programs for new target populations in ways that increase cultural fit while maintaining fidelity to core components of the original program. The intervention will be adapted, piloted, evaluated, culturally validated, revised accordingly, and tested in a randomized control trial in partnership with the three largest urban Indian centers in Arizona.

### **The Roadmap to Healthy Communities: Understanding Indian Health**

*Project Type:* Conference/Scientific Meeting

*Population:* American Indian

*Description:* The goal of this project is to develop, implement, and evaluate a series of four annual conferences that will contribute to capacity building within the American Indian community of New Mexico to address their common and specific health care needs. The primary objectives for the conferences are to bring together tribal leaders and other key tribal members for a series of leadership and educational sessions. The conferences are designed to build health policy capacity within the tribes and to address shared and unique tribal health and health care issues. Tribes with successful tribal health boards will present their strategies and keys to success, and the importance of tribal health boards will be emphasized for addressing key health problems.

## **NATIONAL INSTITUTE OF NEUROLOGICAL DISORDERS AND STROKE (NINDS)**

The mission of the National Institute of Neurological Disorders and Stroke (NINDS) is to reduce the burden of neurological disease – a burden borne by every segment of society and people all over the world – through discovery of fundamental knowledge of the nervous system and application of that knowledge to better understand and address neurological disorders. To achieve its mission, NINDS invests across the spectrum of basic, translational, and clinical neuroscience research.

### **Alaska Native Stroke Registry (ANSR)**

*Project Type:* Research

*Population:* Alaska Native

*Description:* The Alaska Native Stroke Registry (ANSR) developed a state-wide surveillance system to determine the incidence of stroke in the Native Alaskan population. The ANSR was supplemented to identify novel, culturally specific barriers to vascular risk reduction and opportunities to intervene for successful stroke and heart disease prevention.

*Results:* The American Recovery and Reinvestment Act-funded pilot work has produced a survey instrument to assess multiple biological, social, and cultural factors affecting risk and outcomes of stroke and heart disease in the Alaska Native population. Information from this survey is guiding development of a culturally tailored intervention targeting vascular risk factors.

*Publication/Reference:* Horner RD, Day GM, Lanier AP, Provost EM, Hamel RD, Trimble BA. Stroke mortality among Alaska Native people. *Am J Public Health.* 2009 Nov; 99(11):1996-2000

Bernadette Boden-Albala, Eric T Roberts, Scarlett Hopkins, Bert B Boyer Applicability of a Western Model of Hypertension in a Sample of Alaskan Natives. Abstract. Accepted AHA Meetings, November, 2011

Jeremy Pomeroy, Maria Bray, Scarlett Hopkins, Bernadette Boden-Albala, William C Knowler, Bert B Boyer. Objectively measured total physical activity rather than moderate-to-vigorous activity is associated with cardiovascular risk factors in Yup'ik Eskimos. Abstract. Accepted AHA Meetings, November, 2011

### **Specialized Neuroscience Research Program (SNRP)**

*Project Type:* Training, Capacity-Building

*Population:* Alaska Native

*Description:* The Specialized Neuroscience Research Program (SNRP) cooperative agreement at the University of Alaska Fairbanks (UAF) supports infrastructure development and promotes increased efforts to recruit and retain Alaska Native and other underrepresented students to improve their success rates in biomedical career paths.

*Results:* The UAF SNRP has focused its research on basic mechanistic investigations for potential drug discovery and therapy development in diseases of interest to Alaska Natives. The program now has 12 faculty members, is well integrated into the university community, and educates students at all levels from high school to post-doctorate. Alaska Native students from the program have excelled in graduate biomedical research programs at Stanford University, the Mayo Clinic, the University of Illinois at Urbana-Champaign, and the University of California-San Diego.

## **Outreach at Annual Meetings for Medical and Scientific Societies Representing American Indians and Native Americans**

*Project Type:* Community Outreach

*Population:* Alaska Native, American Indian

*Description:* NINDS program staff members attend, and continue to be invited to, the annual meetings for the Association of American Indian Physicians (AAIP) and the Society for Advancing Chicanos and Native Americans in Science (SACNAS) to provide information to students on education and training opportunities through one-on-one interactions and networking activities.

*Results:* The one-on-one interactions, as well as the dissemination of available grant opportunities, have been reported as being most helpful to the students and early stage career investigators. In addition, the NINDS program has been invited to partner with SACNAS to participate in its Leadership Development Institute aimed at supporting graduate student researchers.

## **Summer Internship Program in the Neurological Sciences**

*Project Type:* Training

*Population:* American Indian

*Description:* The NINDS Intramural division supports an annual Summer Internship Program for academically talented and diverse high school, undergraduate, graduate, and medical students. The purpose is to provide students with stimulating and rewarding research experiences and to encourage them to pursue advanced education and future careers in neurological science research.

*Results:* The NINDS Summer Internship Program has targeted Native Americans for recruitment by developing relationships with schools and Tribal Councils on reservations, and by extending outreach to areas densely populated by Native students. In FY2011, NINDS hosted two Lakota students from the Pine Ridge Reservation and one Navajo student from Colorado. Since the program began targeting American Natives in 2007 it has supported eight Native American students, several of which repeated the internship, and with alumni currently at the University of Colorado and Princeton. Seven of the students have presented or plan to present their data at scientific meetings.

### **NATIONAL INSTITUTE OF NURSING RESEARCH (NINR)**

The National Institute of Nursing Research (NINR) supports clinical and basic research to build the scientific foundation for clinical practice, prevent disease and disability, manage and eliminate symptoms caused by illness, enhance palliative and end-of-life care, and train the next generation of scientists. By doing so, the Institute promotes and improves the health of

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individuals, families, and communities across the life span, in a variety of clinical settings and in diverse populations. The NINR, with its patient-centered research focus, is acutely cognizant of the special needs of minority and underserved populations, including American Indians/Alaska Natives. The NINR conducts a range of activities related to eliminating health disparities in underrepresented populations, including American Indian/Alaska Native, and to training new investigators underrepresented in the research community.

**Uranium in Food Grown in an American Indian Community**

*Project Type:* Research

*Population:* American Indian [Residents of the Diné (formerly known as Navajo) Reservation in Northwestern New Mexico]

*Description:* This study explores health risks of uranium exposure from harvested animals and plants on American Indians from the Diné (formerly Navajo) reservation in New Mexico. The study examines dietary behaviors, compares uranium levels in food from high versus low contamination areas, and disseminates findings to the Navajo leadership and community.

**NATIONAL LIBRARY OF MEDICINE (NLM)**

The National Library of Medicine (NLM), in Bethesda, Maryland, is a part of the National Institutes of Health, the US Department of Health and Human Services. Since its founding in 1836, the NLM has played a pivotal role in translating biomedical research into practice. It is the world's largest biomedical library and the developer of electronic information services that deliver trillions of bytes of data to millions of users every day. The Library is open to all and has many services and resources - for scientists, health professionals, historians, and the general public. The support of NIH's efforts to understand and eliminate health disparities between minority and majority populations is also an integral part of the NLM's mission, centered on the belief that improving access to affordable and easy-to-use health-related information can help solve health disparities. The NLM partners with libraries and community organizations to improve the information infrastructure and increase public awareness and use of these valuable resources, with special emphasis on rural, minority, and other underserved populations. The Library also supports a strong research program focused on biomedical communication and informatics, health data standards, and computational biology.

**Environmental Health Information Partnership (EnHIP)**

*Project Type:* Capacity-Building

*Population:* American Indian, Alaska Native

*Description:* The NLM's Environmental Health Information Partnership (EnHIP) strengthens institutional capacity to reduce health disparities through use of information technology and environmental health information. The program includes three Tribal Colleges and Universities (TCUs) – Oglala Lakota College (South Dakota), Diné College

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(Arizona), and Haskell Indian Nations University (Kansas); the University of Alaska, Anchorage; fourteen Historically Black Colleges and Universities (HBCUs); and three Hispanic Serving Institutions (HSIs).

*Results:* This program, which started in 1991, has helped the TCUs incorporate use of NLM resources in their curricula and in community outreach projects. Faculty, staff, and students received training in the NLM's toxicology, environmental health, and other electronic resources, and they participated in meetings about scientific issues, government and non-government programs, and funding opportunities. The program has also supported development of related local programs and projects. The Environmental Institute at Diné College is developing a Tox Town scene that depicts a southwestern reservation. Oglala Lakota College (OLC) is coordinating disaster response activities for the college and participating in drills and meeting with other tribal organizations and other institutions on the reservation to increase the awareness of the importance of disaster preparedness.

### **Create Health Information Resources and Technologies that Address Health Disparities**

*Project Type:* Community Outreach

*Population:* American Indian, Alaska Native

*Description:* The aim is to build a range of information services to address health disparities. This includes population-specific, culturally and linguistically appropriate web sites that focus on issues of particular populations or geographic areas, as well as general consumer health web sites and print resources with information useful to health disparities.

*Results:* The American Indian Health (AIH) Web Portal is a freely available information service dedicated to issues affecting the health and well-being of all North American Indians. Developed in collaboration with an American Indian user group, the website (<http://americanindianhealth.nlm.nih.gov/>) is an inclusive source of programs and health information for both consumers and health professionals serving American Indians, bringing together pertinent health and medical resources, including consumer health information, the results of research, traditional healing resources, and links to other Web sites.

The Arctic Health Web Site ([www.arctichealth.org](http://www.arctichealth.org)) is a collaborative effort between the NLM and the Alaska Medical Library at the University of Alaska, Anchorage. The service brings together, in one location, reliable information on diverse aspects of the Arctic environment and the health of northern peoples, including information from hundreds of local, state, national, and international agencies, as well as from professional societies, universities, and Alaska Natives and indigenous communities.

The Chickasaw Health Information Center (CHIC) is a public – private project jointly supported by NLM, the Chickasaw Nation, and Computercraft, a private science and technology company, owned by a Chickasaw family. The CHIC is a consumer health information center in the Carl Albert Indian Health Facility in Ada, OK. Computercraft developed and hosts the CHIC website, and also developed a mobile kiosk. The NLM provides training for staff and health care providers, as well as guidance about effective information provision practices.

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A Native American Health page on MedlinePlus.gov, the Library's consumer health website, has been created to facilitate access to information on specific health concerns and health issues that affect Native Americans.

*Publication/Reference:* <http://americanindianhealth.nlm.nih.gov>;  
<http://www.arctichealth.org>;  
<http://www.nlm.nih.gov/medlineplus/Nativeamericanhealth.html>

### **Native American Information Fellowship Program**

*Project Type:* Educational

*Population:* American Indian, Alaska Native, Native Hawaiian

*Description:* The Native American Information Fellowship Program provides an opportunity for representatives from American Indian tribes, Native Alaskan villages, and the Native Hawaiian community to learn about the NLM and the National Network of Libraries of Medicine. The goal of the program is to improve access to health information and health information technology for these communities.

*Results:* The NLM has worked with several tribes to support this tribal fellowship program. Fellows have been supported from the Mandan, Hidatsa, and Arikara Nations (Three Affiliated Tribes), Ft. Berthold Reservation, North Dakota; the Nez Perce Tribe, Lapwai, Idaho; the Navajo Nation from Tuba City, Arizona; urban American Indians; the Chickasaw Nation of Oklahoma; and three Native Hawaiians. Participants in the program have implemented information access and use activities on their reservations or within their communities.

### **Cankdeska Cikana Community College, Spirit Lake Nation, Ft. Totten, North Dakota**

*Project Type:* Capacity-Building

*Population:* American Indian

*Description:* The NLM provides support for strengthening capacity at Cankdeska Cikana Community College, Spirit Lake Nation, Ft. Totten, North Dakota. Support is directed to the college library for development, outreach, and training/assistance of users in accessing quality health information. Enhanced library services also emphasize outreach to the Spirit Lake Nation tribal community.

*Results:* The College has benefitted from this program in the following ways:

1. Strengthening of tribal college library and staff support
2. Improvement in library management skills of library staff
3. Enhancement of the library's health-related collection.
4. Additional library staff outreach, training, and assistance to tribal college students and tribal community members seeking health information. Partnerships have also been developed between the tribal college library and health promotion and wellness

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programs in the community. Health focus topics include healthy food, dental health, suicide prevention, nutrition, family/dating violence, child abuse, diabetes, and substance abuse

**Native Voices: Native Peoples' Concepts of Health and Illness**

*Project Type:* Educational

*Population:* Native American

*Description:* The NLM's Exhibition Program presents exhibitions that enhance the public and scholarly awareness and appreciation of current and historical topics in medicine. A new exhibition examining concepts of health and medicine among contemporary American Indians, Alaska Natives, and Native Hawaiians opened at NLM in October 2011.

*Results:* The NLM has a history of working with Native communities as part of the Library's commitment to making health information resources accessible to people no matter where they live or work. The Native Voices exhibition, which honors the Native tradition of oral history and establishes a unique collection of information, grew out of meetings with Native leaders in Alaska, Hawaii and the contiguous US.

The exhibition explores the connection between wellness, illness, and cultural life through a combination of interviews with Native people, artwork, objects, and interactive media.

Topics featured in the exhibition include:

1. Native views of land, food, community, earth/nature, and spirituality as they relate to Native health
2. The relationship between traditional healing and Western medicine in Native communities
3. Economic and cultural issues that affect the health of Native communities
4. Efforts by Native communities to improve health conditions
5. The role of Native Americans in military service and healing support for returning Native American veterans

**OFFICE OF BEHAVIORAL AND SOCIAL SCIENCES RESEARCH (OBSSR)**

The Office of Behavioral and Social Sciences Research (OBSSR) provides leadership and direction for the development of trans-NIH programs to increase the scope of, and support for, behavioral and social sciences research. The OBSSR aids in defining an overall strategy for the integration of these disciplines across NIH institutes and centers; develops initiatives to stimulate research in the behavioral and social sciences arena; and promotes studies to evaluate the contributions of behavioral, social, and lifestyle determinants in the development, treatment, and prevention of illness and related public health problems.

**Project Title: Advancing Science with Culturally Distinct Communities**

*Project Type:* Educational, Training

*Population:* American Indian, Alaska Native, Native American

*Description:* This two-day workshop co-funded and led by NIDA, focused on improving methodologies related to small sample designs that respond to challenges posed when working in rural, remote, geographically dispersed, and culturally distinct populations, with a focus on Native cultures.

*Results:* Preparing a special section for a peer-reviewed journal containing papers each describing a problem area associated with small, culturally distinct samples, a proposed approach to the problem, and a test of the solution with actual data from an existing study.

**Making Culture Count: Exploring the Intersection of Indigenous Knowledges and Invention Science**

*Project Type:* Educational, Training

*Population:* American Indian, Alaska Native, Native American

*Description:* This two-day workshop, co-funded and led by NIDA, was convened to determine the ways in which intervention science might incorporate better indigenous knowledge to ensure greater relevance and effectiveness for indigenous peoples.

*Results:* Development of four to five manuscripts on this topic for a special section of a peer-reviewed journal in the field.