

WSU Spokane Grant and Contract Award Summary

October 1 – December 31, 2015

NEW & TRANSFER AWARDS

Lori Brown (PI); Tamara Odom-Maryon – College of Nursing

National Council of State Boards of Nursing

“The Influences of Nursing School Characteristics on NCLEX-RN® Pass Rates: A National Study”

This grant funds the College of Nursing’s participation in a national survey of nursing schools aimed at uncovering how institutional characteristics—such as faculty credentials, faculty/student ratios, curriculum composition, and the use of standardized tests—influence pass rates on the NCLEX-RN® exam. Study outcomes will provide critical guidance on institutional best practices to educate competent nursing graduates who can pass the NCLEX-RN® exam.

Dedra Buchwald (PI); Astrid Suchy-Dicey – Community Health

National Institutes of Health

“Cerebrovascular Disease and its Consequences in the Strong Study Cohort”

This is a grant transfer from the PI’s previous institution. The grant funds a clinical and MRI evaluation of previous participants from the Strong Heart Study (SHS). This new study includes 1,033 participants who are survivors from the original SHS cohort, which followed 4,549 older adults from 13 American Indian tribes over 18 years. Recent analyses estimated the age- and gender- adjusted stroke incidence in the SHS as 679 per 100,000 persons (more than twice that in the general population). This indicates that American Indians are experiencing an epidemic of cerebrovascular disease (CBVD), a leading cause of morbidity and mortality that is linked to cognitive and motor impairment and depression. Magnetic resonance imaging (MRI) has redefined CBVD in other large cohort studies, which have shown a high prevalence of brain abnormalities in populations *without* known stroke or transient ischemic attack and found that overt CBVD (such as stroke) was much less common than covert MRI-defined brain disease. Combined with the elevated stroke rates found in the SHS, this suggests that AIs may be suffering from a large burden of covert CBVD. MRIs, which were not performed as part of the SHS, will allow the researchers to reassess risk and protective factors and describe MRI-defined CBVD in the SHS.

Dedra Buchwald (PI); Ka’imi Sinclair – Community Health

National Institutes of Health

“Culturally Adapted Strategies to Enhance Kidney Donation in Native Communities”

This is a transfer of grant funds from the PIs previous institution for a project to conduct a multi-level intervention to increase kidney donation among American Indians at three rural sites in Washington and Montana. The prevalence of treated end-stage renal disease in American Indians is 3.5 times higher than in white Americans and the mean age of onset is 6 years younger. American Indians are also less likely to be placed on the kidney transplant waiting list or to receive a transplant, and very few living kidney donors are American Indian. This study follows up on an earlier study done by the investigators to understand beliefs about and barriers to kidney donation among American Indians, which revealed that they are willing to donate organs to family members and other Native recipients. This project will seek to increase both deceased donation and living donor kidney transplants, as well as improve the completion of transplantation evaluations and survey dialysis patients in the Northwest Renal Network to increase the knowledge of kidney donation and transplantation in American Indians.

Weihsang Chai (PI) – Elson S. Floyd College of Medicine

National Institutes of Health

“Role of CST in Preventing Telomere Loss”

This grant funds a study aimed at determining the role of the Ctc1/Stn1/Ten1 (CST) protein complex in preventing excessive telomere loss. Telomeres are the physical ends of chromosomes that protect genome stability by preventing chromosomes from being damaged. Normal cells have limited lifespan due to loss of telomere DNA

during cell division. Previous studies done by the PI showed that deficiencies in components of the CST complex causes catastrophic telomere loss, inducing early aging of and DNA damage to human cells. They have also shown that mutations in Ctc1 cause a complex disease known as Coats Plus, and cells derived from Coats Plus patients display short telomeres. The study seeks to understand the mechanism by which the CST complex protects telomeres from excessive loss, which is vital for preventing premature aging. It may also be a foundation for the development of treatments to improve the health of Coats Plus patients.

**Darryl Duvall (PI); Kenn Daratha; Tamara Odom-Maryon – College of Nursing
Merck & Co**

“Improving Neuromuscular Monitoring Rates: A Local and Regional Approach”

As part of this project, the researchers will conduct a study to obtain accurate estimates of the frequency of neuromuscular blockade monitoring in patients who receive neuromuscular blocking agents while undergoing surgery. Earlier studies have shown neuromuscular blockade monitoring identifies potential complications, reduces adverse patient outcomes, and is helpful during emergence and recovery from anesthesia. Yet, more than 40 percent of patients that receive intermediate-acting neuromuscular blocking agents do not receive intraoperative neuromuscular monitoring, and nearly 10 percent of American anesthesia providers never use neuromuscular monitors. The approach used to estimate the frequency of neuromuscular in the study population could be repeated and standardized for other institutions across the country to create standardized data sets suitable for submission to national outcomes registries related to anesthesia. This would enable anesthesia practice groups to benchmark aspects of their practice and consider opportunities for quality improvement to decrease the incidence of complications before, during, and after surgery.

**Michael Ebinger (PI) – WSU Spokane/University Center for Innovation
Oregon Built Environment & Sustainable Technologies Center/US Department of Commerce – Economic
Development Administration**

“Advanced Wood Products Manufacturing Study”

This grant provides funding for the WSU University Center for Innovation to work with Oregon BEST to conduct a feasibility study to identify and evaluate the issues and options associated with accelerating the adoption of cross-laminated timber and other innovative engineered wood technologies in Oregon and Southwest Washington. The study creates the opportunity for rural communities to recover and rebuild economic prosperity in the most harshly affected, timber-dependent counties in the two states.

**Kimberly Honn (PI); Hans Van Dongen – Elson S Floyd College of Medicine
Virginia Tech University/U.S. Department of Transportation – Federal Motor Carrier Safety Administration
“Flexible Sleeper Berth Pilot Program”**

This is grant funding for a four-year field study—the Flexible Sleeper Berth Program—to determine whether allowing commercial truck drivers to split their sleep period can improve rest and alertness. Conducted in collaboration with the Virginia Tech Transportation Institute (VTTI), the study will include up to 240 commercial truck drivers, who will be allowed to split their sleeper berth time during the study. Each of the drivers will be followed for up to 90 days, and data related to their sleep and performance will be collected.

**Michael McDonell (PI) – Community Health
WA State Dept. of Social and Health Services, Department of Behavioral Health and Recovery/U.S. Department
of Health and Human Services, Substance Abuse and Mental Health Services Administration
“First Episode Psychosis Evaluation”**

This grant funds activities related to the evaluation of the Washington State Department of Behavioral Health and Recovery’s first episode psychosis program in Yakima County. WSU will lead the quantitative evaluation of the program and will work with the University of Washington to conduct the qualitative evaluation. The first episode psychosis program was launched to enhance the recognition of early signs and symptoms of psychosis so that effective treatment can be started promptly.

**Michael McDonell (PI); Sterling McPherson – Community Health/College of Nursing
University of Washington/National Institutes of Health**

“Novel EtG based Contingency Management for Alcohol in the Severely Mentally Ill”

This is a subcontract on a grant that funds a randomized, controlled trial of a novel contingency management intervention to increase rates of alcohol abstinence and improve treatment attendance in adults with both alcohol addiction and severe mental illness. Participants will receive a 12-week contingency management intervention (which uses incentives to reward positive behaviors) based on ethyl glucuronide (EtG) urinalysis. EtG urinalysis can detect alcohol use for a two-day period similar to urine tests for illicit drug use on which most contingency management drug research has been based. EtG results will be used as both a research outcome and as a basis for the contingency management intervention targeting alcohol use.

**Sterling McPherson (PI); Katherine Hirschak – College of Nursing
University of Washington/National Institutes of Health**

“Improving the Total Health of Urban Native Youth: Measuring Prevention Services’ Impact at an Integrated Health Center”

This is grant funding through the Institute for Translational Health Sciences for a project to gather key pilot data to examine the impact on physical, behavioral, and education outcomes of several ongoing prevention services, offered to American Indian youths through the NATIVE Project. This project addresses high disparities between American Indians youths and non-Hispanic whites, such as high teenage birth rates and suicide mortality rates and increased exposure to drug use/abuse. Outcomes from this project could help position NATIVE to apply for a larger grant to more thoroughly examine which services are most effective and which outcomes are the most important.

**Mary Paine (PI); Bruce Pinkleton – College of Pharmacy/Murrow College of Communication
University of Washington/National Institutes of Health**

“Natural Product-Drug Interaction Research: The Roadmap to Best Practices”

This is a subcontract of a grant that funds WSU’s role in the founding—with the University of Washington and University of North Carolina at Greensboro—of a multidisciplinary Center of Excellence on Natural Product-Drug Interactions Research. The goal of the new center is to create a roadmap for best research practices on how to study potential unwanted interactions between natural products and conventional medications. The center will comprise four cores: administrative, pharmacology, analytical, and informatics. PI Mary Paine will serve as co-PI of the center and will lead the pharmacology core. The team will work with the National Center for Complementary and Integrative Health (NCCIH) officials to identify a priority list of natural products that could affect the efficacy and safety of conventional medications by altering drug distribution and elimination in the body; identify hurdles to studying these interactions; propose approaches to overcoming these challenges; develop a Web portal that will allow other researchers access to data for further analysis; and communicate health implications of findings to the public.

**Nancy Potter (PI) – Elson S Floyd College of Medicine
Emory University/Patient-Centered Outcomes Research Institute (PCORI)**

“Intervention and Outcomes in Duarte Galactosemia”

This is a collaborative grant with Emory University to study outcomes in Duarte galactosemia, a disease that limits the ability to break down galactose, a sugar found in breast milk and animal milk. The study will examine the prevalence of speech, motor, cognitive, and other developmental disorders in children with Duarte galactosemia. The goal is to develop evidence-based recommendations for parents of children who have this rare and little-studied disease.

**Jean-Baptiste Roullet (PI) – College of Pharmacy
Smith-Lemli-Opitz RSH Foundation**

“STAIR 7001 Travel Support”

This grant provides travel support for patients participating in STAIR 7001, a clinical study to determine if cholesterol supplementation improves the neurocognitive and behavioral symptoms of individuals with Smith-

Lemli-Opitz (SLOS) syndrome. SLOS is an inborn error of cholesterol synthesis that causes a broad spectrum effects ranging from mild intellectual disability and behavioral symptoms to lethal malformations. Participating patients must travel to one of the study sites for comprehensive testing that may last up to 4 days.

Ka'imi Sinclair (PI) – Community Health

Confederated Tribes of the Colville Reservation

“A Culturally Tailored Intervention to Prevent Diabetes in American Indian Men”

This grant funds a mixed methods study to adapt and test an evidence-based diabetes intervention for high-risk reservation-based American Indian men. The study will have an important public health impact by helping to identify variables involved in the initiation of weight reduction and promoting healthy behavior in a hard-to-reach population.

Ka'imi Sinclair (PI) – Community Health

University of Hawaii/National Institutes of Health

“The KaHOLO Project: Preventing Cardiovascular Disease in Native Hawaiians”

This is a subcontract of a project that involves a comparison of a 6-month physical activity intervention called the Kā-HOLO Program and a wait-listed control group on systolic and diastolic blood pressure and risk for cardiovascular disease and stroke in 250 Native Hawaiians with hypertension living in Hawai'i and Washington State. The prevalence of hypertension is 70 percent higher in Native Hawaiians than in white Americans. Hypertension is also a well-known major risk factor for coronary heart disease and stroke, which occur in Native Hawaiians at a rate three to four times of that in white Americans and manifest at younger ages in Native Hawaiians. The Ka-HOLO Program comprises hula—a traditional dance and hallmark of Native Hawaiian culture—plus a brief hypertension self-care education program. The study builds on earlier pilot study that found that 60 minutes of hula two days a week reduced systolic blood pressure in Native Hawaiians with confirmed hypertension.

Hans Van Dongen (PI) – Elson S Floyd College of Medicine

FedEx

“FedEx FRM Scientific Advice”

This is a contract for statistical analyses and scientific advice on fatigue risk management (FRM) for FedEx pilots flying cargo planes between airport hubs at night.

Jacqueline van Wormer (PI) – College of Arts and Sciences, Department of Criminal Justice and Criminology

Spokane County Juvenile Court

“Washington State Juvenile Detention Guidelines Project”

This funding supports work to develop a statewide Juvenile Detention Guidelines Manual and provide targeted training to juvenile court administrators and juvenile detention management and staff throughout the state.

Judy Zeiger (PI) – Student Affairs

Western Washington University/Corporation for National and Community Service

“Washington Campus Compact”

This grant from the Corporation for National & Community Service provides funding to operate an AmeriCorps program called College Access Corps, which allows selected member campuses to hire an AmeriCorps Member to help coordinate K-12 college access programs in their local communities. The AmeriCorps member will recruit and train college students from their campus to serve as college access coaches to economically disadvantaged youth in schools or community agencies that have a student population that is at least 50 percent eligible for the federally funded free/reduced lunch program.

AWARDS FOR ONGOING WORK

(Renewal, continued, and supplemental funding for projects awarded previously)

Janet Beary (PI) – Dept. of Nutrition & Exercise Physiology

Washington State Department of Health, Office of Healthy Communities

“Maternal and Child Health Services Block Grant to the States”

This is renewal grant funding for a project to promote the availability of nutrition services and improve nutrition outcomes for children and youth with special health care needs in ten Eastern Washington counties. Providing services through the medical home model, the PI will aim to increase workforce capacity to provide nutrition and feeding team services in the east region—particularly in rural and remote areas—and act as a resource for pediatric nutrition information for children with special health care needs.

Chris Blodgett (PI) – Child and Family Research Unit

The California Endowment

“CLEAR California: Trauma Informed School Improvement”

This is renewal funding for a grant that funds a project aimed at improving school outcomes by addressing the effects of trauma due to adverse child experiences. As part of this project, the Area Health Education Center at WSU will integrate two established models, CLEAR (Collaborative Learning for Educational Achievement and Resiliency) and HEARTS (Healthy Environments and Response to Trauma) into a single, unified approach to dealing with trauma in schools. The project also includes outreach to California schools that may serve as sites for implementation and testing in a subsequent, multi-year phase of this project.

Chris Blodgett (PI) – Child and Family Research Unit

Public Health Seattle & King County/Gates Foundation

“Seattle Elementary School Mental Health Initiative Year 2”

This is an increase in grant funding for a project in which the Child and Family Research Unit is helping Public Health – Seattle & King County implement its trauma intervention program in two elementary schools within Seattle Public Schools. The goal of the project is to maximize the potential for school success for all children by addressing the needs of children who have experienced multiple traumatic events, such as homelessness, parents’ divorce or separation, and exposure to domestic violence.

Chris Blodgett (PI) – Child and Family Research Unit

University of Connecticut Health Center

“UConn Evaluation Contract Yr 4”

This is renewal funding for the Child and Family Research Unit to evaluate a University of Connecticut initiative aimed at improving treatment and services for children and adolescents who have experienced traumatic events and increasing access to these treatments and services.

Kenn Daratha (PI) – College of Nursing

Empire Health Foundation

“Measurement of Obesity Prevention Initiative”

This grant provides renewal funding for the researcher to provide statistical services to support the Empire Health Foundation’s obesity prevention initiative. Daratha will work with seven intervention school districts and Educational Service District 101 to identify data extractions for all students for demographics, physical measurements, meal participation, fitness performance, attendance, and academic performance. In addition, he will develop browser-based data collection tools to capture responses to physical activity and healthy eating/food frequency questionnaires and will import data feeds from each school district into a common database for analysis.

Zachary Hamilton (PI) – College of Arts and Sciences, Department of Criminal Justice and Criminology

Washington State Department of Corrections

“DOC WSU Interagency Agreement”

This is renewal funding for the research partnership between the Washington State Department of Corrections and the WSU Department of Criminal Justice and Criminology. The contract provides for joint funding of a PhD-level

graduate research assistant to manage, organize and prepare data to support research projects and to respond to grant solicitations as they evolve, based on the parties' collaborative efforts.

**Michael McDonell (PI); Dedra Buchwald; John Roll – WSU Spokane; College of Nursing
National Institutes of Health**

“Contingency Management Treatment of Alcohol Abuse American Indian People”

This is a balance transfer following the transfer of this grant from the PI's previous institution. This grant funds a study of the use of a culturally acceptable contingency management intervention to encourage and support abstinence from alcohol abuse among American Indians and Alaska Natives. The study covers individuals from three tribes living on two reservations who receive services at an urban Indian health care facility. Contingency management is an intervention that uses incentives to reward positive behaviors.

**Grant Trobridge (PI); College of Pharmacy
Seattle Children's Research Institute/National Institutes of Health**

“Second Generation Approaches to Foamy Virus Vector SCID-X1 Gene Therapy”

This is continued funding for an NIH-funded project that seeks to find a better pathway for the delivery of hematopoietic stem cell (HSC) gene therapy to patients afflicted with X-linked severe combined immunodeficiency (SCID-X1). SCID-X1 is an inherited disease that occurs almost exclusively in males. The disease causes those infected to be prone to recurrent and persistent infections caused by certain bacteria, viruses, and fungi and is fatal in the first years of life if left untreated. HSC gene therapy offers the best therapeutic option for many patients. However, researchers have found that HSC gene therapy delivered through gamma-retroviral vector proviruses have dysregulated nearby genes. The researchers are studying whether foamy virus vectors may be a safer alternative. As part of this study, they will seek to establish the relative safety of foamy virus vectors using a novel approach to assess genotoxicity; develop safer insulated foamy virus vectors; and improve the efficiency of foamy virus vector production.

**Grant Trobridge (PI); College of Pharmacy
Seattle Children's Research Institute/National Institutes of Health**
“Core Unit D: Vector Integration and Tracking”

This is continued funding for a subcontract for WSU to establish a webserver for bioinformatics and perform custom bioinformatics in support of an NIH-funded project. The project seeks to find a better pathway for the delivery of hematopoietic stem cell (HSC) gene therapy to patients afflicted with X-linked severe combined immunodeficiency (SCID-X1), an inherited disease that makes those infected prone to recurrent and persistent infections. SCID-X1 is fatal in the first years of life if left untreated. HSC gene therapy offers the best therapeutic option for many patients. However, researchers have found that HSC gene therapy delivered through gamma-retroviral vector proviruses have dysregulated nearby genes. The researchers are studying whether foamy virus vectors may be a safer alternative.

**Judy Zeiger (PI) – Office of Student Affairs
U.S. Department of Education/Office of Postsecondary Education**
“Washington State University Upward Bound Project in Ferry and Stevens Counties”

This grant provides continuing funding for the Upward Bound program, which is designed to generate the skills and motivation necessary for success in education beyond high school among young people from low-income families and families where neither parent has acquired a bachelor's degree. Upward Bound provides program participants with fundamental support in their preparation for college entrance. This Upward Bound project housed at WSU Spokane focuses on four small high schools in Ferry and Stevens Counties.

**Judy Zeiger (PI) – Office of Student Affairs
University of Washington**

This contract provides renewal funding for the Spokane Math Engineering and Science Achievement (MESA) program. The program builds a pathway to college and careers in science, technology, engineering, and

mathematics (STEM). MESA develops programming and initiatives to improve diversity and retention, with an emphasis on traditionally underrepresented students in STEM fields, including African Americans, Native Americans, Hispanic/Latinos, Pacific Islanders, and women.