

WSU Spokane Grant and Contract Award Summary

April 1 – June 30, 2015

NEW & TRANSFER AWARDS

Lori Brown (PI) – College of Nursing

US Department of Human and Health Services – Health Resources and Services Administration, Bureau of Health Professions

“Washington State University Nurse Faculty Loan Program 2015”

These federal loan funds help the WSU College of Nursing prepare graduate nurses for careers as nurse educators. The funds support the WSU College of Nursing’s Nurse faculty Loan Program, which helps meet the financial needs of graduate nurse educator students for tuition, fees, and books.

Marcos Frank (PI) – College of Medical Sciences/Sleep and Performance Research Center

National Institutes of Health

“REM Mechanisms in Neocortical Development”

This is funding that was transferred from the PI’s previous institution for a study on the relationship between rapid-eye-movement (REM) sleep and ocular dominance plasticity. Ocular dominance plasticity refers to changes in the brain’s synapses that are triggered by changes in binocular vision—the ability to maintain visual focus on an object with both eyes, creating a single visual image. As part of this project, the researcher will test the hypothesis that REM sleep is necessary for the consolidation of ocular dominance plasticity and that it is mediated by protein kinases activated in REM sleep.

K. Michael Gibson (PI) – College of Pharmacy

Aldeyra Therapeutics

“Efficacy of NS2-Derived Aldehyde Adduction in Succinate Semialdehyde Dehydrogenase (SSADH) Deficiency”

This contract provides funding for Gibson to test the potential utility of a therapeutic compound known as NS2 to trap aldehydes in SSADH deficiency. Free aldehydes are implicated in the biochemical perturbations associated with SSADH deficiency, and NS2 has been shown to bind and trap free aldehydes quickly. Lowering aldehyde levels may reduce downstream pathology and could have the potential to treat SSADH deficiency, as well as other disorders of aldehyde mis-metabolism.

Lois James (PI); Bryan Vila – College of Nursing/Sleep and Performance Research Center; Dept. of Criminal Justice & Criminology, College of Arts & Sciences/Sleep and Performance Research Center

Royal Canadian Mounted Police

“Fatigue Management Strategy, F Division”

This award funds a study that will monitor the implementation and dissemination of an established fatigue management program—the Calgary Police Service Fatigue Management Course—throughout the "F" Division of the Royal Canadian Mounted Police (RCMP). Based on an assessment of the impact of the program on the members and the organization, the WSU team will do a follow-up project that involves developing a specific fatigue management strategy for the "F" Division of the RCMP that will take into account differences between the nature of urban municipal policing and the responsibilities, duties and workload/scheduling factors in RCMP detachments throughout rural, urban and remote Canadian locations.

Steve James (PI) – Dept. of Criminal Justice & Criminology, College of Arts & Sciences

Spokane Police Department

“Spokane Police Department Training Development Assistance”

This award provides funding for the principal investigator to assist the Spokane Police Department with 12 months of training development assistance. The goals of the training are to help improve officer safety and wellbeing;

better serve the community; and meet recommendations set forth by the U.S. Department of Justice's Office of Community Oriented Policing Services' Collaborative Reform Process.

James Krueger (PI) – College of Medical Sciences

University of Pennsylvania/National Institutes of Health

“Metabolic Regulation of Wakefulness”

This is a subaward of a grant awarded to the University of Pennsylvania by the National Institutes of Health. The aim of the project is to identify the metabolic processes in the brain that cause impaired wakefulness in people affected by sleep disorders, such as obstructive sleep apnea. The study could help identify specific molecules involved in impaired wakefulness, which could open the door to the development of new therapies to improve wakefulness among those with sleep disorders.

Matthew Layton (PI) – College of Medical Sciences

Daybreak Youth Services

“Staff Assignment Agreement”

This award provides funds for psychiatrist and WSU faculty member Matt Layton to provide services to Daybreak Youth Services, an organization that offers substance abuse and mental health services to adolescents in Spokane.

Jeannie Padowski (PI) – College of Pharmacy

University of Washington/Michael J Fox Foundation

“Central Nervous System Uptake of Intranasal Glutathione in Parkinson's Disease”

This funding comes from a subaward of a University of Washington project funded by the Michael J. Fox Foundation. The researchers will evaluate whether magnetic resonance spectroscopy can be used to measure whether central nervous system levels of glutathione—an important antioxidant—can be increased through the administration of reduced glutathione through the nose. It is known that glutathione levels decrease in the early stages of Parkinson's disease, and it has been shown that the loss of glutathione promotes disease progression. Research efforts to date have been hindered by the inability to measure brain glutathione concentrations.

Julie Postma (PI) – College of Nursing

Patient-Centered Outcomes Research Institute (PCORI)

“Promoting Patient-Centered Research in the Puget Sound Asthma Coalition”

This award builds on work completed for a previous PCORI grant to improve the quality of life for those affected by asthma in the Puget Sound region. The goal of this new project is to increase patient-centered research generated in the Puget Sound Asthma Coalition by strengthening the governance infrastructure of the coalition to support patient-centered research; strengthening the communication infrastructure of the coalition to engage parents of patients in research; expand and mature research partnerships; and develop comparative effectiveness research questions.

Jingru Sun (PI) – College of Medical Sciences

WSU Office of Research

“Neural Regulation of Innate Immunity to Microbial Infection in *C. Elegans*”

This is a faculty seed grant for a project aimed at broadening our knowledge of the interaction between the nervous system and the immune system. Sun will study potential mechanisms by which the nervous system regulates the immune system in a nematode (roundworm) known as *Caenorhabditis elegans*, which has proven to be an excellent model due to its simple and well-defined immune and nervous systems. The study will provide a better understanding of the systemic control of innate immune pathways and may lead to the development of more effective ways to treat innate immune disorders.

Roxanne Vandermause (PI) – College of Nursing

Patient-Centered Outcomes Research Institute (PCORI)

“Advancing Quality and Relevance of Evidence for Patients”

This grant funds a pilot project to gain a better understanding of the use of qualitative research methods and methodologies in patient-centered outcomes research. The project will be led by a multi-institutional research

team, who will look at how researchers who use primarily qualitative methods experience seeking funding for, implementing, and disseminating their work. They will also look at how qualitative methods may advance the quality and relevance of evidence for patients.

AWARDS FOR ONGOING WORK

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

Salah-Uddin Ahmed (PI) – College of Pharmacy

Arthritis Foundation

“Mechanism of Mcl-1 Regulation by EGCG in Rheumatoid Arthritis”

This is continued funding for a grant that looks at the biomolecular mechanisms associated with rheumatoid arthritis. Rheumatoid arthritis is a leading cause of work-related disabilities and a significant socio-economic health challenge due to expensive, yet incomplete, conventional therapies. The researcher will look at a protein known as myeloid cell leukemia-1 (Mcl-1) and how an increased expression of Mcl-1 is associated with disease progression, resistance to therapies, and poor clinical outcome. He will look at how epigallocatechin-3-gallate (EGCG)—an antioxidant present in tea—influences Mcl-1 regulation. The work may potentially lead to the development of a novel therapy based on EGCG.

Chris Blodgett (PI) – Area Health Education Center

University of Washington/US Department of Health and Human Services, Health Resources and Services Administration

“WWAMI Model AHEC FY15”

This is renewal funding for a subcontract that supports rural health workforce development and health systems development as part of the WWAMI AHEC system.

Chris Blodgett (PI) – Area Health Education Center

Washington Rural Health Association

“Washington Rural Health Association Management Support FY14”

This contract provides renewal funding for the Area Health Education Center to organize and manage the Northwest Regional Rural Health Conference. The 2015 conference was held March 17-19 in Spokane.

Cynthia Corbett (PI) – College of Nursing

Providence Sacred Heart Medical Center & Children’s Hospital

“Staff Assignment Agreement 2015”

This is funding for an agreement between Providence Health & Services–Washington and WSU to maintain a scholar in residence for nursing research program at the Providence Sacred Heart Medical Center & Children’s Hospital. This award renews the participation of PhD in nursing student Ruth Bryant through the end of fiscal year 2015.

Cynthia Corbett (PI); Kenn Daratha; Dennis Dyck, Sterling McPherson, Sean Murphy – College of Nursing; Dept. of Psychology, College of Arts and Sciences; Dept. of Health Policy & Administration

National Institutes of Health/National Institute on Aging

“Chronic Care Management Model Translation to Multi-morbid Aging Adults at FQHCs”

This is continued funding for a study that tests the effectiveness of the Washington Department of Social and Health Services’ chronic care management model in patients with multiple chronic conditions, such as diabetes and heart disease. Researchers are looking at whether the intervention increases patients’ abilities to manage their own conditions and prevents hospitalizations, as well as the intervention’s cost effectiveness for this population. The project will advance knowledge about community partnerships and best practices for health homes to provide patient-centered, team-based care in a way that empowers patients and results in more effective use of health care resources.

Dennis Dyck (PI) – Dept. of Psychology, College of Arts and Sciences

Washington State Department of Social and Health Services

“Ombuds/Quality Review Team Training”

This is additional funding for a contract with the Washington State Department of Social and Health Services to provide staffing, infrastructure, and expertise for the development of statewide evidence-based peer support programs for mental health and substance abuse. The work under this contract includes the development of initiatives to increase youth and family engagement in behavioral health policy, planning, and service delivery; training and workforce development for providers and/or mental health consumers; identification, review, and development of peer support models and programs; and research and evaluation and development and implementation of evidence-based practice. This portion of the funding pays for training for the state ombudsman and quality review team members to ensure quality independent services.

Dennis Dyck (co-PI); Tracy Skaer (co-PI); Celestina Barbosa-Leiker; John Garofalo; Donelle Howell;– Dept. of Psychology, College of Arts and Sciences; College of Pharmacy; College of Nursing; WSU Vancouver

WSU Office of Research

“Multiple Family Groups, Mindfulness and the Management of Chronic Pain, and High Risk Opiate Use”

This is an internal grant awarded through the Alcohol and Drug Abuse Program. The grant funds a treatment development pilot study that will test the feasibility, acceptability, and preliminary efficacy of a multi-family group mindfulness intervention for patients dealing with chronic pain and their spousal caregivers. Increasing numbers of chronic pain patients are treated with long-term opioid therapy, placing them at risk for developing an opioid addiction. Family members often suffer along with the patient. Results from this study may help advance treatment options for individuals with chronic pain and prescription opioid misuse.

Cynthia Fitzgerald (PI); Melvin Haberman; Eva Schiavenato – College of Nursing

US Department of Human and Health Services – Health Resources and Services Administration, Bureau of Health Professions

“Improving Primary Care in Washington State through Advanced Nursing Education”

This is incremental funding for the College of Nursing’s Advanced Nursing Education Traineeship Program, which seeks to increase the number of primary care providers in Washington state by preparing graduate nurses for careers as family nurse practitioners. Through funding support for tuition, fees, and books and through other efforts, the program will help to increase enrollment of graduate nurse practitioner students from underrepresented communities and enhance and improve retention of these students. Designated nursing faculty members will recruit and mentor these students and follow up with them post-graduation. The project will improve the access of rural Washingtonians to local primary care provided by individuals with similar cultural and ethnic backgrounds.

Marcos Frank (PI) – College of Medical Sciences/Sleep and Performance Research Center

National Institutes of Health

“Non-Neuronal Regulators of Sleep”

This is funding that was transferred from the PI’s previous institution for a study of the potential role of gliotransmission—chemical signaling between glia and neurons in the brain—in sleepiness and impaired cognitive functioning after sleep loss. The study could contribute to new ways to combat excessive daytime sleepiness and insomnia, as well as attention, learning, and memory problems associated with sleep loss.

Shobhan Gaddameedhi (PI) – College of Pharmacy

National Institutes of Health

“Role of the Circadian Clock in Melanocyte Biology and UV-Induced Melanomagenesis”

This is a balance transfer from the principal investigator’s previous institution for a National Institute for Environmental Health Sciences grant. The award funds a study of the potential role of the circadian clock—the internal biological clock that keeps us on a 24-hour cycle—in the development of melanoma, a type of skin cancer that forms from pigment-containing skin cells known as melanocytes. Preliminary research by the PI suggests that the protein expression level of the MITF gene—which is involved in melanocyte survival and plays a role in melanoma development—is regulated by the circadian clock. The PI will study the effects of the circadian clock on

melanocyte biology, on melanocytic signaling pathways induced by solar UV radiation—a major risk factor for melanoma development—and on cutaneous melanoma development. The study may provide a basis for innovations in melanoma prevention and treatment.

K. Michael Gibson (PI) – College of Pharmacy

National Institutes of Health

“Therapeutics of mTOR Signaling in Succinic Semialdehyde Dehydrogenase Deficiency”

This award provides continued funding for a study that looks at the therapeutic possibilities of targeting mTOR—an enzyme that regulates cell growth, proliferation, and survival—to treat succinic semialdehyde dehydrogenase (SSADH) deficiency. SSADH is a rare inherited disorder with characteristics of autism and epilepsy that leads to developmental delay, decreased muscle tone, intellectual disability, seizures, and behavioral problems. The disorder is associated with an increase in GABA (gamma-aminobutyric acid), a neurotransmitter that prevents the brain from being overloaded with too many electrical signals. This study will examine the physiological, biochemical, and cellular effects on mice of therapeutics that inhibit mTOR signaling and could be used to alleviate symptoms related to increased GABA levels in SSADH and related disorders.

Janet Katz (PI); Sandra Benavides-Vaello; Tamara Odom-Maryon; Roberta Paul; Richard Lamb– College of Nursing; College of Education

US Department of Human and Health Services – Health Resources and Services Administration, Bureau of Health Professions

“Creating a Pathway to Nursing: Community Alliance for Health”

This is continued funding for a project aimed at increasing health care access by increasing the recruitment, retention, and graduation rate of disadvantaged students in the bachelor of science in nursing program who can go on to practice in underserved areas. The project specifically targets disadvantaged rural families with Latino and Native American students. Strategies focus on educating and empowering disadvantaged students and parents; increasing community capacity for improving education, income levels, social support, networking, and quality health access; and engaging policy makers with community members.

James Krueger (PI); Christopher Davis; Ping Taishi – College of Medical Sciences/Sleep and Performance Research Center

National Institutes of Health

“Molecular Mechanisms of Sleep Responses to Viral Infection”

This is continued funding for a project that looks at the effects of influenza on sleep. Influenza has been shown to cause an increase in the duration of non-rapid eye movement sleep (NREMS). The molecular and brain anatomical pathways for this response remain under investigation. This study looks at the potential involvement of the olfactory bulb, the part of the brain that transmits smell information from the nose to the brain.

Philip Lazarus (PI) - College of Pharmacy

National Institutes of Health/National Cancer Institute

“Role of Pharmacogenetics on Exemestane Metabolism and Toxicity”

This is continued funding for a study that looks at the drug Exemestane (EXE), which has been used as an equally or more effective and less toxic alternative to Tamoxifen in breast cancer patients. As part of the project, the researcher will explore the potential cause for inter-individual variability in the response to EXE by determining the mechanisms used to metabolize the drug.

Hans Van Dongen (PI) – College of Medical Sciences/Sleep and Performance Research Center

LA BioMed/National Institutes of Health

“Understanding Hormonal Mechanisms of Sleep Restriction”

This is continued funding for a subcontract for an NIH-funded project to study the hormonal mechanisms that underlie insulin resistance from sleep restriction, which contributes to the development of type 2 diabetes mellitus. Van Dongen will provide expertise on sleepiness and cognitive performance testing and study design, as well as data processing and analysis.

Jacqueline van Wormer (PI); Dept. of Criminal Justice & Criminology, College of Arts & Sciences

Spokane County

“Spokane County Law & Justice Project Manager/Facilitator”

This contract provides renewal funding for Jacqueline van Wormer to serve as a project manager and facilitator, overseeing regional criminal justice system reform efforts in Spokane County. In this role, Van Wormer facilitates Law and Justice Council meetings; provides research and education on critical topics of concern around reforms, and assists county and city departments and agencies with the proper implementation of reforms.

Zhenjia Wang (PI) – College of Pharmacy

National Institutes of Health

“Caveolar Transport of Therapeutic Nanoparticles”

These are continued grant funds for a study that will increase the scientific understanding of therapeutic nanoparticles and how they are transported across blood vessel walls to an infection site. This study looks at the potential for targeting nanoparticles to caveolae—small invaginations of the plasma membrane in endothelial cells, which line the vessels. It will examine to what extent and how caveolae could transport therapeutic nanoparticles and whether nanoparticle size makes any difference in the effectiveness of this process.