

**NEBRASKA**  
TOBACCO SETTLEMENT  
BIOMEDICAL RESEARCH  
DEVELOPMENT FUND

**2023-24 PROGRESS REPORT**

# **NEBRASKA**

## TOBACCO SETTLEMENT BIOMEDICAL RESEARCH DEVELOPMENT FUND

### **2023-24 PROGRESS REPORT**

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## INVESTMENTS IN HEALTH CARE

**Nebraska lawmakers have a history of successful partnerships with institutes of higher education in the state.** One of the most unique – and fruitful – has been the legislature’s 2001 decision to allocate a percentage of the state’s tobacco settlement funds to biomedical research. That vision and foresight – which led to passage of LB692 and creation of the Nebraska Healthcare Cash Fund – put Nebraska on the leading edge of biomedical research.

During initial discussions, lawmakers looked at how the state’s research institutions could leverage dollars to attract more funding. “Nebraska was one of four states nationally that took the settlement and invested it all in health care,” then Sen. Jim Jensen of Omaha said in 2005. “I’m proud of that.” Today, Nebraskans continue to benefit from the innovative provisions of the 2001 Tobacco Settlement Biomedical Research Initiative (LB692), which strengthens the state’s economy and advances health care science.

The funds directly support research at the University of Nebraska, Creighton University, and Boys Town National Research Hospital by helping to recruit talented scientists from around the world and enabling each institution to build robust research programs and acquire advanced technologies to tackle a wide range of diseases. This targeted investment strengthens Nebraska’s position as a leader in medical research.

Nebraskans support investments in excellence, and this fund embodies a powerful partnership that fosters growth and innovation. Through the Legislature’s support, institutions are empowered to attract the best and brightest researchers to Nebraska who can establish state-of-the-art laboratories. Additionally, it provides our state’s institutions and top researchers the opportunity to leverage state funds to capture federal research dollars. The ongoing support incentivizes the top research talent to remain in Nebraska and develop life-altering research for Nebraskans and the world.

As a result, NU’s four campuses (University of Nebraska Medical Center, the University of Nebraska-Lincoln, University of Nebraska at Omaha and University of Nebraska at Kearney), Creighton University and Boys Town National Research Hospital have seen tremendous growth in research and federal funding since 2001, and they have developed internationally recognized programs focused on addressing diseases that significantly affect Nebraskans.

The following sections, organized by the institutions that receive funds, describe in greater detail the investments made using the Nebraska Healthcare Cash Fund and highlight some of the individuals and/or programs that have benefitted from Nebraska’s early decision to support and grow biomedical research.

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**November 1998** – The four largest tobacco companies agree to provide yearly payments to 46 states provided the states drop their Medicaid lawsuits against them and exempt the companies from private tort liability regarding harm caused by tobacco use.

**2001** – Nebraska Legislative Bill 692 creates the Nebraska Tobacco Settlement Biomedical Research Fund. Initially, about one-third of the annual return was set aside for biomedical research. In 2002, \$10 million was set aside for this purpose.

**2006** – The tobacco settlement funds distribution increased to \$12 million.

**2008** – The tobacco settlement funds distribution increased to \$14 million.

**2017** – The tobacco settlement funds distribution increased to \$15 million.



## Meet Rebekah Gundry, PhD

**Investment from tobacco settlement funding: \$769,000**

**Total portfolio through FY24: \$20.3 million**

**Return on investment: 25 to 1**

Rebekah Gundry, PhD, was recruited to UNMC in 2019, after nine years at the Medical College of Wisconsin and after completing a postdoctoral fellowship at Johns Hopkins University, where she studied mass spectrometry in cardiovascular research. The Wisconsin native received an initial investment package that included \$769,000 in tobacco settlement dollars to further study diseases of the heart and serve as professor and vice chair of the UNMC Department of Cellular and Integrative Physiology and inaugural director of the CardioOmics Program, which fosters research that leads to improved clinical cardiovascular medicine and patient care.

Today, Dr. Gundry is principal investigator on grants totaling \$20.3 million. Her portfolio and impact expand further when considering her prior funding, other current grants that the CardioOmics program supports and the leadership roles she holds. Among her many achievements, Dr. Gundry is director of the UNMC Center for Heart and Vascular Research, and principal investigator of an \$11.8 million Centers of Biomedical Research Excellence (COBRE) award from the National Institutes of Health. The COBRE award elevates UNMC's reputation for outstanding heart and vascular disease research, and enables UNMC to develop the next generation of outstanding heart and vascular disease investigators.

Since its founding in 2019, the Center for Heart and Vascular Research has helped UNMC cardiologist Dan Anderson, MD, expand a one-of-a-kind repository for collecting heart and vascular tissue and blood for research, provided funding to early career faculty, and implemented multiple programs to educate its members about cutting-edge approaches and promote new collaborations across departments and institutions.

When asked how her work directly impacts Nebraskans, Dr. Gundry replied, "Heart disease is the leading cause of death in Nebraska, and many patients would benefit from personalized approaches that address their unique

needs. UNMC provides a unique environment for research not possible elsewhere – we have the perfect combination of clinicians, surgeons, technology transfer specialists and researchers to bring our technologies and applications to life for the benefit of Nebraskans, and beyond.

"In collaboration with Dr. Anderson, our research is directly studying the hearts of Nebraska patients. In doing that, we are uncovering new molecules in the heart that can effectively serve as mapping agents to help physicians deliver therapies to the right place. With the support of UNeMed, we are beginning to work with companies who have expressed interest in further developing our innovative technology pipelines and discoveries into new therapeutics. Our research is truly of Nebraskans and for Nebraskans."

**"Our research is truly of Nebraskans and for Nebraskans."**

*– Rebekah Gundry, PhD*

Dr. Gundry's research work continues to excel and impress. She is one of only a few scientists nationwide, and the first at UNMC, to receive an NHLBI Emerging Investigator Award, which requires applicants to be principal investigator on two active R01-equivalent awards at the time of application. In 2023, she was named UNeMed's Emerging Inventor in recognition of her innovations and accomplishments in the field of mass spectrometry, bioinformatics and the cell surfaceome. She also is an inventor on two new inventions over the past five years and has licensed one of her technologies to industry.

At UNMC, Dr. Gundry has become one of UNMC's research leaders. In addition to leading the COBRE, she serves as the Stokes-Shackleford professor, chair of the UNMC Department of Cellular and Integrative Physiology and scientific director of UNMC's Multiomics Mass Spectrometry Core Facility.

# UNIVERSITY OF NEBRASKA MEDICAL CENTER

## Nebraska Tobacco Settlement Biomedical Research Fund (NTSBRDF)

Year 23: July 1, 2023 – June 30, 2024

### Progress Report

## Executive Summary

#### UNMC invests NTSBRDF dollars in four areas:

- Recruitment and retention of excellent scientists
- Research infrastructure and program development
- Research & education programs focused on improving health and reducing health disparities
- Joint research projects between UNMC and the other NU System campuses

#### During 2023-24, UNMC received \$7,706,224 in Nebraska Tobacco Settlement Funds and invested it as follows:

- \$3,709,418 in strategic recruitment or retention of new or meritorious research faculty, including \$1,414,614 for the recruitment/retention of women and under-represented minorities.
- \$3,349,188 in program and other infrastructure development, such as capital equipment, new core development, and Centers.
- \$463,171 in research focused on reducing health care disparities and the mentorship and development of trainees and faculty from under-represented minorities or other disadvantaged backgrounds.
- \$184,447 for joint research projects between UNMC and other NU system campuses

Overall, 24% of the total 2023-24 award focused on health disparities research or on the recruitment/retention of under-represented minority faculty.

Since the activation of the NTSBRDF program at the beginning of fiscal year 2001-02, these funds have been critical to the recruitment and retention of many world-class scientists who contribute to a growing research funding portfolio. Last year, UNMC's research-specific sponsored awards remained stable at \$171.6M. In fiscal year 2024, UNMC's research expenditures totaled \$217.7M, an 8% increase from the prior year and the largest in UNMC's history.

Since the availability of the NTSBRDF, UNMC's total extramural research funding has more than quadrupled (\$40M in 2000 to \$171.6M in 2024). The growth of extramural research has a direct and positive impact on the economy of the State of Nebraska. These grants not only directly support salaries for faculty and staff, but also contribute to brain gain in our state by serving as a magnet for new scientific recruits, potential students, industries, and other visitors that want to collaborate or attend conferences organized by research-involved faculty.

Since 2001, when NTSBRDF support began, UNMC has invested approximately \$94.4M in the strategic recruitment or retention of 298 researchers, who, in turn, have attracted a total of over \$1.65B in extramural research support after they received NTSBRDF funding. To date, this represents a return on investment of approximately 16.4 to 1.

## Strategic Faculty Recruitment & Retention

In 2023-24, UNMC invested the majority of its allocation, \$3,709,418 (48.1%), in strategic recruitment and retention of faculty. These supported faculty members have a combined portfolio of \$48.6M in extramurally funded research that was active during the reporting period. In general, the funding of these investigators predominantly comes from the National Institutes of Health (NIH) and other federal sources, including the Centers for Disease Control and Prevention (CDC), the Department of Defense (DOD), the United States Army (US Army), and The U.S. Department of Veterans Affairs (VA).

### Investigators with first time NTSBRDF support during 2023-2024

#### Pooneh Bagher, PhD

*Associate Professor, College of Medicine, Cellular and Integrative Physiology*

Vascular Function in Extreme Physiological Conditions

Active funding: \$483,221

Active funding sources: National Heart, Lung, and Blood Institute (NIH)

#### Subhash Chand, PhD

*Assistant Professor, College of Medicine, Anesthesiology*

HIV, Substance Abuse, and Cardiovascular Comorbidities

Active funding: \$153,500

Active funding sources: National Institute on Drug Abuse (NIH)

#### Lynda Harris, PhD

*Associate Professor, College of Medicine, Ob/Gyn Research Lab*

Placental Dysfunction and Obstetric Nanomedicine

Active funding: \$2,655,006

Active funding sources: National Institute on Drug Abuse (NIH)

#### Bailey Hendricks, PhD

*Assistant Professor, College of Nursing, Omaha Division*

Young Caregivers and Cancer Survivorship

Active funding: \$4,997

Active funding sources: American Association for Cancer Research

#### Benjamin Kwok, PhD

*Associate Professor, College of Dentistry, Oral Biology*

Microtubules, Cell Division, and Cancer

Active funding: \$110,195

Active funding sources: University of Montreal

#### Karuna Rasineni, PhD

*Assistant Professor, College of Medicine, Biochemistry and Molecular Biology*

Alcoholic and Non-Alcoholic Fatty Liver Disease

Active funding: \$678,430

Active funding sources: National Institute on Alcohol Abuse and Alcoholism (NIH)

#### Ruxana Sadikot, MD

*Professor, College of Medicine, Internal Medicine Pulmonary*

Lung Immune Response and Lung Injury

Active funding: \$593,413

Active funding sources: ReAlta Life Sciences, Inc., Emory University, V.A. Nebraska-Western Iowa Health Care System, V.A. Medical Center – Omaha

**Nicole Shonka, MD**

*Professor, College of Medicine, Internal Medicine Oncology/Hematology*

High-Grade Gliomas and Glioblastoma Research

Active funding: \$734,872

Active funding sources: Aveta Biomics, CNS Pharmaceuticals, Chimerix, Inc., National Cancer Institute (NIH)

**Mentors & Mentored Faculty, New Recruits, and Bridge Funding****Leonardo da Silva Augusto, PhD**

*Assistant Professor, College of Medicine, Pathology, Microbiology & Immunology*

Neuroinflammation and Neurodegeneration

**Kristin Dickinson, PhD**

*Assistant Professor, College of Nursing, Omaha Division*

Targeted Therapies in Leukemias

**Jared Evans, PhD**

*Associate Professor, College of Medicine, Pathology, Microbiology & Immunology*

Molecular Virology and Countermeasures for Emerging Biological Threats

**Guoku Hu, PhD**

*Associate Professor, College of Medicine, Pharmacology and Experimental Neuroscience*

Exosomes and Noncoding RNAs in Neurodegeneration

**Yunju Im, PhD**

*Assistant Professor, College of Public Health, Biostatistics*

Statistical Analysis in Science

**Michael Moulton, MD**

*Professor, College of Medicine, Cardiothoracic Surgery*

Surgical Interventions in Cardiovascular Disease, Atrial Fibrillation, Left Ventricular Assist Devices

**Aimin Peng, PhD**

*Associate Professor, College of Dentistry, Oral Biology*

DNA Damage Responses in Cancer Therapy

**Kendra Ratnapradipa, PhD**

*Assistant Professor, College of Public Health, Epidemiology*

Cancer Health Disparities and Geospatial Health

**Anna Schwartz, PhD**

*Professor, College of Nursing, Omaha Division*

Exercise Oncology and Cancer Care

**DP Singh, PhD**

*Professor, College of Medicine, Ophthalmology and Visual Sciences*

Aging and Degenerative Disorders

**Amar Singh, PhD**

*Professor, College of Medicine, Biochemistry and Molecular Biology*

Preventive Strategies in IBD and Colorectal Cancer

**Roxanne Vandermause, PhD**

*Professor, College of Nursing, Omaha Division*

Community Mental Health and Relational Health

**Jian Xie, PhD**

*Assistant Professor, College of Medicine, Pathology, Microbiology & Immunology*  
Membrane-Associated Virus-Host Interactions

**Pengwei Zhang, PhD**

*Assistant Professor, College of Medicine, Pathology, Microbiology & Immunology*  
Virus-Host Interactions During Intracellular Virus Trafficking

**Investigators receiving continuing NTSBRDF support during 2023-2024****Windy Alonso, PhD**

*Associate Professor, College of Nursing, Omaha Division*  
Heart Failure and Exercise Interventions  
Active funding: \$667,791  
Active funding sources: National Heart, Lung, and Blood Institute (NIH)

**Michael Baine, MD, PhD**

*Associate Professor, College of Medicine, Radiation Oncology*  
Radiation Therapy for Prostate and Bladder Cancer  
Active funding: \$576,000  
Active funding sources: NRG Oncology Foundation, Inc.

**Michele Balas, PhD**

*Professor, College of Nursing, Omaha Division*  
Critical Care and Adult Health Outcomes  
Active funding: \$1,504,234  
Active funding sources: Johns Hopkins University, National Heart, Lung, and Blood Institute (NIH)

**Christopher Barrett, MD**

*Assistant Professor, College of Medicine, Acute Care Surgery*  
Coagulation and Trauma Research  
Active funding: \$179,932  
Active funding sources: Hikari Dx. Inc, National Heart, Lung, and Blood Institute (NIH)

**Surinder Batra, PhD**

*Chairperson, College of Medicine, Biochemistry and Molecular Biology*  
Pancreatic Cancer, Development of Diagnostic/Prognostic Markers for Cancer  
Active funding: \$2,549,442  
Active funding sources: University of Pittsburgh Medical Center, University of Pittsburgh, University of California - San Diego Moores Cancer Center, National Cancer Institute (NIH)

**Kishor Bhakat, PhD**

*Professor, College of Medicine, Genetics Cell Biology & Anatomy*  
Cancer Epigenetics and Transcriptional Memory  
Active funding: \$579,375  
Active funding sources: U.S. Army Congressionally Directed Medical Research Programs

**Jenni Blackford, PhD**

*Professor, Munroe-Meyer Institute*  
Neurobiology of Anxiety and Psychiatric Disorders  
Active funding: \$1,074,346  
Active funding sources: Vanderbilt University, National Institute on Alcohol Abuse and Alcoholism (NIH), Vanderbilt University Medical Center



**Keely Buesing, MD**

*Associate Professor, College of Medicine, Acute Care Surgery*

Delivery of Oxygenated Microbubbles to Improve Oxygenation in Lung Injury and Disease

Active funding: \$300,490

Active funding sources: University of Colorado at Boulder, Johns Hopkins University

**Siddappa Byrareddy, PhD**

*Professor, College of Medicine, Pharmacology and Experimental Neuroscience*

HIV/AIDS Prevention, Host-Virus Dynamics

Active funding: \$914,191

Active funding sources: National Institute on Drug Abuse (NIH), University of Minnesota, Texas Biomedical Research Institute, Glebe Medical Research Foundation

**Kuan-Hua Chen, PhD**

*Assistant Professor, College of Medicine, Neurological Sciences*

Dementia and Brain Health

Active funding: \$242,544

Active funding sources: National Institute on Aging (NIH)

**Suyong Choi, PhD**

*Assistant Professor, Eppley Institute*

Cancer Signaling Mechanisms

Active funding: \$364,490

Active funding sources: National Institute of General Medical Sciences (NIH)

**Christopher Conrady, MD, PhD**

*Assistant Professor, College of Medicine, Ophthalmology and Visual Sciences*

Uveitis and Infectious Diseases

Active funding: \$782,672

Active funding sources: Genentech, Inc., Knights Templar Eye Foundation Inc, National Eye Institute (NIH)

**Melanie Cozad, PhD**

*Assistant Professor, College of Public Health, Health Services, Research, and Administration*

Patient-Centered Care in Chronic and Terminal Illnesses

Active funding: \$750,000

Active funding sources: United Healthcare, Inc.

**Prasanta Dash, PhD**

*Assistant Professor, College of Medicine, Pharmacology and Experimental Neuroscience*

Drug-Drug Interactions in HIV Therapeutics

Active funding: \$383,750

Active funding sources: National Institute on Aging (NIH)

**Becky Deegan, PhD**

*Professor, College of Medicine, Biochemistry and Molecular Biology*

Radiation and Chemotherapy Side Effect Reduction

Active funding: \$5,093,293

Active funding sources: U.S. Army Congressionally Directed Medical Research Programs, National Cancer Institute (NIH)

**Benson Edagwa, PhD**

*Professor, College of Medicine, Pharmacology and Experimental Neuroscience*

Antiretroviral Therapies for HBV and HIV

Active funding: \$744,473

Active funding sources: National Institute of Allergy and Infectious Diseases (NIH)

**Dalia ElGamal, PhD**

*Assistant Professor, Eppley Institute*

B-cell Malignancies and Anti-Tumor Therapeutics

Active funding: \$115,125

Active funding sources: AbbVie, Inc.

**Charity Evans, MD**

*Professor, College of Medicine, Acute Care Surgery*

Acute Care Surgery, Trauma Care, Violence Prevention

Active funding: \$96,845

Active funding sources: Visiting Nurses Association, Nebraska Medical Center

**Joseph Fauver, PhD**

*Assistant Professor, College of Public Health, Epidemiology*

Pathogen Genomics

Active funding: \$218,337

Active funding sources: Yale University

**Alfred Fisher, MD, PhD**

*Professor, College of Medicine, Internal Medicine Geriatrics and Palliative Medicine*

Biology of Aging, Frailty, and Other Factors that Influence Aging

Active funding: \$432,706

Active funding sources: Duke University

**Howard Fox, MD, PhD**

*Professor, College of Medicine, Neurological Sciences*

HIV/AIDS and Neurodegenerative Diseases

Active funding: \$2,144,515

Active funding sources: National Institute on Drug Abuse (NIH), EMMES Corporation

**Apar Kishor Ganti, MD**

*Professor, College of Medicine, Internal Medicine Oncology/Hematology*

Cancer Treatment and Biomarkers

Active funding: \$1,355,819

Active funding sources: Mirati Therapeutics, Brigham & Women's Hospital, Merck Sharp & Dohme Corp., Big Ten Cancer Research Consortium, Poseida Therapeutics Inc., Iovance Biotherapeutics, Inc.

**Stacey Gilk, PhD**

*Professor, College of Medicine, Pathology, Microbiology & Immunology*

Role of Intracellular Pathogens in Host Cell Lipids and Lipid Metabolism

Active funding: \$836,349

Active funding sources: U.S. Department of Agriculture, National Institute of Allergy and Infectious Diseases (NIH)

**Yvonne Golightly, PhD**

*Professor, College of Allied Health Professions, Physical Therapy*

Chronic Disease Prevention

Active funding: \$121,597

Active funding sources: University of North Carolina Chapel Hill

**Rebekah Gundry, PhD**

*Chairperson, College of Medicine, Cellular and Integrative Physiology*

Glycoproteomics and Glycomics to Understand Cardiac Biology and Disease

Active funding: \$3,350,567

Active funding sources: National Institute of General Medical Sciences (NIH), National Heart, Lung, and Blood Institute (NIH)

**Channabasavaiah Gurumurthy, PhD**

*Professor, College of Medicine, Genetics Cell Biology & Anatomy*

End to end genome editing and gene therapy technology development

Active funding: \$763,821

Active funding sources: National Human Genome Research Institute Home (NIH), National Institute of General Medical Sciences (NIH)

**Kyle Hewitt, PhD**

*Associate Professor, College of Medicine, Genetics Cell Biology & Anatomy*

Hematopoietic Stem Cell Regulation and Blood Disease Mechanisms

Active funding: \$383,750

Active funding sources: National Heart, Lung, and Blood Institute (NIH)

**Amy Hoffman, PhD**

*Professor, College of Nursing, Omaha Division*

Physical Activity to Manage Fatigue in Cancer Patients

Active funding: \$448,440

Active funding sources: National Cancer Institute (NIH)

**Michael Hollingsworth, PhD**

*Professor, Eppley Institute*

Pancreatic Cancer

Active funding: \$1,379,521

Active funding sources: U.S. Army Congressionally Directed Medical Research Programs, National Cancer Institute (NIH)

**Ronnie Horner, PhD**

*Professor, College of Public Health, Health Services, Research, and Administration*

mHealth Technology and Neurological Diseases

Active funding: \$30,000

Active funding sources: State of Nebraska Department of Health and Human Services

**Kristina Kintziger, PhD**

*Associate Professor, College of Public Health, Environmental, Agricultural, and Occupational Health*

Environmental and Disaster Epidemiology

Active funding: \$31,718

Active funding sources: Centers for Disease Control

**Mariya Kovaleva, PhD**

*Assistant Professor, College of Nursing, Omaha Division*

Alzheimer's and Dementia Care

Active funding: \$12,000

Active funding sources: American Society of PeriAnesthesia Nurses, Gerontological Advanced Practice Nurses Association Foundation

**James Lawler, MD**

*Professor, College of Medicine, Internal Medicine Infectious Diseases*

Infectious Disease, Biocontainment & Medical Evacuation Training

Active funding: \$86,872

Active funding sources: National Strategic Research Institute

**Joshua Mammen, MD, PhD**

*Professor, College of Medicine, Surgical Oncology*

Surgical Oncology and Cancer Specialization

Active funding: \$81,000  
Active funding sources: Oregon Health and Science University

**Roslyn Mannon, MD**

*Professor, College of Medicine, Internal Medicine Nephrology*  
Kidney Transplantation

Active funding: \$1,811,784

Active funding sources: Verici DX Limited, V.A. Medical Center - Omaha, University of Alabama – Birmingham

**Grinu Mathew, PhD**

*Assistant Professor, Eppley Institute*

Prostate Cancer Research

Active funding: \$333,575

Active funding sources: National Cancer Institute (NIH)

**Abraham Mengist, PhD**

*Assistant Professor, College of Public Health, Epidemiology*

Malaria and Helminth Epidemiology

Active funding: \$185,054

Active funding sources: National Institute of Allergy and Infectious Diseases (NIH)

**Karoly Mirnics, MD, PhD**

*Director, Munroe-Meyer Institute*

Molecular Neurobiology of Brain Diseases

Active funding: \$230,250

Active funding sources: Eunice Kennedy Shriver National Institute of Child Health and Human Development (NIH)

**Paras Kumar Mishra, PhD**

*Associate Professor, College of Medicine, Cellular and Integrative Physiology*

Diabetes-induced Heart Failure

Active funding: \$400,384

Active funding sources: National Heart, Lung, and Blood Institute (NIH)

**Wasim Nasser, PhD**

*Associate Professor, College of Medicine, Biochemistry and Molecular Biology*

Brain Metastasis, Breast Cancer, and Lung Cancer

Active funding: \$438,235

Active funding sources: National Cancer Institute (NIH)

**Matthew Nonnenmann, PhD**

*Professor, College of Public Health, Environmental, Agricultural, and Occupational Health*

Industrial Hygiene and Bioaerosols

Active funding: \$294,803

Active funding sources: Texas A&M University, University of Iowa

**David Oupicky, PhD**

*Professor, College of Pharmacy, Pharmaceutical Science*

Polymers & Nanoparticles for Delivery of Drugs & Genes

Active funding: \$1,353,964

Active funding sources: National Institute on Alcohol Abuse and Alcoholism (NIH), National Cancer Institute (NIH), National Institute of Diabetes and Digestive and Kidney Diseases (NIH)

**Edward Peters, SCD**

*Chairperson, College of Public Health, Epidemiology*

Cancer and Chronic Diseases

Active funding: \$745,924

Active funding sources: National Institute on Aging (NIH), Emory University

**Iraklis Pipinos, MD, PhD**

*Professor, College of Medicine, Vascular Surgery*

Regenerative Medicine, Peripheral Arterial Disease, Repair of Skeletal Muscle Tissue in the Extremities

Active funding: \$1,426,987

Active funding sources: National Institute on Aging (NIH), Emory University, University of Nebraska – Omaha

**Prakash Radhakrishnan, PhD**

*Associate Professor, Eppley Institute*

Glycobiology, Cell Signaling, and Therapeutics in Pancreatic Cancer

Active funding: \$792,000

Active funding sources: American Cancer Society

**Don Ronning, PhD**

*Professor, College of Pharmacy, Pharmaceutical Science*

Tuberculosis, Development of Anti-Infective Compounds

Active funding: \$407,216

Active funding sources: National Institute of Allergy and Infectious Diseases (NIH)

**Derrick Samuelson, PhD**

*Assistant Professor, College of Medicine, Internal Medicine Pulmonary*

Role of Microbiome in Defense Against Respiratory Pathogens

Active funding: \$632,070

Active funding sources: National Institute of Diabetes and Digestive and Kidney Diseases (NIH)

**Nora Sarvetnick, PhD**

*Professor, College of Medicine, Transplant Surgery*

Autoimmune Diseases and Type 1 Diabetes Research

Active funding: \$778,669

Active funding sources: Edna Ittner Trust Fund, National Institute of Allergy and Infectious Diseases (NIH)

**Lauren Sauer, MS**

*Associate Professor, College of Public Health, Environmental, Agricultural, and Occupational Health*

Impact of Bio-emergencies and Disasters on Healthcare Systems and Policies

Active funding: \$343,224

Active funding sources: Advanced Technology International

**Marcia Shade, PhD**

*Assistant Professor, College of Nursing, Omaha Division*

Geriatric Nursing and Medication Safety

Active funding: \$5,000

Active funding sources: American Society for Pain Management Nursing

**Paul Trippier, PhD**

*Professor, College of Pharmacy, Pharmaceutical Science*

Small Molecule Drug Discovery for Cancer & Neurodegenerative Diseases

Active funding: \$1,746,381

Active funding sources: National Institute on Aging (NIH), U.S. Army Congressionally Directed Medical Research Programs, Eunice Kennedy Shriver National Institute of Child Health and Human Development (NIH), National Cancer Institute (NIH)

**Dana Verhoeven, PhD**

*Assistant Professor, College of Public Health, Health Services, Research, and Administration*  
Health Care Delivery and Dynamics  
Active funding: \$96,193  
Active funding sources: Winnebago Comprehensive Healthcare System

**Nick Woods, PhD**

*Assistant Professor, Eppley Institute*  
Cancer Signaling and Systems Biology  
Active funding: \$95,224  
Active funding sources: Virginia Commonwealth University

**Steven Yeh, MD**

*Professor, College of Medicine, Ophthalmology and Visual Sciences*  
Ocular Inflammation and Diseases  
Active funding: \$1,605,593  
Active funding sources: U.S. Agency for International Development, Cincinnati Children's Hospital Medical Center, Priovent Therapeutics, Inc., Oregon Health and Science University, University of California - San Francisco, Adverum Biotechnologies, Inc., National Eye Institute (NIH), The Retina Society

**Jae Hyuk Yoo, PhD**

*Assistant Professor, College of Medicine, Ophthalmology and Visual Sciences*  
Molecular Pathways in Tumors & Cancers of the Eye  
Active funding: \$247,551  
Active funding sources: National Cancer Institute (NIH)

**Ying Zhang, PhD**

*Professor, College of Public Health, Biostatistics*  
Statistical Methodology in Health Sciences  
Active funding: \$79,571  
Active funding sources: Research Institute at Nationwide Children's Hospital, V.A. Medical Center – Indianapolis

**Peng Zhong, PhD**

*Assistant Professor, College of Medicine, Neurological Sciences*  
Sleep and Brain Disorders  
Active funding: \$514,450  
Active funding sources: National Institute on Drug Abuse (NIH), CurePSP, Inc.

**Research Program and Infrastructure Development**

A total of \$3,349,188 (43.5%) was invested in research program and infrastructure development in 2023-24. Additionally, \$184,447 was spent on pilot grants to spur joint research programs between University of Nebraska–Lincoln and University of Nebraska Medical Center faculty. Infrastructure support included animal facilities support, research core laboratories, grant management, and educational, training and compliance programs for NIH-funded scientists. This investment in infrastructure directly supports the work of UNMC's nationally recognized scientists. Examples of infrastructure supported by these funds include support of the Comparative Medicine department for animal facility equipment and program development, critical software tools and infrastructure that support research compliance and increase research efficiency, and translational cores and modernized facilities for computational and computer-based research. Core facilities are essential for the success of our NIH-funded Centers such as the Cognitive Development of Neuroscience and Aging Center, the Nebraska Center for Heart and Vascular Research, and the Fred & Pamela Buffett Cancer Center. They also provide services to investigators across the region. Joint programs between other NU System campuses and UNMC included funding for the following project areas:

### **Nebraska Center for the Prevention of Obesity Diseases (NPOD)**

- Punita Dhawan, PhD – Role of MASTL in Pancreatic Steatosis and Associated Diseases
- Rebecca Deegan, PhD – Understanding the mechanism of obesity-induced radiation damage

### **Nebraska Research Initiative**

- Elizabeth Wellsandt, DPT, PhD – Real World Assessment of Knee Function After Injury
- Jana Ponce, PhD – Omega-3 Fatty Acids to Inhibit Drug-Induced Inflammation & Synaptic Alterations

## **Minority Health and Health Disparities Research and Mentor Programs**

In 2023-24, UNMC invested \$463,171 in minority health and health disparities by supporting UNMC's Center for Reducing Health Disparities, investing in pilot projects for health disparities research, and mentoring trainees through the student success and engagement program and the Summer Undergraduate Research Program for students from diverse and disadvantaged backgrounds.

The Center for Reducing Health Disparities at the UNMC College of Public Health is focused on maintaining close partnerships with underserved communities—especially low-income, minority communities—and other stakeholders throughout Nebraska to identify, prioritize, and then develop and implement evidence-based health promotion programs and to conduct health disparities research. The Center works with faculty from across UNMC and other University of Nebraska campuses to develop research protocols that are community, cultural, and linguistically competent. The Center assists as a primary partner with faculty and departments in the development stage of research proposals. NTSBRDF supported in part faculty and staff at the center who worked on community-based research projects resulting in grants, publications, and local public health efforts. Center members also offer graduate-level courses and provide educational presentations and guest lectures.

An investment of \$46,674 was made in health disparities research pilot projects during this year, which focused on the following:

Project Title: Improving diabetes outcomes in patients who speak Karen or Kanjobal

Principal Investigator: Melanie Menning, MD, MPH, Associate Professor, College of Medicine, Family Medicine

Project Title: Integrating E-Health and Lay Navigation to Optimize Treatment Initiation and Adherence (REALIZE) among Black Women with Breast Cancer: A Pilot Implementation Feasibility Study

Principal Investigator: Robyn Lally, PhD, RN, Professor, College of Nursing, Omaha Division

Student success and engagement focuses on programs to identify and encourage undergraduate students from disadvantaged backgrounds interested in health professions or health research graduate education to pursue their goals and consider attending programs at UNMC. Participating students conduct research with mentors for two summers. Students become members of actively funded UNMC research teams for 10 weeks each summer during which they develop technical laboratory skills, expand their scientific knowledge base, analyze data, document results, participate in team meetings, attend research weekly seminars, and then present their work at the end of each summer during a research poster session attended by their peers and mentors. They learn about career paths, interviewing skills, balancing the stresses of graduate training and personal life, and visit with successful role models. The Summer Undergraduate Research Program annually selects undergraduate students to participate in enrichment seminars and experiential learning to expand their scientific knowledge and gain an understanding of health care research options. A total of \$61,469 was invested in these programs.

Faculty from diverse backgrounds also bring diverse perspectives to their science and research and help create a welcoming environment for students considering health professions and graduate training in our programs.

**University of Nebraska Medical Center**  
**Nebraska Tobacco Settlement Biomedical Research Development Fund**  
**FY2024 Allocation**

<b>Strategic Faculty Recruitment and Retention</b>	<b>FY 2023-2024 Allocation</b>
College of Allied Health Professions Yvonne Golightly, PhD	\$ 54,791
College of Dentistry Benjamin Kwok, PhD; Aimin Peng, PhD	\$ 113,233
College of Medicine	
Anesthesiology Subhash Chand, PhD	\$ 3,633
Biochemistry/Molecular Biology Surinder Batra, PhD; Becky Deegan, PhD; Wasim Nasser, PhD; Karuna Rasineni, PhD; Amar Singh, PhD	\$ 273,809
Cellular/Integrative Physiology Pooneh Bagher, PhD; Rebekah Gundry, PhD, Paras Kumar Mishra, PhD	\$ 285,600
Genetics, Cell Biology, and Anatomy Kishor Bhakat, PhD; Kyle Hewitt, PhD; Channabasavaiah Gurumurthy, PhD	\$ 61,040
Internal Medicine Alfred Fisher, MD, PhD; Apar Kishor Ganti, MD; James Lawler, MD; Roslyn Mannon, MD; Ruxana Sadikot, MD; Derrick Samuelson, PhD; Nicole Shonka, MD	\$ 526,631
Neurological Sciences Kuan-Hua Chen, PhD; Howard Fox, MD, PhD; Peng Zhong, PhD	\$ 65,835
Obstetrics/Gynecology Lynda Harris, PhD	\$ 136,638
Ophthalmology and Visual Sciences Christopher Conrady, MD, PhD; DP Singh, PhD; Steven Yeh, MD; Jae Hyuk Yoo, PhD	\$ 223,996
Pathology, Microbiology, and Immunology Leonardo da Silva Augusto, PhD; Jared Evans, PhD; Stacey Gilk, PhD; Jian Xie, PhD; Pengwei Zhang, PhD	\$ 212,790
Pharmacology and Experimental Neuroscience Siddappa Byrareddy, PhD; Prasanta Dash, PhD; Benson Edagwa, PhD; Guoku Hu, PhD	\$ 111,241
Radiation Oncology Michael Baine, MD, PhD	\$ 12,200
Surgery Christopher Barrett, MD; Keely Buesing, MD; Jason Cook, MD, PhD; Charity Evans, MD; Iraklis Pipinos, MD, PhD; Nora Sarvetnick, PhD	\$ 118,041
Surgical Oncology Joshua Mammen, MD, PhD	\$ 136,112
College of Nursing  Windy Alonso, PhD; Michele Balas, PhD; Kristin Dickinson, PhD; Amy Hoffman, PhD; Mariya Kovaleva, PhD; Anna Schwartz, PhD; Marcia Shade, PhD; Roxanne Vandermause, PhD	\$ 236,189
College of Pharmacy David Oupicky, PhD; Don Ronning, PhD; Paul Trippier, PhD	\$ 160,376
College of Public Health Melanie Cozad, PhD; Joseph Fauver, PhD; Ronnie Horner, PhD; Yunju Im, PhD; Kristina Kintziger, PhD; Abraham Mengist, PhD; Matthew Nonnenmann, PhD; Edward Peters, SCD; Kendra Ratnapradipa, PhD; Lauren Sauer, MS; Dana Verhoeven, PhD; Ying Zhang, PhD	\$ 493,649
Eppley Institute for Research in Cancer and Allied Diseases Hamid Band, MD, PhD; Suyong Choi, PhD; Dalia ElGamal, PhD; Michael Hollingsworth, PhD; Grinu Mathew, PhD; Amarnath Natarajan, PhD; Prakash Radhakrishnan, PhD; Nick Woods, PhD	\$ 286,372
Munroe-Meyer Institute Jenni Blackford, PhD; Karoly Mirnics, MD	\$ 197,242
<b>Subtotal</b>	<b>\$ 3,709,418</b>



**Research Program & Infrastructure Development**

Comparative Medicine Facility Support	\$	625,384
IRB & SPAdmin - ITS Service Level Agreements	\$	467,401
Research Core Lab Support	\$	970,313
DRC Research Resource Support	\$	143,549
Institutional Research Resource Support	\$	443,438
Dry Lab Infrastructure Modernization	\$	170,749
Center for Agricultural Safety and Health	\$	40,000
Great Plains IDEa CTR	\$	100,000
Rural Drug Addiction Research CTR (RDAR)	\$	78,701
Nebraska Center for Nanomedicine (NCN)	\$	11,440
Alcohol Center of Research-Nebraska (ACORN)	\$	25,000
Cognitive Neuroscience of Development and Aging (CoNDA)	\$	82,389
Biosciences Research Training Program	\$	60,000
Cardiovascular Research Program	\$	37,780
Mentored Scholars for Clinical and Translational Research	\$	93,044

**Subtotal \$ 3,349,188**

**Joint UNMC-UNL-UNO Research Programs**

UNL - COBRE Phase II NPOD (Deegan)	\$	67,326
UNL - Role in MASTL in Pancreatic Stearosis & Associated Diseases (Dhawan)	\$	32,945
UNL - Omega-3 Fatty Acids to Inhibit Drug-Induced Inflammation & Synaptic Alterations (Ponce)	\$	25,000
UNL - Real World Assessment of Knee Function After Injury (Wellsandt)	\$	47,176
UNL - Obesity Prevention (Deegan)	\$	12,000

**Subtotal \$ 184,447**

**Minority Health & Health Disparities Research and Mentor Programs**

Center for Reducing Health Disparities	\$	355,028
Student Success & Engagement	\$	61,469
Health Disparities Award (Menning)	\$	4,225
Health Disparities Award (Lally)	\$	42,449

**Subtotal \$ 463,171**

**Total FY 2023-24 Allocation \$ 7,706,224**



## Meet Alexey Kamenskiy, PhD

**Investment from tobacco settlement funding: \$266,014**

**Total portfolio through FY24: \$2.27 million**

**Return on investment: 9 to 1**

Alexey Kamenskiy, PhD, chair of UNO's Department of Biomechanics and director of the Center for Cardiovascular Research in Biomechanics (CRiB) is a distinguished researcher and educator whose work bridges biomechanics and vascular biology. He focuses on developing innovative medical technologies and treatments that improve vascular health and patient outcomes. His research encompasses the biomechanics of large arteries, the aging of vascular tissues, and the design of advanced medical devices, such as vascular grafts and stents, to treat conditions like aneurysms and peripheral artery disease.

Dr. Kamenskiy's interdisciplinary approach, involving collaborations with clinicians, engineers, and biologists, has advanced understanding of how vascular tissues change with age and how these changes affect treatment efficacy. Under his leadership, the Vascular Research and Development Lab at UNO has contributed significantly to the field, particularly in vascular graft development, stent design, and the creation of novel imaging techniques for more accurate diagnoses and treatment planning.

In addition to his impactful research, Dr. Kamenskiy is deeply committed to education and mentorship, preparing the next generation of scientists and engineers to tackle critical challenges in biomechanics and medical innovation. Recognized for his contributions to both research and education, he continues to advance the frontiers of cardiovascular science while fostering an environment of collaboration and discovery.

Dr. Kamenskiy's research portfolio is robust, with a particular emphasis on understanding and addressing the mechanical properties of vascular tissues, the development of innovative medical devices, and the exploration of novel therapeutic strategies for cardiovascular health. His work has garnered national recognition, and in fiscal year 2024 he achieved a major milestone by securing an \$11 million COBRE grant from

the National Institutes of Health (NIH). This prestigious grant supports the establishment of the CRiB, a multidisciplinary initiative he directs, aimed at advancing cardiovascular research and fostering collaboration across academic and clinical institutions. To support this effort, the Office of Research and Creative Activity (ORCA) provided additional funding to secure essential equipment for a state-of-the-art tissue analysis core, a critical component of CRiB's infrastructure that will enable advanced studies and accelerate impactful discoveries in cardiovascular health.

Dr. Kamenskiy remarked, "Biomedical research funds have been essential to advancing my work in vascular biomechanics and developing innovative treatments for cardiovascular diseases. This support facilitates impactful research and helps attract and retain talented students and researchers, strengthening UNO's role as a leader in biomedical innovation."

In addition to his success in securing external funding, Dr. Kamenskiy was awarded the College of Education, Health, and Human Sciences (CEHHS) Dean's Excellence in Research Professorship in FY2024, an honor that underscores his exceptional contributions to research and scholarship. To support his continued pursuit of sponsored grants and further his innovative work, the ORCA invested \$15,000 in biomedical research funds as part of CEHHS Dean's Excellence in Research Professorship.

Dr. Kamenskiy's dedication to advancing cardiovascular research not only elevates UNO's research enterprise but also has the potential to make a lasting impact on the lives of patients worldwide. His work exemplifies the university's commitment to fostering innovative, high-impact research that addresses critical societal challenges.

# UNIVERSITY OF NEBRASKA AT OMAHA

## Nebraska Tobacco Settlement Biomedical Research Fund (NTSBRDF)

**Year 23: July 1, 2023 – June 30, 2024**  
**Progress Report**

### Executive Summary

This is the fourth year the University of Nebraska at Omaha (UNO) received Nebraska Tobacco Settlement Biomedical Research Development Funding (NTSBRDF) and we expect it will continue to boost our biomedical research portfolio. The UNO investment of NTSBRDF dollars was concentrated in these areas:

- Recruitment and retention of excellent scientists
- Research infrastructure and program development

During 2023-24, UNO received an additional \$431,902 in Nebraska Tobacco Settlement Funds and expenses incurred were as follows in FY2024:

- \$392,142 in strategic recruitment of new research faculty or retention of meritorious researchers.
- \$251,457.28 in program and other infrastructure development, such as capital equipment, new core development, and Centers.

Since its launch at the start of fiscal year 2022, the NTSBRDF program has played a pivotal role in recruiting and retaining world-class scientists, significantly enhancing UNO's research funding portfolio. In the past year, UNO secured over \$40 million in sponsored awards, supporting activities across research, education, and public service. The Office of Research and Creative Activity (ORCA) has demonstrated consistent growth in research output, marked by a 55.5% increase in proposal submissions over the last decade. Notably, compared to last year, proposal submissions increased by \$3 million, reflecting a robust effort to seek external funding. This upward trajectory suggests continued expansion in awards in the coming years.

The rise in extramural research funding has a tangible and positive impact on Nebraska's economy. These grants not only fund faculty and staff salaries but also indirectly drive local spending through purchases. Furthermore, the scientists supported by these grants attract additional funding, foster collaboration, and serve as a draw for prospective students, industries, and visitors, enhancing the universities and state's broader academic and economic ecosystem.

## Strategic Faculty Recruitment & Retention

In 2023-24, UNO invested \$392,142 of NTSBRD funds in strategic recruitment and retention of faculty researchers. These supported faculty members currently have a combined portfolio of extramurally funded research valued at over \$5.26 Million. The funding of these investigators came predominantly from the National Institutes of Health (NIH).

A small portion of tobacco funds in FY24 was strategically allocated to support the College of Arts and Sciences with recruitment efforts aimed at strengthening UNO's research capacity. A nominal amount of \$2,302 was used to cover recruitment expenses for candidates, including travel expenses, for key faculty positions in the Departments of Biology and Chemistry. These efforts were focused on recruiting genetics researchers for Biology and faculty in Chemistry who demonstrate high potential for securing external research funding.

The investment proved successful, resulting in the recruitment of three highly qualified faculty members. These new hires bring exceptional expertise and significant potential to contribute to UNO's growing research portfolio. Their work is expected to advance research in genetics, chemistry, and related fields, aligning with UNO's mission to drive innovation and expand its impact through externally funded research.

To fully support these talented new faculty members, tobacco settlement funds remain a vital resource for covering start-up packages, which include equipment, laboratory space, and other resources essential for their success. Start-up packages are crucial for enabling new faculty to establish their research programs, secure external grants, and contribute meaningfully to UNO's strategic goals in research and creative activity.

Continued access to tobacco settlement funds is imperative to maintaining and enhancing our ability to recruit and retain exceptional researchers. These funds allow UNO to offer competitive start-up packages that not only attract top talent but also position them for long-term success. By investing in recruitment and start-up support, we are ensuring that UNO remains a leader in research and creative activity, driving innovation and making a lasting impact.

Recruiting and retaining underrepresented minority faculty ensures that research reflects the diverse populations it serves, helping to bridge health disparities and foster equity in biomedical advancements. In support of NTSBRF's goals to reduce health disparities and advance minority health, 46% of the funds utilized for recruitment and retention was utilized on faculty from underrepresented minorities. Their recruitment and retention efforts underscore our commitment to diversifying the biomedical research workforce and addressing health inequities, an effort which is in alignment with initiatives at the University of Nebraska Medical Center (UNMC) and other area institutions.

UNO continues to prioritize these efforts as part of our strategic investment in research excellence. By supporting minority faculty, we aim to expand representation in scientific leadership, encourage diverse perspectives in research methodologies, and directly tackle health disparities affecting Nebraska's underserved communities.

## Investigators receiving new and continuing NTSBRDF support during 2023-2024

**Investigator:** Ernest Chivero

**Position, Unit, Department:** Assistant Professor, Department of Psychology

**Expertise:** Molecular mechanisms underlying substance use disorder-mediated activation of microglia and neuroinflammation

**External Funding:**

Proposals Pending: \$559,476

Funding sources: National Science Foundation (NSF), National Institutes of Health (NIH)

**Investigator:** Joel Elson

**Position, Unit, Department:** Assistant Professor, School of Interdisciplinary Informatics

**Expertise:** Human trust in computer mediated interactions, Eye-tracking and neurophysiological measures, Psychometric Assessment

**External Funding:**

Current Funding Total: \$1,982,972

Funding sources: U.S. Department of Homeland Security

**Investigator:** Erik Garcia

**Position, Unit, Department:** Assistant Professor of Neuroscience and Behavior, Department of Psychology

**Expertise:** Neuropsychopharmacology of substance use disorders

**External Funding:**

Current Funding Total: \$475,294

Funding sources: National Institutes of Health (NIH), Peter F. McManus Charitable Trust

**Investigator:** Dario Gherzi

**Position, Unit, Department:** Associate Professor, School of Interdisciplinary Informatics

**Expertise:** Cancer Genomics, Structural Bioinformatics, Immunoinformatics, Small Molecule Bioinformatics, Machine Intelligence, Agent-based modeling.

**External Funding:**

Current Funding Total: \$330,781

Funding sources: National Institutes of Health (NIH), National Science Foundation (NSF)

**Investigator:** Nathaniel Hunt

**Position, Unit, Department:** Associate Professor, Department of Biomechanics

**Expertise:** Dynamics and Control of Balance and Agility, Augmented Sensorimotor Control, Reducing Falls for Older Adults, Canopy Locomotion Biomechanics, Bioinspired Robotics

**External Funding:**

Proposals Pending: \$3,289,504

Funding sources: National Institutes of Health (NIH), American Society of Biomechanics

**Investigator:** Majid Jadidi

**Position, Unit, Department:** Assistant Professor, Department of Biomechanics

**Expertise:** Cardiovascular Biomechanics, Vascular Mechanobiology, Constitutive Modeling of Biological Tissues and Synthetic Grafts, Machine Learning and Data Analytics in Biomechanics

**External Funding:**

Proposals Pending: \$870,594

Funding sources: National Institutes of Health (NIH), Children's Cancer Research Fund, Rally Foundation, American Heart Association

**Investigator:** Alexey Kamenskiy

**Position, Unit, Department:** Professor and Department Chair, Cardiovascular Research in Department of Biomechanics

**Expertise:** Experimental and computational vascular mechanobiology and mechanophysiology, vascular pathology and aging, devices and materials for open and endovascular repairs

**External Funding:**

Current Funding Total: \$2,267,912

Funding sources: National Institutes of Health (NIH)

**Investigator:** Song-Young Park

**Position, Unit, Department:** Associate Professor, School of Health and Kinesiology

**Expertise:** Endothelial mitochondrial function, Reactive oxygen species, Aging, Peripheral artery disease, Spinal cord injury.

**External Funding:**

Current Funding Total: \$193,038

Funding sources: National Institutes of Health (NIH)

**Investigator:** Yury Salkovskiy

**Position, Unit, Department:** Assistant Professor, Department of Biomechanics

**Expertise:** Materials science, cardiovascular materials and devices, personal protective equipment, nanomanufacturing

**External Funding:**

Proposals Pending: \$7,070,530.00

Funding sources: National Institutes of Health (NIH), National Science Foundation (NSF) Nebraska EPSCoR

**Investigator:** Roma Subramanian

**Position, Unit, Department:** Associate Professor and Graduate Program Chair, Communication

**Expertise:** Health Communication, health news, health campaigns, stigma communication, social media & health, art-based health interventions

**External Funding:**

Current Funding Total: \$15,784

Funding sources: National Institutes of Health (NIH)

**Investigator:** Ada-Rhodes Wish

**Position, Unit, Department:** Assistant Professor, School of Interdisciplinary Informatics

**Expertise:** Computational Cognition, Robotics, and Design Decision Making

**External Funding:**

Proposals Pending: \$511,703

Funding sources: NASA, National Science Foundation (NSF)

**Investigator:** Joe Yao

Position, Unit, Department: Assistant Professor, Department of Chemistry

**Expertise:** Computational Biochemistry, Bioinformatics, Biophysics

**External Funding:**

Proposals Pending: \$25,000

Funding sources: National Science Foundation (NSF) Nebraska EPSCoR

## Research Program and Infrastructure Development

In FY24, the Office of Research and Creative Activity (ORCA) strategically allocated \$251,014 in tobacco settlement funds to support the establishment of a new Tissue Analysis Core (TAC), a critical resource for the newly awarded Center of Biomedical Research Excellence (COBRE), the Center for Cardiovascular Research in Biomechanics (CRiB). This COBRE, funded by the National Institutes of Health (NIH), represents a major award for UNO, underscoring the university's growing prominence in biomedical research. The funds were specifically allocated for the purchase of cutting-edge equipment, an extension-inflation device, essential for the TAC's functionality. TAC's mission is to provide researchers with unparalleled tools to study tissue mechanics, develop novel therapies, and improve cardiovascular disease treatment. As the only facility of its kind in the region, TAC serves as a hub for collaboration and innovation, supporting faculty, students, and external researchers. Services provided include Mechanical Characterization, Imaging and Structural Evaluation, Constitutive Modeling of Soft Tissue, Prototype Development and Validation, and Assistance with Animal Validation. This investment highlights ORCA's commitment to providing the infrastructure needed to support transformative, NIH-funded initiatives that elevate UNO's research enterprise.

Beyond this core investment, the remaining tobacco funds were allocated to other strategic initiatives aligned with UNO's research priorities. In FY23, \$86,958.21 in tobacco funds were expended to support the Biomechanical Rehabilitation and Manufacturing Initiative (BRMI), a component of UNO's Big Ideas program. The majority of these funds were used during FY23 to advance innovative biomechanical research, with a small balance of \$443 utilized in FY24. This continued support reflects ORCA's focus on fostering interdisciplinary collaboration and innovation.

Additionally, tobacco funds were used to support research under the Research Development Program (RDP) in FY23. The program provided funding to investigators David Kingston, Adam Rosen, Song-Young Park, and Spyros Mastorakis, enabling faculty-driven projects with high potential for external funding and impact. These RDP projects illustrate the program's vital role in enhancing research capacity and supporting faculty success.

Through these strategic allocations, ORCA has leveraged tobacco funds to support cutting-edge research infrastructure, advance interdisciplinary initiatives, and empower faculty-led research, furthering UNO's mission and strengthening its position as a leader in research and innovation.

**University of Nebraska Omaha**  
 Nebraska Tobacco Settlement Biomedical Research Development Fund  
 FY2024 Allocation

<b>Strategic Faculty Recruitment and Retention</b>	<b>FY 2023-2024 Allocation</b>
Ernest Chivero, PhD, Psychology and Neuroscience	\$ 2,831
Joel Elson, PhD, School of Interdisciplinary Informatics	\$ 34,606
Erik Garcia, PhD, Psychology and Neuroscience	\$ 46,405
Dario Ghersi, MD, PhD, School of Interdisciplinary Informatics	\$ 31,949
Nathaniel Hunt, PhD, Biomechanics	\$ 4,337
Majid Jadidi, PhD, Biomechanics	\$ 64,869
Alexey Kamenskiy, PhD, Biomechanics	\$ 18,527
Song-Young Park, PhD, School of Health and Kinesiology	\$ 8,613
Yury Salkovskiy, PhD, Biomechanics	\$ 121,871
Roma Subramanian, PhD, Communication	\$ 9,217
Ada-Rhodes Wish, PhD, School of Interdisciplinary Informatics	\$ 40,144
Joe Yao, PhD, Chemistry	\$ 6,471
College of Arts and Sciences, Biology and Chemistry	\$ 2,302
<b>Subtotal</b>	<b>\$ 392,142</b>
<b>Research Program &amp; Infrastructure Development</b>	
Tissue Analysis Core (TAC)	\$ 251,014
Biomechanical Rehabilitation and Manufacturing Initiative (BRMI)	\$ 443
<b>Subtotal</b>	<b>\$ 251,457</b>
<b>Total FY 2023-24 Allocation</b>	<b>\$ 643,599</b>



## Meet Janos Zempleni, PhD

**Investment from tobacco settlement funding: \$1,259,558**

**Total portfolio through FY24: \$30 million**

**Return on investment: 24 to 1**

Since joining the University of Nebraska-Lincoln faculty in 2001, Janos Zempleni, PhD, has uncovered groundbreaking connections between nutrition and disease, transforming lives in Nebraska and across the world.

Dr. Zempleni first received tobacco settlement funds in 2003 as seed funding for his work in epigenetic regulation and identifying novel modifications of histones and their roles in cell biology. He received additional funding in 2004 to support his lab setup and again in 2011 to support his retention. Another key investment of tobacco settlement funds was made in 2009 to launch the Nebraska Gateway to Nutrigenomics group, which provided a foundation for a deeper research focus in nutrition and epigenetics and facilitated faculty collaborations across campuses to leverage the University of Nebraska system's collective strengths. Tobacco settlement fund investments have also been key in enabling UNL to compete for, and sustain, all three phases of the National Institutes of Health-funded Center of Biomedical Research Excellence (COBRE), which established the Nebraska Center for the Prevention of Obesity Diseases (NPOD) in 2014.

NPOD has become an internationally distinctive research hub, with a focus on using bioactive compounds in foods to prevent, treat and cure obesity-related diseases including Type 2 diabetes, cardiovascular disease and non-alcoholic fatty liver disease.

With roughly 40% of Americans and Nebraskans suffering from obesity-related illnesses, the center's work is critical to improving health and well-being across the state. Under Dr. Zempleni's leadership, the center aims to devise solutions that use naturally occurring compounds – such as choline, fiber and omega-3 fatty acids – to prevent, treat and cure obesity-related diseases. The center also studies the many factors that influence metabolism and metabolic regulation.

One of NPOD's focus areas has been conducting obesity intervention studies in underserved populations in western Nebraska and in Native American communities. The center aims to devise solutions that are both consumer friendly and economically feasible.

Fifty-nine faculty members from 26 departments at UNL, the University of Nebraska Medical Center and the University of Nebraska at Omaha contribute to NPOD's success. In September 2024, NPOD received a third round of NIH COBRE to solidify the center's research base for continued success. The center also prides itself on providing excellent educational opportunities for undergraduate, graduate and postdoctoral students.

In addition to his NPOD work, Dr. Zempleni and his team pioneered a new line of discovery and was the first research team to demonstrate that milk-derived exomes are bioavailable and can help regulate genes and metabolism in the humans and animals who consume milk. This research shows promise to improve scientists' understanding of infant nutrition, cognitive development and gut bacteria. Nebraska researchers also are exploring how milk-transported siRNA genes could be used to shut down the growth of the IDH1 gene, whose mutations result in brain tumors.

Dr. Zempleni is a fellow of the American Association for the Advancement of Sciences and is listed among the top 2% of most-cited researchers worldwide, leaving an indelible mark on the field and improving health outcomes for countless people across the U.S. and worldwide.



# UNIVERSITY OF NEBRASKA-LINCOLN

## Nebraska Tobacco Settlement Biomedical Research Fund (NTSBRDF)

Year 23: July 1, 2023 – June 30, 2024  
Progress Report

### Executive Summary

UNL's goal for the NTSBRDF program is to leverage this investment to increase the university's biomedical research capacity in terms of human resources, cutting-edge research equipment and external research funding. In the 23 years of NTSBRDF funding, UNL's biomedical research capacity has grown continuously to address the needs of the state of Nebraska and the nation. This fund has enabled UNL researchers to contribute knowledge and technical advancements required to prevent, diagnose and treat disease, ultimately leading to the improved health of Nebraskans and stimulating economic development and employment opportunities in the state.

UNL has invested NTSBRDF funds in four main areas:

- **Strategic Faculty Recruitment and Retention:** UNL has recruited and/or retained a group of faculty members whose research aligns closely with the university's strategic priorities in disease prevention and treatment. These faculty either transfer strong externally funded research programs to UNL or have a high potential for achieving rapid research success as evidenced by the acquisition of new funding. This investment in human resources is a highly effective means of increasing biomedical research capacity and often provides the most immediate return.
- **Research Program and Infrastructure Development:** UNL has employed NTSBRDF funds to strengthen existing research programs and increase their competitiveness for external awards that support major interdisciplinary research programs aligned with UNL's research priorities in biomedicine.
- **Minority Health Research Grants:** These research investments specifically address issues of importance to the health of Nebraska's minority populations.
- **Joint Research Programs:** These programs bring together UNL and other NU System faculty to collaboratively address complex biomedical research problems. Each institutional partner contributes unique expertise to find solutions in ways that would not be possible if each entity were working alone.

**In 2023-2024, UNL invested a total of \$2,743,110** from the NTSBRDF, including an allocation of \$786,577 for four faculty hires and one faculty retention; \$1,035,089 to support research programs and infrastructure development; \$820,944 for grants to researchers addressing minority health disparities in Nebraska; and \$100,500 for one joint UNL/UNMC/UNO research project.

As has been the case in previous years, these investments have not only made a great impact on UNL's research climate and productivity, but have leveraged a total of \$46,114,253 in external funding in 2023-2024 – an impressive return that speaks to the value of the investment UNL has made in building biomedical research excellence.

## Strategic Faculty Recruitment and Retention

**Introduction:** In 2023-2024, UNL invested \$786,577 of NTSBRDF funds to expand faculty expertise into new areas of biomedical research that have a strong likelihood of increasing the university's base of externally funded research programs of interest to the National Institutes of Health, other federal agencies (e.g., Centers for Disease Control and Prevention and National Science Foundation) and private agencies (e.g., American Heart Association and American Cancer Society). These funds also made it possible to hire or retain five faculty members at the assistant and full professor levels. Their research will focus on improving human health and well-being. As an example, one faculty member studies traumatic brain injury and non-invasive interventions for improving recovery. Another faculty member investigates factors affecting interpersonal violence and sexual assault, as well as their consequences and potential prevention. These investments in new faculty hires and the retention of current faculty resulted in the transfer or acquisition of new research awards totaling \$32,020,015 in 2023-2024.

**Investigator:** Aron Barbey, Ph.D.

**Position Title & Department:** Professor, Department of Psychology

**Expertise:** Dr. Barbey's program of research investigates the underlying neural mechanisms of human intelligence and decision making. Translational investigations of traumatic brain injury and sports-related concussion focus on improving these critical functions through non-invasive brain stimulation, mindfulness meditation, physical activity, aerobic fitness training and nutritional interventions.

**External Funding:**

Active: \$1,666,299

Proposals Pending: \$191,797

Funding Source: Associations/Foundations, Industry, Defense

**Investigator:** Tatsuya Yamada, Ph.D.

**Position Title & Department:** Assistant Professor, Department of Biochemistry

**Expertise:** Dr. Yamada's research program focuses on the interaction between brain and other organs that are essential for metabolic control in mammalian systems. Of particular interest are mitochondria, the primary cellular components that produce most of the chemical energy needed by a cell. The overarching goal is to uncover the nature of mitochondria's inter-organ interaction and how this may contribute to organ function and pathology.

**External Funding:**

Active: \$0

Proposals Pending: \$18,887

Funding Source: NSF

**Investigator:** Tierney Lorenz, Ph.D.

**Position Title & Department:** Assistant Professor, Department of Psychology

**Expertise:** Dr. Lorenz's research examines the interactions among mental, physical and reproductive health. This work investigates the ways that sexual behavior impacts immune and endocrine function with a focus on helping survivors of sexual trauma and discrimination through basic science and clinical research. This research uses cutting-edge methods from multiple fields, including hormones and immune markers, psychophysiological measures, clinical trials, surveys and interviews.

**External Funding:**

Active: \$ 162,589

Proposals Pending: \$ 952,557

Funding Sources: NIH, Associations/Foundations

**Investigator:** Seulki Kim, Ph.D.

**Position Title & Department:** Assistant Professor, Department of Sociology

**Expertise:** Dr. Kim's research addresses the contributions of social and cultural resources to the unequal distribution of health outcomes. To address such pressing questions in health disparities, quantitative tools, like such as Geographic Information Systems (GIS), that quantify geographically referenced information are employed. Current projects include a study of how social and cultural capital at the county-level affects the rise in mortality rates from suicide, alcohol and opioids.

**External Funding:**

Active: \$0

Proposals Pending: \$221,877

Funding Sources: NIH

**Investigator:** Edward Deehan, Ph.D.

**Position Title & Department:** Assistant Professor, Department of Food Science and Technology

**Expertise:** The primary objective of Dr. Deehan's research is to improve health by altering the gut microbiome. Specific projects explore more reliable health and microbiome effects using mixtures of phenolic-rich fibers alone or in combination with other interventions. The work also aims to ameliorate gastrointestinal symptoms from such mixtures. This research informs the development and commercialization of fiber-based foods and therapeutics that promote health.

**External Funding:** No external funding active or pending currently.

## Research Program and Infrastructure Development

**Introduction:** In 2023-2024, a total of \$1,035,089 in NTSBRDF funds were invested in research programs and infrastructure development to support UNL faculty competitiveness for external funding for biomedical research. These investments leveraged \$27,194,106 in new external funding for biomedical research in 2023-2024. Areas of investment include the development and support of novel research programs with the potential to improve human health and enhance UNL infrastructure to conduct biomedical research. The projects are broadly focused on brain, biology, behavior and cognition; structural biology of large proteins to understand integrated biomolecular communication; high-performance computing to support intensive computing projects by engineers and scientists; immunology, virology and better vaccine development; novel targets for aging, inflammation and oncology; basic and applied inquiry into characterizing, understanding and treating substance use disorder and other behavioral and mental health issues. Some projects are collaborations with investigators at other NU System institutions, confirming UNL's commitment to leverage human and other Nebraska resources in conducting innovative biomedical research that requires highly skilled interdisciplinary teams.

**Project Title:** Center for Brain, Biology and Behavior Neuroimaging and Salivary Bioscience Research

**Principal Investigator:** Cary Savage, Ph.D.

**Description:** The Center for Brain, Biology and Behavior (CB3) is an interdisciplinary research center that investigates the social, behavioral, neural and environmental factors related to human performance, developmental trajectories and behavioral and mental health outcomes. Investments are supporting Center leadership to carry out further research in these areas with the goal of increasing competitiveness for extramural federal funding.

**Project Title:** Holland Computing Center – Super Computing Facilities

**Principal Investigator:** Hongfeng Yu, Ph.D.

**Description:** The Holland Computing Center houses the fastest computing core in Nebraska and serves the entire University of Nebraska System. This facility is used by engineers and scientists to explore computing-intensive questions on topics such as artificial intelligence, subatomic physics, immune-related issues, obesity and associated health issues and nano-chemistry. In service of these functions, investments were made in Center leadership to enhance computing and associated supports.

**Project Title:** The Role of the Bacterial Microbiome in Ocular Surface Squamous Neoplasia

**Principal Investigator:** Peter Angeletti, Ph.D.

**Description:** To date, no study has characterized the ocular bacterial microbiome of ocular surface squamous neoplasia (OSSN) Tumors. Dr. Angeletti's research will fill this critical scientific gap by assessing the ocular bacterial microbiome with respect to tumor severity, tumor-virus coinfection and HIV status. The work will use cutting edge visualization approaches to analyze a large sample of OSSN tumors from HIV+ and HIV- patients from Zambia, spanning a range of cytology tumor size. Outcomes will support the submission of competitive extramural grants.

**Project Title:** Developing Neurobiology-based Tools to Improve Treatment Decisions for Methamphetamine Addiction

**Principal Investigator:** Nick Hubbard, Ph.D.

**Description:** Dr. Hubbard's research focuses on developing neural-based tools to improve treatment decisions for

methamphetamine use disorder – a critical health issue in Nebraska and across the nation. To this end, the project will employ convergent cutting-edge techniques in brain imaging, cognitive function and decision making to study individuals with methamphetamine use disorder. The work supported here is the first ever to do so and bears immense promise for opening new horizons for precision treatment planning in addiction. Findings from this work will support competitive applications to the NIH.

**Project Title:** Mitochondrial Signaling During CMV Infection in Monocytes

**Principal Investigator:** Lindsey Crawford, Ph.D.

**Description:** Much of the world's population is infected with human cytomegalovirus (CMV), and once infected, an individual will have the virus for life. The infection is often unknown until a challenge to the immune system occurs (e.g., HIV, organ transplant, pregnancy, etc.), after which the virus can cause severe illness and death. Research by Dr. Crawford and colleagues will determine how CMV regulates certain proteins along with its influence on mitochondrial function, cellular signaling and neurotransmitter transport. This project leverages distinct expertise in mitochondrial biochemistry and CMV infection to develop insights into host-microbe interactions using advanced in vitro models and nanoparticle detection.

**Project Title:** Epithelial Pathogenesis from Viral Remodeling in 3D Bio-fabricated Skin Organs

**Principal Investigator:** Lindsey Crawford, Ph.D.

**Description:** Humans are constantly exposed to viruses, and chronic viral infections are widespread, yet the field lacks an understanding of the long-term effects of these infections in complex conditions such as cancer. Dr. Crawford and colleagues will use an integrated approach to assess cell-cell communication and immune signaling during infection using a novel 3D bio-fabricated skin model system. This work will begin to elucidate the molecular signaling convergence of key therapeutic targets for chronic viral infection, cancer and autoimmunity.

**Project Title:** Palmitoleate Prevents Inflammation, Endoplasmic Reticulum (ER) Stress and Apoptosis with Flavivirus Infection

**Principal Investigator:** Sathish Natarajan, Ph.D.

**Description:** Zika (ZIKV) and West Nile (WNV) viruses contribute to 770 million deaths worldwide. ZIKV infection in utero may lead to microcephaly, retinal damage and other congenital defects. WNV infections can result in severe brain inflammation, including encephalitis and meningitis. There is a critical need for novel therapeutic targets, given the lack of vaccines or antiviral medications to treat these infections. The research by Dr. Natarajan and colleagues will work toward establishing dietary palmitoleate (found in macadamia nuts) as a potential safe, affordable and non-invasive nutrient therapy to treat ZIKV or WNV-infected patients.

**Project Title:** Adipocyte Mechanical Load Adaptation and Metabolic Regulation

**Principal Investigator:** Jung Yul Lim, Ph.D.

**Description:** Dr. Lim's program of research aims to better elucidate cellular sensing and response to biomaterial substrate micro/nanopatterns and mechanical loading cues (e.g., stretch, flow shear stress). To this end, ongoing studies investigate the regulatory role of focal adhesion, cytoskeleton, cytoskeleton-nucleus linkage, cell-cell junction and associated mechano-sensing effectors in cell-biomaterial interaction and cell mechano-transduction. Advanced understanding of cell adaptation to mechano-physical milieu for adipocytes and cancer cells will provide high impact mechanistic data informing cancer metastasis and regenerative medicine.

**Project Title:** Predicting the Failure to Develop a More Positive Valence Bias: A Cognitive and Network Neuroscience Approach

**Principal Investigator:** Maital Neta, Ph.D.

**Description:** Using innovative approaches from social and cognitive neuroscience, Dr. Neta's research program examines the functional and dysfunctional processes related to interpreting ambiguous facial expressions over the life span (ages 6-90 years in current studies). This project enables continuation of work to follow participants over time to better understand the longitudinal trajectories that are associated with psychological well-being (e.g., risk for developing internalizing disorders and Alzheimer's/related dementia) and healthy aging. In children, the work assesses parents and the family context; for the aging, it studies caregivers. This work will be leveraged to support competitive grant applications to NIH and NSF.

**Project Title:** Predicting the Onset of Depression in a Group of Adolescents with a Family History of Depression

**Principal Investigator:** Nick Hubbard, Ph.D.

**Description:** Depression is on the rise across Nebraska and the nation. It is a critical health issue that is comorbid with many other health issues (e.g., smoking, drug use, obesity, etc.). This line of scientific inquiry by Dr. Hubbard and his team focuses on predicting the onset of depression in adolescents. To do so, they are studying a population of individuals who are uniquely at high risk for developing depressive symptoms – those with a family history of depression. Detection of the potential onset of depression before it can even manifest itself has important prevention and intervention implications.

**Project Title:** Chemical Approaches to Interrogate Neuropeptide and Peptide Hormone Signaling in Disease

**Principal Investigator:** James Checco, Ph.D.

**Description:** Peptides act as messengers to facilitate communication between cells in the brain and endocrine system. Because many human diseases are caused by a dysregulation of cellular communication, it is critical for human health to understand and selectively modulate these communication pathways. Dr. Checco's work is supported by the purchase of a Bruker Autoflex maX LRF matrix-assisted laser desorption/ionization-time-of-flight (MALDI-TOF) mass spectrometer. This analyzer combination has the advantage of being extremely fast, with the ability to interrogate a sample multiple times per second. Use of this instrument enables analysis of many samples in a very short period, which is important for much of the work performed by Dr. Checco, as well as other investigators at UNL and UNMC.

**Project Title:** Faculty Development in Biomedical Sciences

**Description:** This program provides needed support to allow the university to host faculty workshops related to external funding. These workshops are led by nationally recognized leaders that include grant-writing consultants. The objective of this program is to further enhance UNL's competitiveness for federal funding.

**Project Title:** Nebraska Center for Virology

**Principal Investigator:** Eric Weaver, Ph.D.

**Description:** This project provides support for the director of the Nebraska Center for Virology. The director leads activities to build interdisciplinary research teams, enhance research collaborations and augment competitiveness of Nebraska Center for Virology faculty for extramural funding from federal agencies. Basic and applied research focuses on health-related viruses in humans, other animals, including livestock, and plants.

**Project Title:** Re-imagining Place: Rural Substance Use Disorder, Worldbuilding and Community Participatory Design

**Principal Investigator:** Ash Smith, Ph.D.

**Description:** Dr. Smith is an artist researcher who uses storytelling, worldbuilding and speculative design to shape new realities. With performance as both an object and lens, this approach works across art and science, between fact and fiction, and with human and non-human agents to re-imagine past and future technologies, systems and rural-urban ecologies. Specifically, this project uses these approaches and technologies to understand and begin to develop intervention strategies for people who use drugs. Such strategies are unique and will attract the attention of addiction scientists and funders.

**Project Title:** Binding Structural Studies of Entry Inhibitors Targeting the Endosomal Receptor (NPC1) Binding Site of Ebola Virus

**Principal Investigator:** Shi-Hua Xiang, Ph.D.

**Description:** Dr. Xiang's research focuses on antivirals, utilizing cutting-edge technologies to develop effective countermeasures for fighting against human or animal viral infectious diseases. This project employs structure-based drug design for a promising drug binding site on the Ebola virus – NPC1. This approach uses molecular modeling, docking, in silico screening and structure-based design to design entry inhibitors. Ultimately, these tools increase the clinical effect and reduce the side effects of potential therapeutics.

## Minority Health Research Grants

**Introduction:** A total of \$820,944 was invested in projects to address the health needs of underserved minorities in Nebraska and the Great Plains and across the U.S. These projects support research conducted by the Minority Health Disparities Initiative and the to-be-established Sexual Violence Prevention Center (SPVC). Through integrative community-based approaches, these projects advance scientific research, practice and training related to health issues experienced by underserved populations in Nebraska and the region. These efforts seek to identify, understand, reduce and eventually eliminate race- and ethnicity-based behavioral health disparities in Nebraska and throughout the U.S.

**Project Title:** Establishment and Evaluation of an Indigenous-led Center to Prevent Sexual Violence among Indigenous Youth across the U.S.

**Principal Investigator:** Katie Edwards, Ph.D.

**Description:** The ultimate objective of this project is to eradicate sexual violence among and against Native Americans. To this end, this project will establish a Sexual Violence Prevention Center (SPVC). Specific objectives of the project include: 1) Establish the SVPC and implement IMpower (i.e., a validated sexual violence prevention program) on the Pine Ridge Indian Reservation. 2) Document the establishment of the center and program implementation via a participatory youth-led documentary that highlights the strengths and resilience of Native peoples. 3) Culturally adapt and regionally implement IMpower on two other Indian reservations and in three urban areas. 4) Conduct a rigorous, mixed methodological outcome and process evaluation of the initiative to document impact. 5) Disseminate project findings to diverse audiences, including researchers, practitioners and policymakers, as well as facilitate national trainings and webinars. 6) Secure diverse funding sources to sustain and expand the SVPC.

**Project Title:** Minority Health Disparities Initiative

**Principal Investigators:** Rick Bevins, Ph.D., and Arthur (Trey) Andrews III, Ph.D.

**Description:** The Minority Health Disparities Initiative (MHDI) sponsors several important mission-specific functions and services. These include visiting speakers (selected and hosted by faculty affiliates); a conversation series led by faculty affiliates and community members; an annual conference that includes the Nebraska DHHS Office of Health Disparities and Health Equity, aligned community non-profit organizations and health practitioners from across the state; work with a community board on strategic planning; and a summer National Science Foundation-funded Research Experiences for Undergraduates program (research mentored by affiliated MHDI faculty). Additional support includes community outreach and project evaluation by MHDI-affiliated faculty, as well as assistance in preparing and submitting extramural grant proposals.

## Joint Research Projects

**Introduction:** UNL and UNMC faculty often offer complementary research expertise to address biomedical problems that cannot be solved alone by individual investigators from either institution. To facilitate team building and preliminary data acquisition across the two institutions, a total of \$100,500 in NTSBRDF funds were used to support four projects from teams that includes UNL and other NU System researchers.

**Project Title:** Real-World Assessment of Knee Function after Injury

**Principal Investigator:** Elizabeth Wellsandt, Ph.D., UNMC, and Eric Markvicka, Ph.D., UNL

**Description:** Proper recovery of knee performance following an injury is associated with fewer reoccurring injuries and lower risk for developing early knee arthritis. Current means of assessment of recovery require expensive equipment that is not readily accessible. In this project, the team of investigators aims to develop a wearable knee device to measure knee performance in real-world sport settings. Use of this device will help clinicians better determine when a patient is ready to return to activity, as well as improve outcomes following recovery.

**Project Title:** Use of Omega-3 Fatty Acids to Inhibit Drug-Induced Inflammation and Synaptic Alterations

**Principal Investigator:** Jana Ponce, Ph.D., UNMC

**Description:** Repeated exposure to methamphetamine induces a chronic inflammatory state and synaptic alterations associated with behavioral deficits and neurodegenerative diseases. Unfortunately, there are no effective pharmacological treatments. Dr. Ponce's study will examine how omega (n)-3 fatty acids impact behavioral deficits through resolution of inflammation and synaptic alterations in an animal model of meth use

disorder. The long-term goal of this research is to identify novel mechanisms associated with neuroinflammation and associated behavior change. These could provide targets for non-invasive, non-addictive and low-cost therapeutic intervention strategies for meth use disorder.

**Project Title:** The Serotonin 5-HT<sub>2A</sub> Receptor, a Novel Non-Opioid Target for Opioid Use Disorder

**Principal Investigator:** Erik Garcia, Ph.D., UNO

**Description:** In this project, Dr. Garcia seeks to uncover a non-opioid target for opioid use disorder that is unaffected by chronic administration of oxycodone and able to reduce the reinforcing value of oxycodone. Such a therapeutic target with these characteristics would decrease the misuse potential of prescription opioids. Research will determine the functional status of the 5-HT<sub>2A</sub> (serotonin-2A) receptor following oxycodone exposure and evaluate its role in reinforcing the effects of oxycodone in a preclinical animal model. This work will set the critical foundation for a competitive NIH grant.

**Project Title:** Biological Mechanisms that Connect Nursing with Enhanced Testicular Function

**Principal Investigator:** Amy Desaulniers, Ph.D., UNL

**Description:** This project will support Dr. Desaulniers' efforts as a reproductive physiologist specializing in testis biology and endocrinology. Her expertise will be leveraged to examine the processes mediating the interaction between nursing history and improved testicular function. The long-term goal of this program of research is to improve the fertility of agricultural animals to promote sustainable livestock production. Such work also has clear implications for reproduction and fertility in humans.

**University of Nebraska-Lincoln**  
**Nebraska Tobacco Settlement Biomedical Research Development Fund**  
**FY 2023-2024 Allocation**

<b>Strategic Faculty Recruitment and Retention</b>	<b>Allocation</b>
Aron Barbey, Ph.D., Psychology and the Center for Brain, Biology and Behavior	431,661
Tatsuya Yamada, Ph.D., Nutrition & Health Sciences	218,333
Tierney Lorenz, Ph.D., Psychology and the Center for Brain, Biology and Behavior	72,728
Seulke Kim, Ph.D., Sociology	35,970
Edward Deehan, Ph.D., Food Science and Technology and the Nebraska Food for Health Center	27,885
<b>Subtotal</b>	<b>\$ 786,577</b>
<b>Research Program and Infrastructure Development</b>	
Center for Brain, Biology and Behavior - Aron Barbey, Ph.D.	362,000
Holland Computing Center - Hongfeng Yu, Ph.D.	111,476
The Role of the Bacterial Microbiome in Ocular Surface Squamous Neoplasia, Peter Angeletti, Ph.D.	66,690
Developing Neurobiology-based Tools to Improve Treatment Decisions for Methamphetamine Addiction, Nick Hubbard, Ph.D.	65,000
Mitochondrial Signaling During CMV Infection in Monocytes, Lindsey Crawford, Ph.D.	63,972
Epithelial Pathogenesis from Viral Remodeling in 3D-biofabricated Skin Organs, Lindsey Crawford, Ph.D.	58,218
Palmitoleate Prevents Inflammation, Endoplasmic Reticulum (ER) Stress and Apoptosis with Flavivirus Infection, Sathish Natarajan, Ph.D.	50,000
Adipocyte Mechanical Load Adaptation and Metabolic Regulation, Jung Yul Lim, Ph.D.	50,000
Predicting the failure to develop a more positive valence bias: A cognitive and network neuroscience approach, Maital Neta, Ph.D.	43,000
Predicting the Onset of Depression in a Group of Adolescents with a Family History of Depression, Nick Hubbard, Ph.D.	32,610
Chemical Approaches to Interrogate Neuropeptide and Peptide Hormone Signaling in Disease, James Checco, Ph.D.	32,124
Faculty Development in Biomedical Sciences	25,000
Nebraska Center for Virology Director Stipend - Eric Weaver, Ph.D.	25,000
Re-imagining Place: Rural Substance Use Disorder, Worldbuilding and Community Participatory Design, Ash Smith, Ph.D.	25,000
Binding Structural Studies of Entry Inhibitors Targeting the Endosomal Receptor (NPC1) Binding Site of Ebola Virus, Shi-Hua Xiang, Ph.D.	25,000
<b>Subtotal</b>	<b>\$ 1,035,089</b>
<b>Minority Health Research Grants</b>	
Establishment and Evaluation of an Indigenous-led Center to Prevent Sexual Violence among Indigenous Youth across the U.S. - Katie Edwards, Ph.D.	621,585
Minority Health Disparities Initiative, Rick Bevins, Ph.D.	199,359
<b>Subtotal</b>	<b>\$ 820,944</b>
<b>Joint UNL-UNMC Research Programs</b>	
Real-World Assessment of Knee Function After Injury, Elizabeth Wellsandt, Ph.D. UNMC & Eric Markvicka, Ph.D., UNL	50,000
Use of Omega-3 Fatty Acids to Inhibit Drug-Induced Inflammation and Synaptic Alterations, Jana Ponce, Ph.D. UNMC	25,000
The serotonin 5-HT2A receptor, a novel non-opioid target for opioid use disorder, Erik Garcia, Ph.D. UNO	25,000
Biological mechanisms that connect nursing with enhanced testicular function, Amy Desaulniers, Ph.D.	500
<b>Subtotal</b>	<b>\$ 100,500</b>
<b>Total FY 2023-2024 Allocation</b>	<b>\$ 2,743,110</b>







## Meet Allen Thomas, PhD

**Investment from tobacco settlement funding: \$51,332**

**Total portfolio through FY24: \$1.7 million**

**Return on investment: 32 to 1**

Allen Thomas, PhD, began at UNK in 2014, after 13 years at Array BioPharma. He earned his PhD from the Scripps Research Institute in the lab of two-time Nobel Prize Laureate Dr. Barry Sharpless. He received support from tobacco settlement dollars in the form of a program to enhance NIH grant-writing and submission from UNK biomedical researchers. In 2021, Dr. Thomas took part in a summer long grant-writing workshop with the goal of developing an R15 NIH grant submission.

UNK is a primarily undergraduate institution and, as such, the major responsibility of the faculty is to train undergraduates while carrying out high quality research. As is central to the mission of UNK, Dr. Thomas exemplifies the role of the teacher/scholar/mentor model by believing “learning matters” and “people matter.” This ideal is so engrained in Dr. Thomas that the topic for his R15 NIH grant submission was based on an idea from one of his undergraduate research students, Mackenzie Hagemester of Arlington, Nebraska. The project was to develop inhibitors of the key enzyme involved in making melatonin, serotonin N-acetyl-transferase (SNAT). By better understanding SNAT’s function, Dr. Thomas’s group is trying to develop a drug to treat seasonal affective disorder and other disorders in which melatonin levels are abnormally high. In 2022, Dr. Thomas received \$395,000 to study Mackenzie’s idea. This was only the second R15 NIH grant awarded to UNK, which paved the way for two other chemistry faculty, who also received tobacco settlement dollars, to earn R15 NIH funding.

“My participation in the grant writing workshop sponsored by tobacco funds made a huge impact on my ability to get funding of \$395K from the NIH for 2022-2025. It was during this workshop that I was able to refine my grantsmanship and then write a proposal that was funded after the first submission, which is a rare achievement. This NIH grant has enabled eight undergraduates to perform research with me and be able to publish their findings in impactful journals as well as present at regional and national chemistry conferences. One of my current students is applying to PhD programs in chemical biology because of working on this project. Another student went to UNMC after graduating from UNK and was in the top 10 of her medical school class. No doubt, her experiences in research contributed to her success as a medical student.”

**“My participation in the grant writing workshop sponsored by tobacco funds made a huge impact on my ability to get funding of \$395K from the NIH for 2022-2025.”**

*– Allen Thomas, PhD*

At UNK, Dr. Thomas is one of UNK’s research leaders. He is a Donald E. Fox Endowed Chair and Professor of Organic Chemistry with a history of research excellence in drug design to treat brain cancer, Alzheimer’s disease, and brain/mental health disorders. He embodies the role of teacher/scholar/mentor by training the future health science and biomedical workforce.

# UNIVERSITY OF NEBRASKA AT KEARNEY

## Nebraska Tobacco Settlement Biomedical Research Fund (NTSBRDF)

Year 23: July 1, 2023 – June 30, 2024  
Progress Report

### Executive Summary

UNK's use of the NTSBRDF program for the 2023-2024 FY was to partially fund startup costs for two new Biology Department faculty members and to provide research seed funding for a Psychology faculty member. A total of \$39,281.60 was allocated toward Strategic Faculty Recruitment and Retention, while an additional \$65,557.33 was allocated to Research Program and Infrastructure Development. About \$25k in funding was encumbered in the prior fiscal year and was used to finalize the biomedical grant writing workshop that was conducted in the summer of 2023 which was primarily funded in the prior year's allocation.

#### Research Program and Infrastructure Development

Funds totaling \$3,165.62 were used in support of the INSpRE instrumentation core at UNK. Another \$32k of funding in this category supported by almost \$25k in encumbered funds from the prior year were allocated to complete the biomedical grant-writing workshop conducted in summer 2023. The remaining \$30k was used to purchase activity monitors to support the initial research of Nick Lamoureux which focuses on using exercise to prevent functional decline and enable healthy aging and are well aligned with the National Institute on Aging and National Institute of Arthritis and Musculoskeletal and Skin Diseases department priorities.

#### Strategic Faculty Recruitment and Retention

Two faculty members, including one new hire received funding either to support research start-up costs or as seed funding to obtain preliminary data for future grant requests. Those receiving support are summarized below.

Name	Department & Expertise	Title/Description
Emily Bartholomay, PhD	Psychology, New Faculty  Expertise: Clinical health psychology: anxiety, depression, personality, attention, surgical outcomes, assessment, repetitive negative thinking, psychometrics	Seed Funding for project "The role of sleep in the etiology of college student mental health problems", \$8,947.00  Potential Funding Sources: NIH
HaiWei Lu, PhD	Biology, New Faculty  Expertise: Plant Biology	Research Start-up, \$30,334.60  Funding Sources: American Society of Plant Biologists, NIH INBRE (applied)
Nick Lamoureux, PhD	Kinesiology & Sports Sciences  Expertise: Assessment and promotion of physical activity, particularly among older adults to enable and support processes of healthy aging and independence.	Equipment Funding: \$29,737.00  Funding Sources: CDC through Iowa State University subcontract

**University of Nebraska at Kearney**  
 Nebraska Tobacco Settlement Biomedical Research Development Fund  
 FY 2023-2024 Allocation

**Strategic Faculty Recruitment and Retention**

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Haiwei Lu, PhD, Biology	\$30,334.60
Emily Bartholomay, PhD, Psychology	\$8,947.00
<b>Subtotal</b>	<b>\$39,281.60</b>

**Research program and infrastructure development**

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Activity Monitors for motion research, Nick Lamoureux	\$29,737.00
INSpRE Core Support	\$3,165.62
Biomedical Research Grant Writing Workshop (Finalizing from FY23)	\$32,654.71
<b>Subtotal</b>	<b>\$65,557.33</b>

**TOTAL EXPENDED**

**\$104,838.93**

Unallocated Rollover to FY 25	\$306.20
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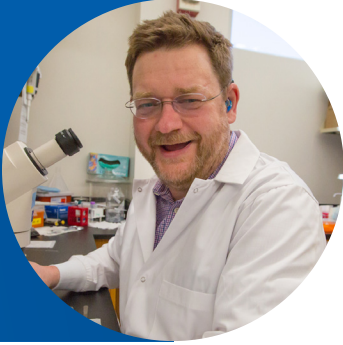
**TOTAL FY 24 Allocation**

**\$80,168.00**

Carryforward funds from FY23 Grant Writing Workshop	\$24,977.13
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**Total FY 24 Available Funds** **\$105,145.13**





## Meet Peter Steyger, PhD

**Investment from tobacco settlement funding: \$765,645**

**Current portfolio through FY24: \$17.3 million**

**Return on investment: 23 to 1**

Peter Steyger, PhD, was recruited to Creighton in 2019, after 22 years at Oregon Health & Science University in Portland, Oregon. He received an initial investment package that included \$765,645 in tobacco settlement dollars to study hearing loss and serve as a professor of biomedical sciences in the School of Medicine.

He also is the inaugural director of the Bellucci Translational Hearing Center that is partially funded by a National Institutes of Health Center of Biomedical Research Excellence award that he wrote, totaling \$11.7 million, the largest NIH grant received at Creighton. This award supported the recruitment of six to 10 faculty and staff, with additional support for research technicians and postdoctoral fellows. Dr. Steyger's research portfolio as principal investigator is now valued at \$17.3 million; his impact is greater when considering funding he has secured as a co-PI and consultant. This growth in research dollars, programs and capacity was made possible by tobacco settlement funds.

The Bellucci Center operates on a unique collaborative model, bringing together top faculty and undergraduate, graduate, doctoral and post-doctoral trainees from different disciplines and institutions alongside cutting-edge facilities. Its mission is twofold: to address the complex challenge of preserving or restoring hearing and to train the next generation of hearing researchers. Projects in the Bellucci Translational Hearing Center

focus on drug development and research to regenerate the sensory cochlear hair cells that, when lost, lead to hearing loss. The center's partnership with the Boys Town National Research Center and the University of Nebraska Medical Center boosts the speed and reach of the Center's research significantly by focusing on gene therapy, central auditory pathway disease analysis and clinical applications.

Dr. Steyger's connection to his research is deeply personal. At just 14 months old, he survived bacterial meningitis thanks to aminoglycoside antibiotics – but at the cost of his hearing. Today, his work focuses on developing interventions that enable clinicians to use these life-saving antibiotics – which are still prescribed to 100,000 people annually – without the risk of hearing loss and deafness.

In addition to leading the Bellucci Center, he serves as the principal investigator on an NIH R25 training grant to enhance graduate student training in auditory and vestibular neurosciences, particular for those who have hearing loss to engage in research closely tied to their own experiences. At front of his mind in all his research, Dr. Steyger says, is the real-world impact hearing loss has on people's lives, the untold amounts of energy they have to expend every day to participate in the broader world. This reality informs every datum collected and discovery made by his work.

# CREIGHTON UNIVERSITY

## Nebraska Tobacco Settlement Biomedical Research Fund (NTSBRDF)

Year 23: July 1, 2023 – June 30, 2024  
Progress Report

### Executive Summary

The Creighton University investment of the Nebraska Tobacco Settlement Biomedical Research Development Fund dollars is concentrated in three areas:

- Strategic Faculty Recruitment and Retention
- Research Program and Infrastructure Development
- Minority Health & Health Disparities Research Programs

With the support of the NTSBRDF, Creighton University continues to address some of the world's most complex and perplexing healthcare challenges. Research investigators play a fundamental role in enhancing the quality of life for individuals and in expanding the research community in Nebraska and the region. The primary purpose and use of the NTSBRDF program at Creighton University is to increase funding from federal health agencies and institutes. In 2023-2024, the collective efforts of the research investigators at Creighton University produced significant results. Creighton University received \$31.4 million in extramural research awards and sponsored projects. Investigators were awarded federal grants from the Department of Defense, the National Institutes of Health, the U.S. Department of Education and the Health Resources and Services Administration, as well as many other non-federal grants from corporations and foundations. The university and its investigators look forward to continuing to use NTSBRDF funds as a springboard to benefit the citizens of Nebraska and to add to research and healthcare knowledge everywhere.

## Strategic Faculty Recruitment and Retention

A total of \$756,338 was invested in strategic recruitment and retention of faculty at Creighton University. The NTSBRDF provided us the opportunity to expand on existing centers of excellence and develop new avenues of biomedical research. The new faculty have already contributed to the Creighton University research portfolio by obtaining new extramural awards totaling \$2,487,845 during this reporting period. These new awards are from agencies such as the National Institutes of Health, the Department of Defense, and the Hearing Health Foundation.

**Investigator:** Sudhanva Kashyap, PhD

**Position Title & Department:** Assistant Professor, School of Medicine, Department of Medical Microbiology & Immunology

**External Funding:**

Current Year Funding Total: \$465,468

Funding Sources: NE-DHHS, NIH

**Investigator:** Justine Renauld, PhD

**Position Title & Department:** Assistant Professor, School of Medicine, Department of Biomedical Sciences

**External Funding:**

Current Year Funding Total: \$458,736

Funding Sources: NE-DHHS, NIH

**Investigator:** Marisa Zallocchi, PhD

**Position Title & Department:** Assistant Professor, School of Medicine, Department of Biomedical Sciences

**External Funding:**

Current Year Funding Total: \$739,281

Funding Sources: NE-DHHS, NIH, DOD

**Investigator:** Litao Tao, PhD

**Position Title & Department:** Assistant Professor, School of Medicine, Department of Biomedical Sciences

**External Funding:**

Current Year Funding Total: \$821,875

Funding Sources: NE-DHHS, NIH, American Hearing Research Foundation, Hearing Health Foundation

**Investigator:** Claudia Gagnoli, MD, PhD

**Position Title & Department:** Professor, School of Medicine, Department of Medicine

**External Funding:**

Current Year Funding Total: \$140,000

Funding Sources: NE-DHHS

**Investigator:** Xia, Jun, PhD

**Position Title & Department:** Assistant Professor, School of Medicine, Department of Biomedical Sciences

**External Funding:**

Current Year Funding Total: \$439,700

Funding Sources: NE-DHHS, NIH, Kicks for a Cure, Inc.

**Investigator:** Kelley Hammond, PhD

**Position Title & Department:** Assistant Professor, College of Arts & Sciences, Department of Exercise Science & Pre-Health Professions

**External Funding:**

Current Year Funding Total: \$91,029

Funding Sources: NE-DHHS

**Investigator:** Mitch Magrini, PhD

**Position Title & Department:** Assistant Professor, College of Arts & Sciences, Department of Exercise Science & Pre-Health Professions

**External Funding:**

Current Year Funding Total: \$88,094

Funding Sources: NE-DHHS



## Research Program and Infrastructure Development

A total of \$1,506,547 was invested in research program and infrastructure development in 2023-2024 in a wide variety of topics, including 1) Epigenetic Regulation of Neuroinflammation in Global Cerebral Ischemia, 2) Improving the Cardiac Transplant Window: Treatments Derived from Hibernators, 3) The Role of Oxidative Stress in Cognitive Impairment Associated with Epilepsy and 4) KMT5B Regulation of the IGF Neurotrophic Axis. Moreover, the Research Program and Infrastructure Development portion of the NTSBRDF supported biomedical research by providing laboratory and core facility equipment and technical personnel as well as funding for the University's research compliance infrastructure.

**Investigator:** Jason Bartz, PhD

**Position Title & Department:** Associate Dean for Faculty Affairs & Chair & Professor, School of Medicine, Department of Medical Microbiology, and Immunology

**Project Title:** School of Medicine Associate Dean Research Lab Personnel Support

**External Funding:**

Current Year Funding Total: \$1,173,079

Funding Sources: NE-DHHS, NIH, State of Michigan, Nebraska Game & Parks Commission, and the Minnesota Environmental and Natural Resources Trust Fund

**Investigator:** Laura Hansen, PhD

**Position Title & Department:** Associate Dean for Research and Professor, School of Medicine, Department of Biomedical Sciences

**Project Title:** School of Medicine Associate Dean Research Lab Personnel Support

**External Funding:**

Current Year Funding Total: \$745,902

Funding Sources: NE-DHHS, NIH

**Investigator:** Julie Strauss-Soukup, PhD

**Position Title & Department:** Associate Vice Provost for Research & Scholarship & Professor, College of Arts & Sciences, Department of Chemistry & Biochemistry

**Project Title:** Associate Vice Provost Research Lab Personnel Support

**External Funding:**

Current Year Funding Total: \$1,243,015

Funding Sources: NE-DHHS, NIH

**Investigator:** Joseph Knezetic, PhD

**Position Title & Department:** Director, Research Compliance & Professor, School of Medicine, Department of Pathology

**Project Title:** Research Compliance Regulatory Support

**External Funding:**

Current Year Funding Total: \$665,908

Funding Sources: NE-DHHS

**Investigator:** Michael Nichols, PhD

**Position Title & Department:** Professor, College of Arts & Sciences, Department of Physics

**Project Title:** IBIF Confocal Core Facility Manager Support

**External Funding:**

Current Year Funding Total: \$284,111

Funding Sources: NE-DHHS, NIH

**Investigator:** Rebecca Wymer

**Position Title & Department:** Head Librarian, University Libraries

**Project Title:** Biomedical Journal Support

**External Funding:**

Current Year Funding Total: \$50,000

Funding Sources: NE-DHHS

**Investigator:** Julie Strauss-Soukup, PhD

**Position Title & Department:** Associate Vice Provost for Research & Scholarship & Professor, College of Arts & Sciences, Department of Chemistry & Biochemistry

**Project Title:** New Initiative Program Grant Reviewers

**External Funding:**

Current Year Funding Total: \$1,243,015

Funding Sources: NE-DHHS, NIH

**Investigator:** Julie Strauss-Soukup, PhD

**Position Title & Department:** Associate Vice Provost for Research & Scholarship & Professor, College of Arts & Sciences, Department of Chemistry & Biochemistry

**Project Title:** Write Winning Grant Proposals Seminar

**External Funding:**

Current Year Funding Total: \$1,243,015

Funding Sources: NE-DHHS, NIH

**Investigator:** Sonia Sanchez, PhD

**Position Title & Department:** Associate Dean for Research and Professor, School of Dentistry, Department of Oral Biology

**Project Title:** Research Mentoring Workshop

**External Funding:**

Current Year Funding Total: \$501,500

Funding Sources: NE-DHHS, United HealthCare Services, Inc., Iowa Dental Association

**Investigator:** Julie Strauss-Soukup, PhD

**Position Title & Department:** Associate Vice Provost for Research & Scholarship & Professor, College of Arts & Sciences, Department of Chemistry & Biochemistry

**Project Title:** National Institute of Antimicrobial Resistance Research and Education Institutional Membership

**External Funding:**

Current Year Funding Total: \$1,243,015

Funding Sources: NE-DHHS, NIH

**Investigator:** Peter Steyger, PhD

**Position Title & Department:** Professor and Director Translational Hearing Center, School of Medicine, Department of Pharmacology & Neuroscience

**Project Title:** Translational Hearing Center COBRE Matching Support

**External Funding:**

Current Year Funding Total: \$4,288,055

Funding Sources: NE-DHHS, NIH, Health Science Strategic Investment Fund, Center for Undergraduate Research and Scholarship

**Investigator:** Jonathan Wrubel, PhD

**Position Title & Department:** Associate Professor, College of Arts & Sciences, Department of Physics

**Project Title:** National Science Foundation Award Matching Funds

**External Funding:**

Current Year Funding Total: \$267,685

Funding Sources: NE-DHHS, NSF

**Investigator:** Peter Steyger, PhD

**Position Title & Department:** Professor and Director Translational Hearing Center, School of Medicine, Department of Pharmacology & Neuroscience

**Project Title:** Bridge Funding

**External Funding:**

Current Year Funding Total: \$4,288,055

Funding Sources: NE-DHHS, NIH, Health Science Strategic Investment Fund, Center for Undergraduate Research and Scholarship

**Investigator:** Eric Bredahl, PhD

**Position Title & Department:** Associate Professor, College of Arts & Sciences, Department of Exercise Science & Pre-Health Professions

**Project Title:** Improving the Cardiac Transplant Window: Treatments Derived from Hibernators

**External Funding:**

Current Year Funding Total: \$75,000

Funding Sources: NE-DHHS

**Investigator:** Timothy Simeone Tu, PhD

**Position Title & Department:** Professor, School of Medicine, Department of Pharmacology & Neuroscience

**Project Title:** The Role of Oxidative Stress in Cognitive Impairment Associated with Epilepsy

**External Funding:**

Current Year Funding Total: \$422,896

Funding Sources: NE-DHHS, NIH

**Investigator:** Holly Stessman, PhD

**Position Title & Department:** Associate Professor, School of Medicine, Department of Pharmacology & Neuroscience

**Project Title:** KMT5B Regulation of the IGF Neurotrophic Axis

**External Funding:**

Current Year Funding Total: \$461,396

Funding Sources: NE-DHHS, NIH, Haddix President's Faculty Research Grant

**Investigator:** Jee Yeon Hwang, PhD

**Position Title & Department:** Assistant Professor, School of Medicine, Department of Pharmacology & Neurosciences

**Project Title:** Epigenetic Regulation of Neuroinflammation in Global Cerebral Ischemia

**External Funding:**

Current Year Funding Total: \$394,000

Funding Sources: NE-DHHS, NIH, Health Science Strategic Investment Fund

## Minority Health Research Grants

**Introduction:** Creighton's core values include the inalienable worth of each individual and appreciation of ethnic and cultural diversity coupled with service to others. As such, it continues to support Creighton University's Center for Promoting Health and Health Equality and its commitment to improving the health of racial and ethnic minorities. A total of \$173,515 was awarded in 2023-2024 for minority health research.

**Investigator:** Sade Kosoko-Lasaki, MD

**Position Title & Department:** Associate Vice Provost – Health Science Multicultural and Community Affairs & Professor, School of Medicine, Department of Surgery

**Expertise:** Center for Promoting Health and Health Equality (CPHHE)

**External Funding:**

Current Year Funding Total: \$1,271,891

Funding Sources: NE-DHHS, CDC

**Creighton University**  
**Nebraska Tobacco Settlement Biomedical Research Development Fund**  
**Allocation for Period July 1, 2023 - June 30, 2024**

<b>Strategic Faculty Recruitment and Retention:</b>		<b>Allocation</b>
Kashyap, Sudhanva	School of Medicine New Faculty Start-up	51,323.96
Renauld, Justine	School of Medicine New Faculty Start-up	104,798.26
Zallocchi, Marisa	School of Medicine New Faculty Start-up	65,478.78
Tao, Litao	School of Medicine New Faculty Start-up	67,008.76
Gragnoli, Claudia	School of Medicine New Faculty Start-up	140,000.00
Xia, Jun	School of Medicine New Faculty Start-up	153,479.05
Hammond, Kelley	College of Arts & Sciences Exercise Science New Faculty Start-up	88,600.40
Magrini, Mitch	College of Arts & Sciences Exercise Science New Faculty Start-up	85,648.37
		<b>756,337.58</b>
<b>Research Program and Infrastructure Development:</b>		
Bartz, Jason	School of Medicine Assoc Dean Research Lab Personnel Support	81,697.86
Hansen, Laura	School of Medicine Assoc Dean Research Lab Personnel Support	113,909.30
Srauss-Soukup, Julie	Associate Vice Provost Research Lab Personnel Support	71,078.86
Knezetic, Joseph	Research Compliance Regulatory Support	665,907.97
Nichols, Mike	IBIF Confocal Core Facility Manager Support	9,412.68
Wymer Rebecca	Biomedical Journal Support	50,000.00
Strauss-Soukup, Julie	LB692 New Initiative Grant Competition Reviewers	7,500.00
Strauss-Soukup, Julie	Write Winning Grant Proposals Seminar	18,092.41
Sanchez, Sonia	Research Mentoring Workshop	865.30
Strauss-Soukup, Julie	National Institute of Antimicrobial Resistance Research & Education	2,500.00
Steyger, Peter	Translational Hearing Center COBRE Matching Support	101,866.43
Wrubel, Jonathan	National Science Foundation Grant Matching Funds	36,090.71
Steyger, Peter	Bridge Funds	132,948.97
Bredahl, Eric	Improving the Cardiac Transplant Window: Treatments Derived from	27,736.69
Simeone, Timothy	The Role of Oxidative Stress in Cognitive Impairment Associated with	36,940.04
Stessman, Holly	KMT5B Regulation of the IGF Neurotrophic Axis	75,000.00
Hwang, Jee Yeon	Epigenetic Regulation of Neuroinflammation in Global Cerebral Ischemia	75,000.00
		<b>1,506,547.22</b>
<b>Minority Health Research Grants</b>		
Kosoko-Lasaki, Sade	Center for Promoting Health and Health Equality	173,514.95
		<b>173,514.95</b>
<b>Allocation for Period July 1, 2023 - June 30, 2024</b>		<b>2,436,399.75</b>





## Meet Gabrielle Merchant, AuD, PhD

**Investment from tobacco settlement funding: \$604,000**

**Current portfolio through FY24: \$8.7 million**

**Return on investment: 13 to 1**

Gabrielle Merchant, AuD, PhD, came to Boys Town National Research Hospital (BTNRH) in 2018 after completing her PhD at Harvard and Massachusetts Institute of Technology and her Audiology Doctorate (AuD) at the University of Massachusetts Amherst.

Dr. Merchant is currently the director of the Translational Auditory Physiology and Perception Laboratory at BTNRH. Dr. Merchant combines her strong background in biomedical engineering with her clinical training in audiology to improve the tools that are available to improve the detection of ear infections and associated hearing loss in children.

Dr. Merchant received an initial startup investment from tobacco settlement funds of just over \$600,000 that allowed her to establish her laboratory. Since that time, Dr. Merchant has completed a Center of Biomedical Research Excellence (COBRE) award that provided strong feasibility for her diagnostic approach for improving the diagnosis of hearing loss. Her current federal funding portfolio is worth \$8.7 million, including two NIH-funded grants and one grant from the Department of Defense. Dr. Merchant has filed four patents related to this research since joining BTNRH.

In one of her NIH-funded projects, Dr. Merchant uses wideband acoustic immittance to noninvasively estimate the presence of fluid in the middle ear in children and to use those measures to predict the degree of hearing loss that may be related to the fluid.

This work will help improve outcomes for the millions of children who experience ear infections in the U.S. each year by helping audiologists and physicians to determine the appropriate care pathway to minimize hearing loss and associated developmental delays. Her other NIH-funded research project is a collaboration with the University of Colorado and Creighton University to improve the diagnosis of hearing loss in people with Down syndrome. People with Down syndrome experience frequent ear infections and associated hearing loss, and Dr. Merchant's research will help to improve the timeliness of hearing care that they receive.

Dr. Merchant's Department of Defense award aims to develop a hearing test probe that could be used outside of clinical settings, including on the battlefield, to improve the timeliness of the detection of hearing problems for soldiers who may experience hearing loss related to combat or military service. Dr. Merchant's work is translational in that all her work involves working with patient populations to improve outcomes and develop tools that can be used right now to help children and families across Nebraska.

Dr. Merchant received a 2024 Visionary Recognition from the American Speech Language Hearing Association and will receive the Early Career Researcher Award from the American Auditory Society in February 2025.

# BOYS TOWN NATIONAL RESEARCH HOSPITAL

## Nebraska Tobacco Settlement Biomedical Research Fund (NTSBRDF)

Year 23: July 1, 2023 – June 30, 2024

### Progress Report

## Summary Report of Services Provided

Annual reports have divided Development Fund activities into three categories: 1) Strategic Faculty Recruitment & Retention; 2) Research Program & Infrastructure Development; and 3) Minority Health Research Grants. We will continue to use those categories so that these periodic reports tie to the subsequent annual report. The allocation numbers are cumulative and rounded to the nearest dollar.

### Strategic Faculty Recruitment & Retention

**Introduction:** Entries in this category represent multiple-year start-up or retention packages for scientists. As they obtain external support and become fully independent, they move off the list making way for new investigators. We also support established laboratories to allow them to maintain active research programs and to obtain pilot data for future grant applications.

**Investigator:** Barbara Morley, PhD

**Position Title & Department:** Director of the Auditory Neurochemistry Laboratory, Center for Sensory Neuroscience.

**Expertise:** Dr. Morley studies the use of molecular methods to study the development of neurotransmitters in the auditory brainstem nuclei.

**Allocation:** \$28,017

**Description of Goals and Accomplishments:** Funds are being used to support collection of preliminary data for an NIH grant application by a long-term faculty member.

**Investigator:** Kristen Janky, PhD

**Position Title & Department:** Director of the Balance and Vestibular Research Laboratory, Center for Audiology

**Expertise:** Vestibular function and developmental outcomes in children and adults with hearing loss.

**Allocation:** \$4,350

**Description of Goals and Accomplishments:** These funds were designated for a pilot project for Dr. Janky to collect measures of balance function, hearing, cognition, and language to serve as preliminary data for an NIH grant application.

**Investigator:** Monita Chatterjee, PhD

**Position Title & Department:** Director of the Auditory Prosthesis and Perception Laboratory

**Expertise:** Auditory perception for children and adults who use cochlear implants.

**Allocation:** \$17,242

**Description of Goals and Accomplishments:** Funds are being used to supplement a pilot project for a new NIH grant proposal that would study voice-emotion recognition in listeners with cochlear implants.

**Investigator:** Lori Leibold, PhD

**Position Title & Department:** Director of the Human Auditory Development Laboratory

**Allocation:** \$3,317

**Description of Goals and Accomplishments:** Dr. Leibold is using these funds to support data collection using the Boys Town Research Vehicle to recruit children and families who have not previously been able to participate in our research studies from rural or underserved communities.

**Investigator:** Katherine Gordon, PhD

**Position Title & Department:** Director of the Language and Memory Laboratory, Center for Childhood Deafness, Learning and Language.

**Expertise:** Cognitive and linguistic mechanisms that support the process of word learning and language development in children who are typically developing.

**Allocation:** \$50,753

**Description of Goals and Accomplishments:** Dr. Gordon was recruited for the BTNRH Center for Biomedical Research Excellence (COBRE) grant program. Start-up package funds are being used to support collection of preliminary data for an NIH grant application.

**Investigator:** Kaylah Lalonde, PhD

**Position Title & Department:** Director of the Audiovisual Speech Processing Laboratory

**Expertise:** Multisensory speech perception for children and adults with hearing loss.

**Allocation:** \$32,611

**Description of Goals and Accomplishments:** Dr. Lalonde is an early-career scientist who is using these funds to support pilot data collection for a project to understand how people with hearing loss combine visual and auditory information to support communication.

**Investigator:** Hope S. Lancaster, PhD

**Position Title & Department:** Director of the Etiologies of Language and Literacy Laboratory

**Expertise:** Developmental language disorder, dyslexia, and language and reading in children with cleft palate.

**Allocation:** \$45,536

**Description of Goals and Accomplishments:** Dr. Lancaster is an early-career scientist who is establishing a laboratory to study diagnosis of and intervention for language and reading problems in children with cleft palate. The funds are being allocated to support start-up funds for her laboratory.

**Investigator:** Michael Anne Gratton, PhD

**Position Title & Department:** Scientist II, Gene Expression Laboratory

**Expertise:** Dr. Gratton studies functional outcomes of gene expression and hearing loss in animal models in Dr. Cosgrove's laboratory.

**Allocation:** \$24,943

**Description of Goals and Accomplishments:** Funds are being used to provide start-up to assist with establishing Dr. Gratton's laboratory at Boys Town.

**Investigator:** Zhao Ellen Peng, PhD

**Position Title & Department:** Director of the Functional Hearing Laboratory

**Allocation:** \$107,313

**Description of Goals and Accomplishments:** Funds are being used to establish Dr. Peng's laboratory at Boys Town.

**Investigator:** Krystal Werfel, PhD

**Position Title & Department:** Director of the Written Language Laboratory

**Expertise:** Dr. Werfel studies language and literacy development in children with hearing loss.

**Allocation:** \$194,293

**Description of Goals and Accomplishments:** Funds are being used to provide start-up to assist with establishing Dr. Werfel's laboratory at Boys Town.

**Investigator:** Kathryn Wiseman, PhD

**Position Title & Department:** Scientist I, Child Auditory Technology Laboratory

**Expertise:** Dr. Wiseman is an early-career scientist who joined our research program in November. Dr. Wiseman conducts research to optimize developmental outcomes for children with hearing loss who use hearing aids or cochlear implants.

**Allocation:** \$37,717

**Description of Goals and Accomplishments:** Funds are being used to support start-up to assist with establishing Dr. Wiseman's laboratory at Boys Town.

**Investigator:** Appolinaire Olou, PhD

**Position Title & Department:** Scientist I, Molecular Diagnostic Laboratory

**Allocation:** \$29,235



**Description of Goals and Accomplishments:** Funds are being used to provide start-up for Dr. Olou's laboratory at Boys Town for projects related to the genetics of hearing loss, childhood obesity and cancer.

**Investigator:** M. Rohan Fernando, PhD

**Position Title & Department:** Director of the Molecular Diagnostic Laboratory

**Allocation:** \$24,766

**Description of Goals and Accomplishments:** Dr. Fernando is a molecular biologist who develops novel genetic tests for hearing loss and other childhood diseases. The funds are used to purchase equipment for Dr. Fernando's laboratory.

**Investigator:** Justin Kueser, PhD

**Position Title & Department:** Scientist I, Center for Childhood Deafness, Language, and Learning

**Allocation:** \$19,526

**Description of Goals and Accomplishments:** Dr. Kueser is using funds to establish a laboratory to examine indicators of developmental language disorders in children.

**Investigator:** Claire Selin, PhD

**Position Title & Department:** Scientist I, Center for Childhood Deafness, Language, and Learning

**Allocation:** \$10,021

**Description of Goals and Accomplishments:** Dr. Selin is using funds to establish a laboratory to examine effects of childhood trauma on language development.

**Investigator:** Karla McGregor, PhD

**Position Title & Department:** Director of the Center for Childhood Deafness, Language, and Learning

**Allocation:** \$32,963

**Description of Goals and Accomplishments:** Dr. McGregor is using funds to conduct a pilot study examining language development for children with epilepsy.

**Investigator:** Dinesh Chandel, PhD

**Position Title & Department:** Scientist I, Molecular Diagnostic Laboratory

**Allocation:** \$14,308

**Description of Goals and Accomplishments:** Dr. Chandel is conducting a pilot study to examine the association between molecular health of the gastrointestinal system and mental health in adolescents.

**Investigator:** Lisa Goffman, PhD

**Position Title & Department:** Endowed Chair in the Center for Childhood Deafness, Language, and Learning

**Allocation:** \$112,045

**Description of Goals and Accomplishments:** Dr. Goffman was recently recruited as a Senior Scientist and studies the mechanisms of developmental language disorder in children and adults. Funds are being used as part of a start-up program for Dr. Goffman's laboratory.

**Investigator:** Nicole Corbin, PhD

**Position Title & Department:** Scientist I, Center for Hearing Research

**Allocation:** \$1,888

**Description of Goals and Accomplishments:** Dr. Corbin is establishing a laboratory to study binaural hearing development in children. These funds will help her to establish her own laboratory.

## Research Program & Infrastructure Development

**Project Title:** Center for Sensory Neuroscience Core Support

**Principal Investigator:** Dominic Cosgrove, PhD

**Amount of Funding:** \$198,046

**Description of Goals and Accomplishments:** Dr. Cosgrove is pursuing a line of research to develop treatments for Alport's Syndrome, which causes problems in hearing and kidney health.

**Project Title:** New Projects Fund

**Principal Investigator:** Lori Leibold, PhD

**Amount of Funding:** \$14,141

**Description of Goals and Accomplishments:** Funds for novel, highly innovative projects that will generate pilot data for future grant proposals are allocated to investigators who apply for these funds.

**Project Title:** Recruitment Fund

**Principal Investigator:** Ryan McCreery, PhD

**Amount of Funding:** \$2,811

**Description of Goals and Accomplishments:** A recruitment fund allows us to separate the costs of advertising, moving and interviewing candidates from the costs of individual recruitment packages. The initial costs of recruitment occur well in advance of the start date for a position. Moving costs vary and are generally handled separately from start-up funds.

**Project Title:** Animal Care Facility Core

**Principal Investigator:** Barbara Morley, PhD

**Amount of Funding:** \$21,967

**Description of Goals and Accomplishments:** Core support is necessary to maintain adequate staffing levels and uniform per diem charges in the Animal Care Facility.

**Project Title:** Postdoctoral Training

**Principal Investigator:** Monita Chatterjee, PhD

**Amount of Funding:** \$73,506

**Description of Goals and Accomplishments:** Supplemental funding is provided to the BTNRH post-doctoral training program to assist with training and recruitment costs for post-doctoral fellows.

**Project Title:** Boys Town Research Vehicle

**Principal Investigator:** Lori Leibold, PhD

**Amount of Funding:** \$2,795

**Description of Goals and Accomplishments:** The Boys Town Research Vehicle is a Ford F-150 truck and a goose-neck trailer outfitted with a sound-treated audiometric test room, equipment for assessing hearing and hearing aids, and designed to allow remote assessment of language and cognitive abilities for research participants who cannot easily participate in our research studies. The goal of the Boys Town Research Vehicle will be to expand the impact of our research to communities across Nebraska and the region and provide opportunities for research participation for rural and under-served populations that have historically been unable to participate in research.

**Project Title:** Institute of Human Neuroscience Support

**Principal Investigator:** Tony Wilson, PhD

**Amount of Funding:** \$20,434

**Description of Goals and Accomplishments:** Dr. Wilson has used these funds to help establish one of the first high-density Optically Pumped Magnetometry (OPM) instruments in North America. OPM allows neuroimaging with high spatial and temporal resolution at younger ages than other neuroimaging modalities.

**Project Title:** Visiting Scientist

**Principal Investigator:** Ryan McCreery, PhD

**Amount of Funding:** \$4,440

**Description of Goals and Accomplishments:** Funds are provided to investigators to launch new collaborations by bringing in scientists from other institutions with complimentary areas of expertise.

**Project Title:** Participant Recruitment

**Principal Investigator:** Ryan McCreery, PhD

**Amount of Funding:** \$766

**Description of Goals and Accomplishments:** Research that includes participants groups that are from underrepresented populations require resources to provide mileage and other forms of participant compensation across laboratories that are often not covered by grants. This funding is being used to support cross-laboratory recruitment of children with hearing loss who use hearing aids or cochlear implants, particularly families from rural areas who may not have opportunities to participate in our research otherwise.

## Minority Health Research Grants

**Introduction:** We have multiple initiatives to increase representation of under-served populations in our research. The first is key to our efforts to expand research in areas related to minority health. The second is a study of the problems associated with testing people in English and Spanish. We also have launched a diversity pilot grant program to fund small research projects that examine health disparities or help to promote health and well-being in under-represented communities.

**Project Title:** Minority Recruitment

**Investigator:** Karla McGregor, PhD

**Amount of Funding:** \$19,844

**Description of Goals and Accomplishments:** The Minority Recruitment project has continued to be successful in greatly increasing the representation of minority subjects in our NIH-funded research studies. The funds have been used to provide support for translation of consent forms and other documents, interpreters to aid in the consent process, and consultants in the minority communities. The value of this effort was increased by the presence of an NIH-funded Human Subjects Research Core at BTNRH that facilitates recruitment of subjects for all NIH-funded clinical studies. By attaching the Minority Recruitment effort to the existing core function, we have been able to spread the benefit of a proactive minority recruitment program across many laboratories. Typical minority participation in our research studies is well above the representation of minorities in our community.

**Project Title:** Spanish-English Bilinguals

**Investigator:** Lori Leibold, PhD

**Amount of Funding:** \$57,794

**Description of Goals and Accomplishments:** The goal of this project has shifted to development of an efficient test of speech perception that will allow audiologists to assess functional auditory skills in children who speak English, Spanish or both languages. Speech perception testing is a critically important tool for assessing children's hearing, determining candidacy for sensory devices and guiding language intervention. Over 15% of children in the US are raised in Spanish-speaking homes, but speech perception testing is typically performed in English or omitted altogether, due to a lack of test materials and a shortage of Spanish-speaking audiologists. NTSBRDF funds are providing partial support for Karen Duarte, a research assistant who is a Spanish-English bilingual. Ms. Duarte helps to recruit bilingual and monolingual Spanish-speaking participants for research studies.

**Project Title:** Bilingual Hearing Aid Use

**Investigator:** Kathryn Wiseman, Ph.D.

**Amount of Funding:** \$1,104

**Description of Goals and Accomplishments:** Diversity grants were awarded to Boys Town investigators who prepared applications to promote health in under-served populations to provide preliminary data for extramural grant applications. This diversity pilot examines patterns of hearing aid and cochlear implant use in children who come from homes where more than one language is spoken to increase professional support and device use.

**Project Title:** Youth Perspectives on Overcoming Adversity: Examining Views based on Race and Ethnicity

**Principal Investigator:** Patrick Tyler, PhD

**Amount of Funding:** \$48,486

**Description of Goals and Accomplishments:** Diversity grants were awarded to Boys Town investigators who prepared applications to promote health in under-served populations to provide preliminary data for extramural grant applications. Dr. Tyler has led a research project involving Boys Town youth to gain their perspectives on overcoming adversity, hope, and developing intervention strategies that could be used to serve children and families.

**Project Title:** DEI Project: Language Diversity

**Investigator:** Krystal Werfel, PhD

**Amount of Funding:** \$7,188

**Description of Goals and Accomplishments:** Diversity grants were awarded to Boys Town investigators who prepared applications to promote health in under-served populations to provide preliminary data for extramural grant applications. This diversity pilot is designed to gather data to assess the impact of linguistic diversity on reading and language development in children with hearing loss.

**Boys Town National Research Hospital**  
**Nebraska Tobacco Settlement Biomedical Research Development Fund**  
**Allocation for FY2024**

		<u>Allocation</u>
<b>Strategic Faculty Recruitment and Retention</b>		
Barbara Morley, PhD, Center for Hearing Research	\$	28,017.07
Kristen Janky, PhD, Center for Hearing Research	\$	4,350.15
Monita Chatterjee, PhD, Aud Prostheses & Perception Lab	\$	17,241.80
Lori Leibold, Ph.D., Center for Hearing Research	\$	3,317.18
Katie Gordon, PhD, Center for Childhood Deafness	\$	50,753.11
Kaylah Lalonde, PhD, Center for Hearing Research	\$	32,610.85
Hope S. Lancaster, PhD, Center of Childhood Deafness	\$	45,536.04
Michael A. Gratton, PhD, Center for Sensory Neuroscience	\$	24,943.17
Zhao Ellen Peng, PhD, Center for Hearing Research	\$	107,312.97
Krystal Werfel, Ph.D., Center for Childhood Deafness	\$	194,292.80
Kathryn Wiseman, PhD, Center for Hearing Research	\$	37,716.98
Appolinaire Olou, PhD, Center for Sensory Neuroscience	\$	29,235.12
M. Rohan Fernando, PhD, Center for Sensory Neuroscience	\$	24,766.16
Justin Kueser, PhD, Center of Childhood Deafness	\$	19,526.02
Claire Selin, PhD, Center of Childhood Deafness	\$	10,021.36
Karla McGregor, PhD, Center for Childhood Deafness	\$	32,962.53
Dinesh Chandel, PhD, Center for Sensory Neuroscience	\$	14,308.16
Lisa Goffman, PhD, Center of Childhood Deafness	\$	112,045.28
Nicole Corbin, PhD, Center for Hearing Research	\$	1,888.16
<b>Subtotal</b>	<b>\$</b>	<b>790,844.91</b>
<b>Research Program and Infrastructure Development</b>		
Center for Sensory Neuroscience Core Support, Dominic Cosgrove, PhD	\$	198,046.38
New Projects Fund, Lori Leibold, PhD	\$	14,140.58
Recruitment Fund, Ryan McCreery, PhD	\$	2,811.38
Animal Care Facility Core, Barbara Morley, PhD	\$	21,967.18
Postdoctoral Training, Monita Chatterjee, PhD	\$	73,505.66
Boys Town Research Vehicle, Lori Leibold, PhD	\$	2,795.09
Institute of Human Neuroscience Support, Tony Wilson, PhD	\$	20,433.75
Visiting Scientist, Ryan McCreery, PhD	\$	4,440.01
Participant Recruitment, Ryan McCreery, PhD	\$	766.48
<b>Subtotal</b>	<b>\$</b>	<b>338,906.51</b>
<b>Minority Health Research Grants</b>		
Minority Recruitment, Karla McGregor, PhD	\$	19,843.66
Spanish-English Bilinguals, Lori Leibold, PhD	\$	57,794.36
Bilingual Hearing Aid Use, Kathryn Wiseman, PhD	\$	1,104.04
DEI Project: Overcoming Adversity, Patrick Tyler, PhD	\$	48,486.04
DEI Project: Language Diversity, Krystal Werfel, PhD	\$	7,187.64
<b>Subtotal</b>	<b>\$</b>	<b>134,415.74</b>
<b>Total FY 2023-2024 Allocation</b>	<b>\$</b>	<b>1,264,167.16</b>



**NEBRASKA**  
TOBACCO SETTLEMENT  
BIOMEDICAL RESEARCH  
DEVELOPMENT FUND

2023-24 PROGRESS REPORT

