NEBRASKA
TOBACCO SETTLEMENT BIOMEDICAL RESEARCH DEVELOPMENT FUND

2024-25 PROGRESS REPORT

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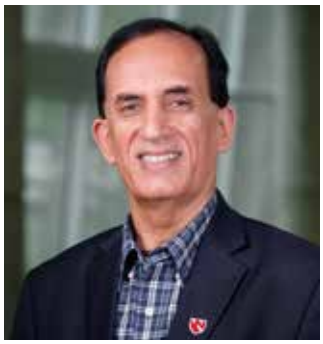

University of Nebraska Medical Center

Meet Surinder Batra, PhD

Investment from tobacco settlement funding: $3.7 million (since 2002)
Total portfolio through FY24: $41.1 million
Return on investment: 10 to 1

For more than three decades, Surinder Batra, PhD, has built a research program at the University of Nebraska Medical Center (UNMC) that is generating crucial insights into some of the deadliest forms of cancer. As professor and chair of the Department of Biochemistry and Molecular Biology, and associate director for translational research at the Fred & Pamela Buffett Cancer Center, Dr. Batra leads teams that turn discoveries made in the lab into better ways to detect and treat cancer.

Dr. Batra's laboratory focuses on some of the most lethal malignancies, including pancreatic, ovarian, breast, prostate and lung cancer. His team studies the environment surrounding a tumor, particularly sugar-coated proteins (mucins) and other molecules that help cancer cells grow, spread, and resist treatment. By examining these changes in advanced experimental models and in samples from patients, his lab looks for weak spots that can be targeted by new drugs.

This research has been vital in explaining why certain cancers are difficult to detect or eventually stop responding to therapy. It has also led to the discovery of new biomarkers—measurable signs in blood or tissue that support earlier diagnosis—and new molecular "switches" linked to drug resistance, which may help chemotherapy remain effective for longer periods and improve treatment outcomes for future patients.

Beyond his own research program, Dr. Batra is widely known for building large, collaborative research teams. He has served as principal investigator or project leader on multiple long-term National Institutes of Health grants and leads multi-lab networks that bring together scientists and clinicians from across UNMC and partner institutions.

Mentorship is also central to Dr. Batra's work. His lab provides research opportunities for undergraduate students, medical students, graduate students, and postdoctoral fellows, reflecting his commitment to training the next generation of scientists and physician-scientists. He often credits his team for the day-to-day discoveries in the lab, underscoring his belief that complex diseases like pancreatic cancer can only be solved through teamwork.

Dr. Batra was recruited to UNMC in 1996, a move that helped lay the foundation that has made UNMC's pancreatic cancer research program one of the strongest of its kind. In 2009, he became chair of the Department of Biochemistry and Molecular Biology and, in 2021, was named the inaugural Dr. Alfred and Linda Hartmann Chair. His leadership and scientific impact have earned some of the university's highest honors, including recognition as UNMC's 2012 Scientist Laureate and the University of Nebraska's Outstanding Research and Creative Activity (ORCA) Award in 2016.

Since the establishment of Nebraska's Tobacco Settlement Biomedical Research Development Fund, these funds have provided periodic, strategic investments to support Dr. Batra's growing research programs, totaling $3.7 million. Over nearly a quarter-century, these investments have played a vital role in accelerating translational research, fostering talented scientists and collaborative teams within the department, and helping grow a world-class cancer research program at UNMC.

For Nebraskans and patients around the world, the discoveries coming from Dr. Batra's team—made possible in part by this long-term state support—have deepened our understanding of how aggressive cancers start, spread, and resist treatment, offering hope that these diseases can be detected earlier and treated more effectively.

UNIVERSITY OF NEBRASKA MEDICAL CENTER
Nebraska Tobacco Settlement Biomedical Research Development Fund (NTSBRDF)

Year 24: July 1, 2024 – June 30, 2025
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 2024-25, UNMC received $7,804,003 in Nebraska Tobacco Settlement Funds and invested it as follows:

- $4,402,848 in strategic recruitment or retention of new or meritorious research faculty, including $1,664,699 for the recruitment/retention of women and under-represented minorities.
- $2,921,931 in program and other infrastructure development, such as capital equipment, new core development, and Centers.
- $439,903 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.
- $39,321 for joint research projects between UNMC and the University of Nebraska–Lincoln.

Overall, 27% of the total 2024-25 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 $170.8M. In fiscal year 2025, UNMC's research expenditures totaled $229.5M, a 5% 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. 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 $98.8M in the strategic recruitment or retention of 311 researchers, who, in turn, have attracted a total of over $1.75B in extramural research support after they received NTSBRDF funding. To date, this represents a return on investment of approximately 16.7 to 1.

Strategic Faculty Recruitment & Retention

In 2024-25, UNMC invested the majority of its allocation, $4,402,848 (56%), in strategic recruitment and retention of faculty. These supported faculty members have a combined portfolio of $83.3M 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 United States Army (US Army), and The U.S. Department of Veterans Affairs (VA).

Investigators with first time NTSBRDF support during 2024-2025

Jerrod Anzalone, PhD
Assistant Professor, *College of Public Health, Biostatistics*
Clinical Research Informatics and EHR Data Science
Active funding: $24,925
Active funding sources: University of Alabama - Birmingham

Shaun Cross, PhD
Assistant Professor, *College of Public Health, Environmental, Agricultural & Occupational Health*
Pathogen Surveillance, Genomics, and Vector-Borne Diseases
Active funding: $47,772
Active funding sources: Association of Public Health Laboratories, Inc.

Brittney Dickey, PhD
Assistant Professor, *College of Public Health, Epidemiology*
Viral-Associated Cancer Epidemiology (HPV and HIV)
Active funding: $37,675
Active funding sources: H. Lee Moffitt Cancer Center

Natalia Osna, MD, PhD
Professor, *College of Medicine, Pharmacology & Experimental Neuroscience*
Alcohol-Associated Liver Disease and Inflammation
Active funding: $1,347,872
Active funding sources: National Institute on Alcohol Abuse and Alcoholism (NIH), National Institute of Allergy and Infectious Diseases (NIH)

Palsamy Periyasamy, PhD
Associate Professor, *College of Medicine, Pharmacology & Experimental Neuroscience*
NeuroHIV, Substance Abuse, and Epigenetics
Active funding: $1,407,521
Active funding sources: National Institute on Drug Abuse (NIH)

Julie Petersen, PhD
Assistant Professor, *College of Public Health, Epidemiology*
Maternal and Child Health Epidemiology and Birth Defects
Active funding: $134,454
Active funding sources: Massachusetts Department of Public Health

Brian Sims, PhD
Associate Professor, *College of Public Health, Health Promotion*
Health Promotion, Evaluation, and Health Equity
Active funding: $163,000
Active funding sources: University of Minnesota, Center for Justice Innovation

Jingjing Sun, PhD
Assistant Professor, *College of Pharmacy, Pharmaceutical Science*
Nanocarriers, Drug Delivery, and Cancer Therapy
Active funding: $427,741
Active funding sources: State of Nebraska, National Cancer Institute (NIH)

Shibiao Wan, PhD
Assistant Professor, *College of Medicine, Genetics Cell Biology & Anatomy*
Machine Learning, AI/ML Method Development, and Multi-omics Analysis
Active funding: $332,000
Active funding sources: Nebraska EPSCoR, Office of the Director (NIH)

Investigators with first time NTSBRDF support during 2024-2025

Suvendra Bhattacharyya, PhD
Professor, *College of Medicine, Pharmacology & Experimental Neuroscience*
RNA Biology and Immune Cell Function

Kendra Clark, PhD
Assistant Professor, *College of Medicine, Ob/Gyn Research Lab*
Reproductive Toxicology and Environmental Contaminants (PFAS)

Kristin Dickinson, PhD
Assistant Professor, *College of Nursing, Omaha Division*
Targeted Therapies in Leukemias

Amy Hoffman, PhD
Professor, *College of Nursing, Omaha Division*
Physical Activity to Manage Fatigue in Cancer Patients

Yunju Im, PhD
Assistant Professor, *College of Public Health, Biostatistics*
Statistical Analysis in Science

Joseph Khoury, MD
Professor, *College of Medicine, Pathology, Microbiology & Immunology*
Hematopathology and Computational Cancer Classification

Michael Moulton, MD
Professor, *College of Medicine, Surgery-Cardiothoracic Surgery*
Surgical Interventions in Cardiovascular Disease, Atrial Fibrillation, Left Ventricular Assist Devices

Michele Plewes, PhD
Assistant Professor, *College of Medicine, Ob/Gyn Research Lab*
Reproductive Health, Mitochondria, and Lipid Signaling

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

Susmita Sil, PhD
Assistant Professor, *College of Medicine, Pharmacology & Experimental Neuroscience*
Long Non-Coding RNAs in Neurodegeneration

DP Singh, PhD
Professor, *College of Medicine, Ophthalmology and Visual Sciences*
Aging and Degenerative Disorders

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

Leonardo da Silva Augusto, PhD
Assistant Professor, *College of Medicine, Pathology, Microbiology & Immunology*
Neuroinflammation and Neurodegeneration

Investigators receiving continuing NTSBRDF support during 2024-2025

Windy Alonso, PhD
Associate Professor, *College of Nursing, Omaha Division*
Heart Failure and Exercise Interventions
Active funding: $1,339,818
Active funding sources: National Heart, Lung, and Blood Institute (NIH)

Pooneh Bagher, PhD
Associate Professor, *College of Medicine, Cellular & Integrative Physiology*
Vascular Function in Extreme Physiological Conditions
Active funding: $1,222,417
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: $2,969,438
Active funding sources: National Heart, Lung, and Blood Institute (NIH), Johns Hopkins University

Christopher Barrett, MD
Assistant Professor, *College of Medicine, Surgery-Acute Care Surgery*
Coagulation and Trauma Research
Active funding: $226,480
Active funding sources: National Heart, Lung, and Blood Institute (NIH), Hikari Dx. Inc

Surinder Batra, PhD
Professor, *College of Medicine, Biochemistry and Molecular Biology*
Pancreatic Cancer, Development of Diagnostic/Prognostic Markers for Cancer
Active funding: $4,088,059
Active funding sources: U.S. Veterans Administration, Mount Sinai Health System, University of Pittsburgh, National Cancer Institute (NIH), H. Lee Moffitt Cancer Center, University of Pittsburgh Medical Center, University of California - San Diego Moores Cancer Center

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

Keely Buesing, MD
Professor, *College of Medicine, Surgery-Acute Care Surgery*
Delivery of Oxygenated Microbubbles to Improve Oxygenation in Lung Injury and Disease
Active funding: $1,107,198
Active funding sources: National Strategic Research Institute, Johns Hopkins University, University of Colorado at Boulder

Siddappa Byrareddy, PhD
Professor, *College of Medicine, Pharmacology & Experimental Neuroscience*
HIV/AIDS Prevention, Host-Virus Dynamics
Active funding: $2,461,415
Active funding sources: Glebe Medical Research Foundation - NU Foundation, University of Minnesota, National Institute on Drug Abuse (NIH), Texas Biomedical Research Institute

Subhash Chand, PhD
Assistant Professor, *College of Medicine, Anesthesiology*
HIV, Substance Abuse, and Cardiovascular Comorbidities
Active funding: $307,000
Active funding sources: National Institute on Drug Abuse (NIH)

Kuan-Hua Chen, PhD
Assistant Professor, *College of Medicine, Neurological Sciences*
Dementia and Brain Health
Active funding: $473,719
Active funding sources: National Institute on Aging (NIH)

Suyong Choi, PhD
Assistant Professor, *Eppley Institute*
Cancer Signaling Mechanisms
Active funding: $721,172
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: $1,017,404
Active funding sources: Knights Templar Eye Foundation Inc, Genentech, Inc., National Eye Institute (NIH)

Prasanta Dash, PhD
Associate Professor, *College of Medicine, Pharmacology & Experimental Neuroscience*
Drug-Drug Interactions in HIV Therapeutics
Active funding: $383,750
Active funding sources: National Institute on Aging (NIH)

Benson Edagwa, PhD
Professor, *College of Medicine, Pharmacology & Experimental Neuroscience*
Antiretroviral Therapies for HBV and HIV
Active funding: $3,013,480
Active funding sources: National Institute of Allergy and Infectious Diseases (NIH), Exavir Therapeutics

Charity Evans, MD
Professor, *College of Medicine, Surgery-Acute Care Surgery*
Acute Care Surgery, Trauma Care, Violence Prevention
Active funding: $375,746
Active funding sources: City of Omaha, Visiting Nurses Association, Nebraska Medical Center

Jared Evans, PhD
Associate Professor, *College of Medicine, Pathology, Microbiology & Immunology*
Molecular Virology and Countermeasures for Emerging Biological Threats
Active funding: $2,054,902
Active funding sources: National Strategic Research Institute

Joseph Fauver, PhD
Assistant Professor, *College of Public Health, Epidemiology*
Pathogen Genomics
Active funding: $466,858
Active funding sources: Yale University

Alfred Fisher, MD, PhD
Professor, *College of Medicine, Internal Medicine, Geriatrics/Palliative Medicine*
Biology of Aging, Frailty, and Other Factors that Influence Aging
Active funding: $605,442
Active funding sources: BrainCheck, Duke University

Howard Fox, MD, PhD
Professor, *College of Medicine, Neurological Sciences*
HIV/AIDS and Neurodegenerative Diseases
Active funding: $2,875,864
Active funding sources: National Institute on Drug Abuse (NIH), EMMES Corporation, Drexel University, San Diego Biomedical Research Institute

Apar Kishor Ganti, MD
Professor, *College of Medicine, Internal Medicine, Oncology/Hematology*
Cancer Treatment and Biomarkers
Active funding: $1,811,573
Active funding sources: Poseida Therapeutics Inc., Bristol-Myers Squibb Company, Merck Sharp & Dohme Corp., Iovance Biotherapeutics, Inc., Brigham & Women's Hospital, Big Ten Cancer Research Consortium, Imugene Ltd.

Stacey Gilk, PhD
Professor, *College of Medicine, Pathology, Microbiology & Immunology*
Role of Intracellular Pathogens in Host Cell Lipids and Lipid Metabolism
Active funding: $860,536
Active funding sources: National Institute of Allergy and Infectious Diseases (NIH), Burroughs Wellcome Fund, U.S. Department of Agriculture

Yvonne Golightly, PhD
Professor, *College of Allied Health Professions, Physical Therapy*
Chronic Disease Prevention
Active funding: $177,489
Active funding sources: Nebraska Bankers Association, University of North Carolina Chapel Hill

Babu Guda, PhD
Professor, *College of Medicine, Genetics Cell Biology & Anatomy*
Bioinformatics, Systems Biology, and Cancer Genomics
Active funding: $531,270
Active funding sources: Wichita State University

Rebekah Gundry, PhD
Professor, *College of Medicine, Cellular/Integrative Physiology*
Glycoproteomics and Glycomics to Understand Cardiac Biology and Disease
Active funding: $7,020,021
Active funding sources: Regenerative Research Foundation, Medical College of Wisconsin, National Heart, Lung, and Blood Institute (NIH), National Institute of General Medical Sciences (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

Michael Hollingsworth, PhD
Professor, *Eppley Institute*
Pancreatic Cancer
Active funding: $3,317,276
Active funding sources: National Cancer Institute (NIH), University of Oklahoma Health Sciences Center, U.S. Army Congressionally Directed Medical Research Programs

Corey Hopkins, PhD
Professor, *College of Pharmacy, Pharmaceutical Science*
Medicinal Chemistry and CNS Drug Discovery
Active funding: $1,734,996.21
Active funding sources: University of Kansas Medical Center, National Institute of Neurological Disorders and Stroke (NIH)

Ronnie Horner, PhD
Professor, *College of Public Health, Health Services Research & Administration*
mHealth Technology and Neurological Diseases
Active funding: $30,000
Active funding sources: NE DHHS

Kristina Kintziger, PhD
Associate Professor, *College of Public Health, Environmental, Agricultural, & Occupational Healt*h
Environmental and Disaster Epidemiology
Active funding: $90,063
Active funding sources: Centers for Disease Control and Prevention, Clemson University

Mariya Kovaleva, PhD
Assistant Professor, *College of Nursing, Omaha Division*
Alzheimer's and Dementia Care
Active funding: $12,000
Active funding sources: Gerontological Advanced Practice Nurses Association Foundation, American Society of PeriAnesthesia Nurses

Mohan Krishnan, PhD
Associate Professor, *College of Medicine, Biochemistry and Molecular Biology*
Neonatal Inflammatory Conditions
Active funding: $1,547,914
Active funding sources: National Heart, Lung, and Blood Institute (NIH), Eunice Kennedy Shriver National Institute of Child Health and Human Development (NIH)

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

James Lawler, MD
Professor, *College of Medicine, Internal Medicine, Infectious Diseases*
Infectious Disease, Biocontainment & Medical Evacuation Training
Active funding: $1,168,868
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

Grinu Mathew, PhD
Assistant Professor, *Eppley Institute*
Prostate Cancer Research
Active funding: $677,684
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
Dean and 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)

Wasim Nasser, PhD
Associate Professor, *College of Medicine, Biochemistry and Molecular Biology*
Brain Metastasis, Breast Cancer, and Lung Cancer
Active funding: $1,082,755
Active funding sources: U.S. Army Congressionally Directed Medical Research Programs, National Cancer Institute (NIH)

Matthew Nonnenmann, PhD
Professor, *College of Public Health, Environmental, Agricultural, & Occupational Health*
Industrial Hygiene and Bioaerosols
Active funding: $1,109,764
Active funding sources: NE DHHS, 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: $1,353,963.65
Active funding sources: National Institute of Diabetes and Digestive Kidney Diseases (NIH), National Cancer Institute (NIH), National Institute on Alcohol Abuse and Alcoholism (NIH)

Edward Peters, SCD
Professor, *College of Public Health, Epidemiology*
Cancer and Chronic Diseases
Active funding: $2,444,487
Active funding sources: National Institute on Aging (NIH), Emory University, State of Nebraska

Armen Petrosyan, MD, PhD
Associate Professor, *College of Medicine, Biochemistry and Molecular Biology*
Golgi Alteration, Glycosylation, and Prostate Cancer
Active funding: $343,125
Active funding sources: National Institute on Alcohol Abuse and Alcoholism (NIH)

Iraklis Pipinos, MD, PhD
Professor, *College of Medicine, Surgery-Vascular Surgery*
Regenerative Medicine, Peripheral Arterial Disease, Repair of Skeletal Muscle Tissue in the Extremities
Active funding: $2,270,564
Active funding sources: National Institute on Aging (NIH), Emory University, Washington University in St. Louis, University of Nebraska - Omaha

Prakash Radhakrishnan, PhD
Associate Professor, *Eppley Institute*
Glycobiology, Cell Signaling, and Therapeutics in Pancreatic Cancer
Active funding: $1,370,998
Active funding sources: American Cancer Society, National Cancer Institute (NIH)

Karuna Rasineni, PhD
Associate Professor, *College of Medicine, Biochemistry and Molecular Biology*
Alcoholic and Non-Alcoholic Fatty Liver Disease
Active funding: $1,356,860
Active funding sources: National Institute on Alcohol Abuse and Alcoholism (NIH)

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)

Lisa Rucks, PhD
Professor, *College of Medicine, Pathology, Microbiology & Immunology*
Growth & Development of Chlamydia
Active funding: $207,225
Active funding sources: National Institute of Allergy and Infectious Diseases (NIH)

Ruxana Sadikot, MD
Professor, *College of Medicine, Internal Medicine, Pulmonary*
Lung Immune Response and Lung Injury
Active funding: $808,503
Active funding sources: Emory University, ReAlta Life Sciences, Inc., V.A. Nebraska-Western Iowa Health Care System, V.A. Medical Center - Omaha

Derrick Samuelson, PhD
Assistant Professor, *College of Medicine, Internal Medicine, Pulmonary*
Role of Microbiome in Defense Against Respiratory Pathogens
Active funding: $1,285,300
Active funding sources: National Institute of Diabetes and Digestive Kidney Diseases (NIH)

Nora Sarvetnick, PhD
Professor, *College of Medicine, Surgery-Transplant*
Autoimmune Diseases and Type 1 Diabetes Research
Active funding: $1,507,338
Active funding sources: National Institute of Allergy and Infectious Diseases (NIH), Edna Ittner Trust

Lauren Sauer, MS
Associate Professor, *College of Public Health, COPH Environmental, Agricultural, & Occupational Health*
Impact of Bio-emergencies and Disasters on Healthcare Systems and Policies
Active funding: $3,643,955
Active funding sources: Henry M Jackson Foundation for the Advancement of Military Medicine, Advanced Technology International

Micah Schott, PhD
Associate Professor, *College of Medicine, Biochemisry and Molecular Biology*
Alcohol-associated Liver and Metabolic Disease
Active funding: $1,648,569
Active funding sources: National Institute of General Medical Sciences (NIH), National Cancer Institute (NIH), National Institute on Alcohol Abuse and Alcoholism (NIH)

Marcia Shade, PhD
Associate Professor, *College of Nursing, Omaha Division*
Geriatric Nursing and Medication Safety
Active funding: $5,000
Active funding sources: American Society for Pain Management Nursing

Nicole Shonka, MD
Professor, *College of Medicine, Internal Medicine, Oncology/Hematology*
High-Grade Gliomas and Glioblastoma Research
Active funding: $1,171,871
Active funding sources: National Cancer Institute (NIH), Chimerix, Inc., Aveta Biomics, CNS Pharmaceuticals

Kelly Stauch, PhD
Associate Professor, *College of Medicine, Neurological Sciences*
Neurodegenerative Disease Metabolism and Mitochondrial Dysfunction
Active funding: $2,457,617
Active funding sources: U.S. Army Congressionally Directed Medical Research Programs, Alzheimer's Association, Michael J. Fox Foundation

Paul Trippier, PhD
Professor, *College of Pharmacy, Pharmaceutical Science*
Small Molecule Drug Discovery for Cancer & Neurodegenerative Diseases
Active funding: $2,106,975
Active funding sources: National Cancer Institute (NIH), U.S. Army Congressionally Directed Medical Research Programs, National Institute on Aging (NIH), Eunice Kennedy Shriver National Institute of Child Health and Human Development (NIH), Oakland University

Dana Verhoeven, PhD
Assistant Professor, *College of Public Health, Epidemiology*
Health Care Delivery and Dynamics
Active funding: $206,193
Active funding sources: Winnebago Comprehensive Healthcare System

Nick Woods, PhD
Associate Professor, *Eppley Institute*
Cancer Signaling and Systems Biology
Active funding: $139,324
Active funding sources: Virginia Commonwealth University, University of Utah Huntsman Cancer Institute

Steven Yeh, MD
Professor, *College of Medicine, Ophthalmology and Visual Science*s
Ocular Inflammation and Diseases
Active funding: $1,892,979
Active funding sources: Adverum Biotechnologies, Inc., University of California - San Francisco, The Retina Society, U.S. Agency for International Development, Johns Hopkins University, National Eye Institute (NIH), Oregon Health and Science University, Priovant Therapeutics, Inc., Emory University, Cincinnati Children's Hospital Medical Center

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: $193,725
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: $953,900
Active funding sources: CurePSP, Inc., Nebraska EPSCoR, National Institute on Drug Abuse (NIH)

Research Program and Infrastructure Development

A total of $2,921,931 (37%) was invested in research program and infrastructure development in 2024-25. Additionally, $39,321 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. 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. Infrastructure funding also supports software development and implementation to facilitate access of our scientists to management, educational, and other software applications to increase research efficiency and decrease the risk of non-compliance.
Joint programs between other NU System campuses and UNMC included funding for the following project areas:

Nebraska Research Initiative

- Hesham Basma, PhD – The Gut Microbiome as a Factor in the Progression and Severity of Cardiomyopathy
- Jana Ponce, PhD – Omega-3 Fatty Acids to Inhibit Drug-Induced Inflammation & Synaptic Alterations

Minority Health and Health Disparities Research and Mentor Programs

In 2024-25, UNMC invested $439,903 in minority health and health disparities by supporting UNMC's Center for Reducing Health Disparities (CRHD), investing in pilot projects for health disparities research, and mentoring through student success engagement and the recruitment of diversity students for the Summer Undergraduate Research Program (SURP) from disadvantaged backgrounds.

The Center for Reducing Health Disparities (CRHD) 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 $32,058 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: Reducing Cervical Cancer Disparities in Nebraska
Principal Investigator: Lindsey McAlarnen, MD, Assistant Professor, College of Medicine, Obstetrics and Gynecology

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 summer research poster session with all the other summer undergraduate students. 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 (SURP) 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 $8,613 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
FY2025 Allocation

Strategic Faculty Recruitment and Retention		FY 2024-2025 Allocation
College of Allied Health Professions	$	84,801
Yvonne Golightly, PhD		
College of Dentistry	$	5,547
Benjamin Kwok, PhD		
College of Medicine		
Anesthesiology	$	84,065
Subhash Chand, PhD		
Biochemistry/Molecular Biology	$	529,440
Surinder Batra, PhD; Mohan Krishnan, PhD; Wasim Nasser, PhD; Armen Petrosyan, MD, PhD; Karuna Rasineni, PhD; Micah Schott, PhD		
Cellular/Integrative Physiology	$	192,389
Pooneh Bagher, PhD; Rebekah Gundry, PhD		
Genetics, Cell Biology, and Anatomy	$	40,411
Kishor Bhakat, PhD; Babu Guda, PhD; Shibiao Wan, PhD		
Internal Medicine	$	517,003
Alfred Fisher, MD, PhD; Apar Kishor Ganti, MD; James Lawler, MD; Ruxana Sadikot, MD; Derrick Samuelson, PhD; Nicole Shonka, MD		
Neurological Sciences	$	133,131
Kuan-Hua Chen, PhD; Howard Fox, MD, PhD; Kelly Stauch, PhD; Peng Zhong, PhD		
Obstetrics/Gynecology	$	164,313
Kendra Clark, PhD; Lynda Harris, PhD; Michele Plewes, PhD		
Opthalmology and Visual Sciences	$	197,761
Christopher Conrady, MD, PhD; DP Singh, PhD; Steven Yeh, MD; Jae Hyuk Yoo, PhD		
Pathology, Microbiology, and Immunology	$	365,250
Leonardo da Silva Augusto, PhD; Jared Evans, PhD; Stacey Gilk, PhD; Joseph Khoury, MD; Lisa Rucks, PhD; Jian Xie, PhD; Pengwei Zhang, PhD		
Pharmacology and Experimental Neuroscience	$	275,547
Suvendra Bhattacharyya, PhD; Prasanta Dash, PhD; Benson Edagwa, PhD; Natalia Osna, MD, PhD; Palsamy Periyasamy, PhD; Siddappa Byrareddy, PhD; Susmita Sil, PhD		
Radiation Oncology	$	5,794
Michael Baine, MD, PhD		
Surgery	$	153,298
Christopher Barrett, MD; Keely Buesing, MD; Charity Evans, MD; Michael Moulton, MD; Iraklis Pipinos, MD, PhD; Nora Sarvetnick, PhD		
Surgical Oncology	$	109,897
Joshua Mammen, MD, PhD		
College of Nursing	$	297,951
Windy Alonso, PhD; Michele Balas, PhD; Kristin Dickinson, PhD; Bailey Hendricks, PhD; Amy Hoffman, PhD; Mariya Kovaleva, PhD; Anna Schwartz, PhD; Marcia Shade, PhD; Roxanne Vandermause, PhD		
College of Pharmacy	$	192,457
Corey Hopkins, PhD; David Oupicky, PhD; Don Ronning, PhD; Jingjing Sun, PhD; Paul Trippier,		
College of Public Health	$	547,878
Jerrod Anzalone, PhD; Shaun Cross, PhD; Brittney Dickey, PhD; Joseph Fauver, PhD; Ronnie Horner, PhD; Yunju Im, PhD; Kristina Kintziger, PhD; Abraham Mengist, PhD; Matthew Nonnenmann, PhD; Edward Peters, SCD; Julie Petersen, PhD; Kendra Ratnapradipa, PhD; Lauren Sauer, MS; Brian Sims, PhD; Dana Verhoeven, PhD; Ying Zhang, PhD		
Eppley Institute for Research in Cancer and Allied Diseases	$	157,375
Suyong Choi, PhD; Michael Hollingsworth, PhD; Grinu Mathew, PhD; Prakash Radhakrishnan, PhD; Nick Woods, PhD		
Munroe-Meyer Institute	$	348,540
Karoly Mirnics, MD		
Subtotal	**$**	**4,402,848**

Meet Gwenael Layec, PhD

Advancing Muscle and Vascular Health Through Innovative Science and Community Impact

Investment from tobacco settlement funding: $19,600
Total portfolio through FY25: $1.32 million
Return on investment: 67 to 1

"Millions of people are struggling with long COVID, yet many existing rehabilitation programs are inaccessible to those who need them most. Our goal is to develop a treatment option that is safe, effective, and—most importantly—accessible to those who can't engage in traditional exercise-based therapy. If successful, this research could improve post-illness resiliency, helping individuals regain their independence, mobility, and quality of life."

— Dr. Gwenael Laye

SUMMARY

Dr. Gwenael Layec, Associate Professor at the University of Nebraska at Omaha (UNO), serves as the co-director of the Vascular and Metabolic Phenotyping Research (VAMPR) Laboratory, an interdisciplinary research hub housed in the Health and Kinesiology (H&K) Building at UNO. The VAMPR Lab is dedicated to understanding the mechanisms governing peripheral oxygen exchange and muscle bioenergetics in healthy and clinical populations, with the mission of identifying and refining therapeutic strategies that improve mobility, vascular function, and overall health.

Dr. Layec's research examines how oxidative stress, environmental contaminants, and exposures such as cigarette smoke impair mitochondrial function and blood vessel health. By integrating advanced metabolic imaging, vascular assessments, muscle biochemistry, and computational modeling, the VAMPR Lab is uncovering why certain populations experience accelerated mobility loss, and how targeted interventions can reverse or slow this decline.

The lab's impact is deeply felt across UNO. Students working in the VAMPR Lab receive hands-on training in cutting-edge techniques, from magnetic resonance spectroscopy to near-infrared spectroscopy and ultrasound-based vascular measurements. These experiences prepare UNO graduates for careers in medicine, public health, rehabilitation, and biomedical research, strengthening both the university's academic mission and Nebraska's health workforce.

In FY2025, Dr. Layec secured a $3.2 million NIH grant to evaluate home-based lower-body heat therapy as a treatment for individuals with long COVID who are unable to participate in conventional exercise programs. Building on VAMPR pilot studies suggesting that repeated heat exposure can improve vascular function and mitochondrial capacity for energy production, this project positions UNO as a national contributor to solving one of the world's most pressing post-pandemic health challenges.

Nebraska Tobacco Settlement Biomedical Research Development Fund (NTSBRDF) support has helped the VAMPR Lab develop essential infrastructure, pilot data, and student training opportunities that set the stage for major federal investments. These resources continue to amplify UNO's research capacity while advancing discoveries with meaningful implications for community and global health.

Through his leadership of the VAMPR Lab, Dr. Layec is driving scientific progress that benefits UNO, supports Nebraska communities, trains future innovators, and contributes knowledge with the potential to transform mobility and vascular health worldwide.

UNIVERSITY OF NEBRASKA OMAHA
Nebraska Tobacco Settlement Biomedical Research Development Fund (NTSBRDF)

Year 24: July 1, 2024 – June 30, 2025
Progress Report

Executive Summary

The University of Nebraska at Omaha (UNO) is now in its fifth consecutive year of receiving Nebraska Tobacco Settlement Biomedical Research Development Funding (NTSBRDF), which continues to play a vital role in advancing our biomedical research portfolio. These funds are strategically invested in two priority areas:

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

For 2024-25, UNO invested:
- $303,399 in strategic recruitment of new research faculty or retention of meritorious researchers.
- $234,619 in research infrastructure and development

Since its inception in FY22, the NTSBRDF program has been instrumental in strengthening UNO's research enterprise. In FY25, UNO secured more than $40 million in sponsored awards, and new proposal submissions increased by 12%, reflecting strong momentum in pursuing external funding.

A major recent milestone was the establishment of UNO's new NIH-funded Center of Biomedical Research Excellence (COBRE), the Center for Cardiovascular Research in Biomechanics (CRiB). UNO's Office of Research and Creative Activity (ORCA) has provided critical support to ensure CRiB's successful launch and long-term development.

Growing extramural research funding continues to benefit Nebraska's economy by attracting collaborators, students, and industry partners. As universities anticipate potential reductions in returned Facilities & Administrative (F&A) funds due to ongoing federal rate negotiations, tobacco settlement funds will become even more essential. In the event that returned F&A support declines, NTSBRDF support will be critical to sustaining competitive biomedical research, supporting faculty success, and ensuring Nebraska continues to benefit from the scientific and economic impact of UNO's research enterprise.

Strategic Faculty Recruitment & Retention

In FY25, the University of Nebraska at Omaha (UNO) invested $303,399 of Nebraska Tobacco Settlement Biomedical Research Development Funds (NTSBRDF) to support multi-year start-up and retention packages for outstanding scientists. These funds are essential to strengthening Nebraska's research capacity, enabling UNO to attract top-tier researchers in a highly competitive national landscape and to provide the laboratory equipment, research infrastructure, and specialized technology needed to launch productive research programs. This early investment allows new faculty to generate the preliminary data required for federal grant applications, while also helping established investigators maintain active laboratories and pursue innovative studies that lead to future funding. NTSBRDF support also benefits the broader UNO research community. This support extends well beyond its direct recipients and elevates the competitiveness of UNO's entire biomedical research enterprise.

Faculty supported through NTSBRDF consistently secure extramural funding, bringing new federal research dollars into Nebraska's economy. As these researchers become self-sustaining through external awards, they transition off NTSBRDF support, allowing funds to be reinvested in new talent and emerging research areas. This reinvestment cycle strengthens the state's scientific workforce, drives innovation, and fuels economic activity.

Continued access to NTSBRDF funding is critical to UNO's long-term research success. Without these resources, the university would face greater challenges in recruiting and retaining exceptional scientists, slowing the growth of Nebraska's biomedical research enterprise. Sustained state support ensures that UNO can continue building a strong pipeline of scientific discovery and innovation, delivering long-term benefits for the health, well-being, and economic vitality of communities across Nebraska.

Investigators receiving NTSBRDF support during 2024-2025

Investigator: Ernest Chivero, PhD
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: $107,106
Potential Funding sources: National Institutes of Health (NIH)

Investigator: Dario Ghersi, M.D., PhD
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: $727,294
Funding sources: National Institutes of Health (NIH)

Investigator: Dongwoo Hahn, PhD
Position, Unit, Department: Assistant Professor, School of Health and Kinesiology
Expertise: Skeletal muscle physiology, mitochondria physiology, muscular dystrophy
External Funding:
Current Funding Total: $10,000 internal grant, Co-PI on a $25,000 NIH-funded grant
Funding sources: UNO internal grant program: University Committee on Research and Creative Activity (UCRCA), National Institutes of Health (NIH)

Investigator: Nathaniel Hunt, PhD
Position, Unit, Department: Associate Professor, Biomechanics
Expertise: Dynamics and Control of Balance and Agility, Augmented Sensorimotor Control, Reducing Falls for Older Adults, Canopy Locomotion Biomechanics, Bioinspired Robotics
External Funding:
Current Funding Total: $1,301,049
Funding sources: National Institutes of Health (NIH), American Society of Biomechanics

Investigator: Majid Jadidi, PhD
Position, Unit, Department: Assistant Professor, Biomechanics
Expertise: Cardiovascular Biomechanics
External Funding:
Current Funding Total: $220,662.45
Funding sources: National Institutes of Health (NIH)

Investigator: Alexey Kamenskiy, PhD
Position, Unit, Department: Professor, Biomechanics
Expertise: Vascular mechanobiology, Mechanophysiology
External Funding:
Current Funding Total: $8,209,531.20
Funding sources: National Institutes of Health (NIH), DOD-Office of Naval Research

Investigator: David S. Li, PhD
Position, Unit, Department: Assistant Professor, Biomechanics
Expertise: Soft tissue biomechanics, Image-based finite element modeling, Machine learning with applications to biomechanical modeling
External Funding:
Potential Funding sources: National Institutes of Health (NIH)

Investigator: Prashanti Manda, PhD
Position, Unit, Department: Associate Professor, Computer Science
Expertise: Bioinformatics, Ontologies, Semantic Similarity, Data Mining
External Funding:
Current Funding Total: $151,677
Funding sources: National Science Foundation (NSF)

Investigator: Song-Young Park, PhD
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: $677,781
Funding sources: National Institures of Health (NIH), Dept of Veterans Affairs

Investigator: Alicia Rich, PhD
Position, Unit, Department: Assistant Professor, Biology
Expertise: Primate physiology and health outcomes; development of molecular biomarkers
External Funding:
Current Funding Total: $37,500
Funding sources: US Fish & Wildlife Service

Investigator: Yury Salkovskiy, PhD
Position, Unit, Department: Assistant Professor, Biomechanics
Expertise: Materials science, cardiovascular materials and devices, personal protective equipment, nanomanufacturing
External Funding:
Current Funding Total: $245,663
Funding sources: National Institures of Health (NIH), National Science Foundation (NSF)

Investigator: Roma Subramanian, PhD
Position, Unit, Department: Associate Professor, School of Communication
Expertise: Health communication
External Funding:
Current Funding Total: $32,120
Funding sources: National Institures of Health (NIH)

Investigator: Denis Svechkarev, PhD
Position, Unit, Department: Assistant Professor, Chemistry
Expertise: Dynamics of soft nanomaterials, drug nanoformulation, fluorescent sensor arrays for rapid diagnostics of bacterial pathogens
External Funding:
Current Funding Total: $149,191
Funding sources: National Institures of Health (NIH), DOD-Dept of Defense

Research Program and Infrastructure Development

In FY25, UNO invested $234,619 in Nebraska Tobacco Settlement Biomedical Research Development Funds (NTSBRDF) to strengthen research programs and expand critical infrastructure that supports the university's growing biomedical research enterprise. These investments ensure that faculty have access to the resources, facilities, and technology needed to sustain competitive research and pursue external funding opportunities.

A significant portion of this investment supported research cores that are foundational to UNO's scientific productivity. This included $63,195 dedicated to the Animal Care and Use Program (ACUP), an AAALAC-accredited facility that provides comprehensive services for faculty, staff, and students conducting research with live vertebrate animals. NTSBRDF resources were used to directly offset essential animal care expenses, including housing supplies, feed, sanitation and enrichment materials, and other critical consumables required to maintain high-quality, compliant animal research facilities. The funds also supported ACUP personnel and a contracted veterinarian consultant - vital to ensuring proper animal care, regulatory compliance, and rapid response to the specialized needs of biomedical research protocols. By supporting these core operational costs, the tobacco settlement funds help maintain a safe, ethical, and fully compliant animal research environment, ultimately enabling faculty to conduct high-quality research and remain competitive for federal funding.

NTSBRDF funds also advanced research capabilities in human physiology and imaging. Support was provided for Dr. Gwenael Layec's research, which has since been successfully funded by the National Institutes of Health (NIH). Tobacco settlement funds contributed to the purchase of a TX-RX coil with proton decoupling capability for a 3T MRI system, enabling advanced musculoskeletal spectroscopy. This equipment not only strengthened the competitiveness of Dr. Layec's NIH R01 application through cost-share support but also expands imaging capabilities accessible to other UNO researchers. Additionally, this upgrade aligns with ongoing enhancements at UNMC's Core for Advanced Magnetic Resonance Imaging (CAMRI), further supporting regional research collaboration.

A major component of FY25 infrastructure and development investment was UNO's support for its newly awarded Center for Biomedical Research Excellence (COBRE), the Center for Cardiovascular Research in Biomechanics (CRiB). ORCA invested $151,824 to assist in launching and expanding this NIH-funded center, demonstrating UNO's institutional commitment to developing high-impact biomedical research programs. This included $48,620 for a pilot project led by Dr. Song-Young Park, titled Leg Exercise Assistive Paddling (LEAP) Therapy for Peripheral Artery Disease.

Tobacco settlement funds also enabled essential equipment purchases for the Tissue Analysis Core (TAC), a central research core within CRiB. TAC provides state-of-the-art capabilities for studying tissue mechanics, evaluating novel therapies, and advancing cardiovascular disease research. As the only facility of its kind in the region, TAC serves as a collaborative hub supporting faculty across UNO, UNMC, and UNL. Services include:

- Mechanical characterization
- Imaging and structural evaluation
- Constitutive modeling of soft tissues
- Prototype development and validation
- Assistance with animal model validation

University of Nebraska at Omaha
Nebraska Tobacco Settlement Biomedical Research Development Fund
FY2025

		FY 2024-2025
Strategic Faculty Recruitment and Retention		
College of Arts and Sciences		
Biology		
Alicia Rich, Ph.D.	$	17,867
Chemistry		
Denis Svechkarev, Ph.D.	$	2,019
Psychology		
Ernest Chivero, Ph.D.	$	1,355
College of Communication, Fine Arts and Media		
Communication		
Roma Subramanian, Ph.D.	$	1,415
College of Education, Health, and Human Sciences		
Biomechanics		
Nathaniel Hunt, Ph.D.	$	6,944
Majid Jadidi, Ph.D.	$	81,296
Alexey Kamenskiy, Ph.D.	$	36,625
David Li, Ph.D.	$	50,000
Yury Salkovskiy, Ph.D.	$	773
Health and Kinesiology		
Dongwoo Hahn, Ph.D.	$	49,791
Song-young Park, Ph.D.	$	11,748
College of Information Science and Technology		
Computer Science		
Prashanti Manda, Ph.D.	$	29,140
Interdisciplinary Informatics		
Dario Ghersi, Ph.D.	$	14,427
Subtotal	**$**	**303,399**
Research Program & Infrastructure Development		
Animal Care and Use Program	$	63,195
Core for Advanced Magnetic Resonance Imaging (CAMRI) Equipment - Dr. Layec	$	19,600
Center for Cardiovascular Research in Biomechanics (CRiB)		
CRiB COBRE Pilot Project - Dr. Park	$	48,620
Tissue Analysis Core (TAC) Equipment	$	103,204
Subtotal	**$**	**234,619**
Total FY 2024-25	**$**	**538,018**

Meet Rick Bevins, PhD

Mildred Francis Thompson University Professor of Psychology and director, Rural Drug Addiction Research Center, University of Nebraska-Lincoln

Investments from tobacco settlement funding: $1,373,276
External funding received since the initial investment: $14,874,410
Return on investment: 11 to 1

Husker psychologist Rick Bevins has devoted his career to investigating the underpinnings of substance use and misuse. His work has led to improved understanding of the nature of addiction – from tobacco to illicit drugs – and information to address issues impacting individuals and their families and communities.

Upon joining the Nebraska faculty in 1996, Bevins established the Behavioral Neuropharmacology Laboratory, which bridges areas of neuroscience, pharmacology, animal learning and behavior, and biopsychology.

Bevins first received tobacco settlement funds in 2007 to build the Substance Abuse Research Cluster's translational capacity, ensuring discoveries reached real-world settings. He received a second seed grant in 2008 to investigate the use of the depression medication bupropion in treating methamphetamine dependence, which peaked across the U.S. in the mid-2000s. A third seed grant in 2009 further boosted the research cluster's translational work.

Since 2012, tobacco settlement funds have provided critical support for UNL's Minority Health Disparities Initiative. Under Bevins' leadership, MHDI provides infrastructure for faculty across multiple departments who conduct innovative research to improve the health of vulnerable populations. Collectively, the group has expanded UNL's health disparities research capacity and prepared the next generation of researchers for addressing communities' needs.

Tobacco settlement fund investments have enabled UNL to compete for, and sustain, Phases 1 and 2 of the Rural Drug Addiction Research Center, established in 2014 as a National Institutes of Health-funded Center of Biomedical Research Excellence. RDAR advances understanding of causes, impacts and interventions related to rural drug use and misuse in the historically understudied Midwest. Although opioids get much of the national attention, methamphetamine is still far more prevalent in the Heartland. Stigma is another factor — it can be more difficult to seek treatment in environments where there is less anonymity.

A major goal of the COBRE Phase 2 award is to collaborate with communities to address their most pressing issues and learn which approaches could be effective to address substance use and misuse. The center works closely with all University of Nebraska campuses, especially the University of Nebraska Medical Center, to increase its reach and impact.

UNIVERSITY OF NEBRASKA-LINCOLN
Nebraska Tobacco Settlement Biomedical Research Development Fund (NTSBRDF)

Year 24: July 1, 2024 – June 30, 2025
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 24 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 2024-2025, UNL invested a total of $2,789,253 from the NTSBRDF, including an allocation of $1,250,170 for six faculty hires; $929,604 to support research programs and infrastructure development; $339,479 for grants to researchers addressing minority health disparities in Nebraska; and $270,000 for five joint NU System research projects.
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 $43,464,822 in external funding in 2024-2025 – 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 2024-2025, UNL invested $1,250,170 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 six faculty members at the assistant and full professor levels. Their research will focus on fundamental and pre-clinical research to understand the basic mechanisms of mental and physical health and disease. These research projects cover a broad range of topics, including the use of state-of-the-art approaches with genomics, genetics, peptidomics and/or computational modeling to understand gene regulatory networks in cell biology, reproduction or immunology; behavior in heritable psychiatric disorders; and development of new drugs to enhance the efficacy of human pharmaceuticals. For example, one faculty member studies the basic mechanisms underlying lymphatic function and immune cell trafficking in health and disease. Another faculty member studies how changes in the genome (e.g., genotype) are connected to specific physical traits (e.g., phenotype) for complex traits such as behavior and heritable human psychiatric disorders. These investments in new faculty hires and the retention of existing faculty resulted in the transfer or acquisition of new external funding totaling $26,075,290 in 2024-2025.

Investigator: Emily Moore, PhD
Position Title & Department: Assistant Professor, School of Biological Sciences
Expertise: Dr. Moore's research uses quantitative genetics to identify the architecture of complex traits; investigate candidate regions with comparative and functional genomics and epigenomics; and quantify changes to relevant tissues with histology and tissue-specific gene expression. The impact of genomic changes on re-patterning of behavior in heritable human psychiatric disorders such as schizophrenia is a related area of research. She also uses computational methods to identify gene regulatory networks that underlie reproductive traits. This work allows changes to the genome (genotype) to be connected to specific physical traits (phenotypes).
External Funding:
Active: $ 784,335
Proposals Pending: $ 0
Funding Source: NSF

Investigator: Sophie Travis, PhD
Position Title & Department: Assistant Professor, Department of Biochemistry
Expertise: Dr. Travis is a cell biologist with interests in understanding how the microtubule cytoskeleton interacts with the cytoplasm to organize the interior of cells. One area of research will use cutting-edge computational techniques and single particle cryo-EM to determine how microtubules organize communities of microtubule-associated proteins (MAPs) to probe the structure of the MAPome. The second area of research will follow an interdisciplinary approach, including biochemical reconstitution and cryo-electron tomography to determine the composition, regulation and structure of the nuclear plaque. This work will yield insights into the function of an essential cellular compartment, the microtubule cytoskeleton, and its roles in establishing cytoplasmic architecture and segregating genetic material, which may lead to new therapeutic approaches to address neglected parasitic tropical diseases.
External Funding:
Active: $ 249,000
Proposals Pending: $ 0
Funding Sources: NIH

Investigator: Tim Gatzenmeier, PhD
Position Title & Department: Assistant Professor, Department of Chemistry
Expertise: Dr. Gatzenmeier's research uses synthetic organic chemistry and medicinal chemistry to expand the chemical space for sulfur-(fluorine) functional groups. This work will lead to viable modifications in modern drug development and enhance efficacies for human pharmaceuticals. Research will also be conducted to mitigate the per- and polyfluoroalkyl substance (PFAS) problem through the use of novel degradation technology and development of safer alternatives to PFAS.
External Funding:
Active: $ 25,172
Proposals Pending: $ 0
Funding Sources: NSF

Investigator: Mohammad Razavi, PhD
Position Title & Department: Assistant Professor, Department of Mechanical and Materials Engineering
Expertise: Research conducted in Dr. Razavi's lab integrates computational modeling, bioengineering and experimental approaches to uncover the mechanisms underlying lymphatic function in health and disease. Specific research is focused on: 1) lymphatic biomechanics to investigate the effects of mechanical forces on lymphatic system function, immune cell trafficking and disease progression; 2) lymphatic tissue engineering to develop biomimetic models and regenerative strategies to restore and enhance lymphatic function; and 3) lymphatic imaging with cutting-edge technologies to visualize and quantify lymphatic pumping dynamics in physiological and pathological states.
External Funding:
Active: $ 0
Proposals Pending: $ 330,372
Funding Sources: NIH

Investigator: Qing Tang, PhD
Position Title & Department: Assistant Professor, Department of Biochemistry
Expertise: Dr. Tang's research takes a multidisciplinary approach that involves cell biology, biophysics, biochemistry, molecular biology, statistics and engineering to understand how the cytoskeleton is precisely regulated to accomplish essential activities in mammalian cells at the molecular scale and in real time. Quantitative super-resolution microscopy, single-molecule tracking, genetic and molecular tools are used to uncover how discrete biochemical activities are deployed in living cells. These studies will generate new information to understand the molecular mechanisms of dysregulation of the cytoskeleton in driving disease.
External Funding:

Active: $ 2,216,688
Proposals Pending: $ 0
Funding Sources: NIH

Investigator: Aron Barbey, PhD
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: $ 1,512,459
Proposals Pending: $ 0
Funding Source: Associations/Foundations, Industry, Defense

Research Program and Infrastructure Development

Introduction: In 2024-2025, a total of $929,604 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 $31,185,429 in new external funding in 2024-2025. Areas of investment include basic and preclinical research to understand mechanisms associated with obesity; aging and wound healing; virology and vaccine development; neuroscience, cognition, psychological well being and neurodegenerative diseases; and development of new bioactive molecules with activities to combat infection, inflammation, or cancer. Investments in research infrastructure were made to purchase cutting-edge brain imaging equipment to enhance resolution and image quality to study brain biology, cognition and neurodegenerative diseases. Equipment was also purchased to rapidly optimize and scale up formulation and production of lipid nanoparticles for delivery of small molecules into biological systems to test potential therapeutic drugs. Many of these 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 research teams.

Project Title: MAGNETOM Cima.X 3T MRI Instrumentation
Principal Investigator: Aron Barbey, PhD
Description: The Center for Brain, Biology and Behavior (CB3) is a leading research center committed to making a meaningful impact on human health and society through innovation in neuroscience. At the heart of CB3 lies a cutting-edge brain imaging facility and specialized laboratories to foster innovation through interdisciplinary research in neuroscience. Investments were made to replace the existing brain imaging equipment (e.g., MRI) with new, state-of-the-art MAGNETOM Cima.X 3T MRI Instrumentation. This work involved removal of the old MRI equipment, design and construction to renovate space for the new Cima.X, and moving/relocation of the old equipment. The new Cima.X provides increased resolution (by removing background noise) and improved image quality while also requiring shorter amounts of time for scans. UNL is only the eighth facility in the USA to have this state-of-the-art imaging equipment. The Cima.X will be used for functional and diffusion imaging in people with traumatic brain injuries; measuring tissue stiffness that is seen during liver fibrosis; and evaluation of cognition (e.g., functional and dysfunctional processes related to interpreting facial expressions) or neurodegenerative diseases (e.g., Alzheimer's disease or other forms of dementia).

Project Title: Center for Brain, Biology and Behavior Neuroimaging and Salivary Bioscience Research
Principal Investigator: Aron Barbey, PhD
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: Nebraska Center for Virology
Principal Investigator: Eric Weaver, PhD
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: Predicting the Failure to Develop a More Positive Valence Bias: A Cognitive and Network Neuroscience Approach
Principal Investigator: Maital Neta, PhD
Description: Dr. Neta studies the functional and dysfunctional processes related to interpreting ambiguous facial expressions. She recently completed data collection from nearly 500 participants over the life span (ages 6-90 years). The next phase of this research will follow these participants over time to better understand the longitudinal trajectories associated with psychological well-being (e.g., risk for developing internalizing disorders and Alzheimer's or related dementia) and healthy aging. Additional studies with children will also study the parents and the family context. In aging participants, caregivers will be studied to explore social and environmental impacts on well-being. Grant applications were submitted to NIH and NSF and are pending funding decisions.

Project Title: Testing EV-Derived Satiety Signals from Hibernating Mammals to Combat Obesity
Principal Investigator: Ivan Vechetti, PhD, and Matt Andrews, PhD
Description: Studies will be conducted to test the hypothesis that in hibernating mammals at the end of the summer feeding season, extracellular vesicles containing miRNA will be released from white adipose tissue and taken up by neurons in the hypothalamus that regulate satiety. A second hypothesis will be tested to determine if extracellular vesicles derived from white adipose tissue in hibernating mammals have the potential to regulate satiety and body weight in mice undergoing high fat, diet-induced obesity. These experiments will provide evidence to support the role that extracellular vesicles derived from white adipose tissue play in regulation of satiety and will demonstrate that this mechanism can be used to prevent fat gain in mice fed high fat diets to induce obesity. These preliminary data will support a future federal grant application to rigorously examine these mechanisms to combat obesity.

Project Title: Sunshine System Instrumentation
Principal Investigator: Daniel Schachtman, PhD
Description: The Sunshine System by Unchained Labs is a tool for rapidly optimizing and scaling up lipid nanoparticle formulations. Its primary function is to automate the process of screening different lipid nanoparticle formulations to find the ideal conditions, then seamlessly switching to continuous production mode to create larger quantities of the optimized nanoparticles. The system is fully automated and scalable, with a range of microfluidic chips that allow users to optimize flow rates, lipid-to-payload ratios and mixing methods. These lipid nanoparticles will be used to package small molecules such as DNA and RNA for ultimate delivery into biological systems to test potential therapeutic drugs.

Project Title: Expanding the Circle – New and Enhanced Functionality of Cyclic Lipodepsipeptide Antibiotics through Adenylation Domain Engineering
Principal Investigator: Wei Niu, PhD, and Liangcheng Du, Ph.D
Description: The long-term goal of this project is to develop a novel drug discovery platform with a unique class of bioactive molecules called nonribosomal peptides. The platform will focus on efficient screening, production and mechanistic studies to determine the activities of these molecules against bacteria, fungi, viruses, inflammation and cancer. The team recently isolated three families of cyclic lipodepsipeptides from a group of underexplored bacteria. The next phase of this research will synthesize, characterize and use cyclic lipodepsipeptides containing amino acids with noncanonical sidechains to evaluate their antimicrobial properties, mechanisms of action and potential cytotoxicity. The primary conceptual innovation of the proposed studies is to further functionalize natural nonribosomal peptides by introducing amino acids with noncanonical functional groups. The key technological innovation combines computational designs with a novel high-throughput, growth-coupled selection method for enzyme-directed evolution.

Project Title: Platynereis Cell-Cell Signaling Peptides in Regeneration and Development
Principal Investigator: James Checco, PhD
Description: The goal of this project is to investigate the mechanisms by which allatotropin-related peptides (ATRP) control regeneration, growth and development in Platynereis (a segmented annelid or worm). Studies will be conducted using proteomics to thoroughly catalog the full complement of Platynereis ATRP; investigate the roles of ATRP ligands in cell-based signaling assays; determine if ATRP ligands exist as multiple diastereomers; and determine if the ATRP receptors show stereoselectivity. The major outcome of this research will be a comprehensive understanding of the ATRP signaling system in Platynereis, which is known to lose the ability to regenerate after reaching sexual maturation when the neurohormonal states shift dramatically. Understanding how Platynereis uses ATRP signaling molecules to promote regeneration in young stages while losing this ability as it ages will provide new insights into regeneration in the context of age and may provide inspiration for future therapeutics in wound healing and regenerative medicine.

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 biomedical research funding.

Minority Health Research Grants

Introduction: A total of $339,479 was invested in projects to address the mental and physical health needs of underserved populations in Nebraska and the Great Plains region and across the U.S. These projects support basic and applied research through the Minority Health Disparities Initiative at UNL and the Wahwala Iyohlogya (Peaceful Means) Sexual Violence Prevention Center on the Pine Ridge Reservation in Nebraska and South Dakota. These projects use interdisciplinary teams and community-based participatory action to conduct research, implement practices and train the future workforce to better understand and improve the health outcomes of underserved populations in Nebraska and the region.

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, PhD
Description:
A multistakeholder collaboration, inclusive of community partners and scientists with experience in prevention/intervention work, established an Indigenous-led sexual violence prevention center on the Pine Ridge Reservation. With approval from the Oglala Sioux Tribe the IMpower United's evidence-based gender transformative sexual violence prevention program was implemented in more than 20 K-12 schools on Pine Ridge in the Fall of 2023. In addition, Indigenous IMpower instructors were hired, housed at Peaceful Means (the Wahwala Iyohlogya Sexual Violence Prevention Center at Pine Ridge) and trained by UNL faculty to deliver IMpower programs to approximately 250 out-of-school, high-school age students (largely Lakota). To reduce barriers to participation, on-site daycare was provided for out-of-school youth who are parents and UNL certified drivers provided transportation for out- of-school students to the Peaceful Means Center at Pine Ridge

Project Title: Minority Health Disparities Initiative
Principal Investigators: Rick Bevins, PhD, and Arthur (Trey) Andrews III, PhD
Description: Since its inception, the Minority Health Disparities Initiative (MHDI) has grown into a vital resource for faculty conducting research, while at the same time producing a significant economic return in the form of extramural funding. Moreover, MHDI has become a research hub and provides an important sense of community for students, researchers, practitioners, community members, government agencies and non-profit organizations with the unifying goal of studying and eventually decreasing and ameliorating health disparities in Nebraska and beyond. Throughout the year, MHDI sponsors several important mission-specific functions and provides essential 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 mentoring for new and veteran faculty and project planning 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 NU system, a total of $270,000 in NTSBRDF funds were used to support five projects from teams that include UNL and other NU System researchers.

Project Title: The Gut Microbiome as a Factor in the Progression and Severity of Cardiomyopathy
Principal Investigator: Amanda Ramer-Tait, PhD
Description: This project involves an established, synergistic and interdisciplinary collaboration between Dr. Amanda Ramer-Tait (UNL), with expertise in gut microbiology and mouse models of chronic diseases, and Drs. Hesham Basma and Brian Lowes (UNMC), with expertise in cardiology. Heart disease is the leading cause of death in Nebraska according to the CDC. The overarching hypothesis for these studies is that the gut microbiome and its products regulate progression and severity of dilated cardiomyopathy (DCM), which is a significant cause of heart failure. Two pre-clinical studies will be conducted to test this hypothesis. The aim of the first study is to determine the causative contribution of the gut microbiome to the progression and severity of genetically predisposed DCM. The aim of the second study is to assess the ability of intestinal microbial products to regulate human cardiomyocyte gene expression profiles and functions. Results of these studies will determine if the gut microbiome plays a causative role in the progression and severity of DCM and will provide mechanistic data regarding the influence of microbial products from an altered gut microbiome on cardiomyocyte function.

Project Title: Interdisciplinary Center for Women's Health Research Planning Grant
Principal Investigator: Andrea Cupp, PhD
Description: The goal of this project is to support planning and team-building activities with UNL and UNMC faculty while they prepare an application for an NIH Center of Biomedical Research Excellence (COBRE) Phase 1 grant (NIH P20 mechanism). The purpose of this COBRE Phase 1 application is to build capacity in women's health research through establishment of a center of excellence in women's health research that helps develop a critical mass of investigators (new investigators and/or early stage investigators) who are able to compete effectively for independent research funding and improve infrastructure in this area of research. Dr. Andrea Cupp (UNL) serves as the Principal Investigator (PI), and Dr. John Davis (UNMC) serves as the Co-PI on the application. Three research project leaders (RPLs) from UNL and two RPLs from UNMC are part of the team. Team-building activities include two in-person retreats to develop research collaborations and plans for shared research core facilities. Additional planning activities include work with an architect to prepare plans and cost estimates to renovate space in the UNL Animal Science Building to house a new research core facility to support tissue culture.

Project Title: Therapeutic Efficacy of Dietary Palmitoleate Supplementation to Mitigate Maternal Oxycodone Induced Placenta and Fetal Brain Damage
Principal Investigator: Sathish Kumar Natarajan, PhD
Description: The overarching hypothesis of these studies is that maternal in utero exposure to oxycodone induces endoplasmic reticulum stress, inflammation and apoptosis, thereby aggravating fetal brain injury. Dr. Natarajan further hypothesizes that these changes can be mitigated by dietary supplementation of palmitoleate to correct the pathophysiology. In addition, the current knowledge gap in addressing molecular mechanisms at the interface of placenta and fetus crosstalk contributes to exacerbating neurodevelopmental outcomes in offspring exposed to oxycodone in utero. To fill these knowledge gaps, the first aim will be to identify molecular regulators that control crosstalk at the placenta and fetal brain interface. The second aim will be to test the therapeutic efficacy of dietary palmitoleate's ability to alleviate in utero oxycodone-induced placental and fetal deficits.

Project Title: Understanding Transportation Barriers to Substance Use Disorder Treatment and Enhancing Access in Rural Nebraska
Principal Investigator: Abigail Cochran, PhD
Description: This project uses an innovative, mixed-methods approach to analyze spatiotemporal accessibility and transportation barriers to treatment for substance use disorder in people living in rural Nebraska. The first aim is to perform a GIS-based comprehensive spatiotemporal analysis to quantify access to substance use disorder treatment via private vehicles and public transit, including fixed-route transit and demand-response transit services, which are especially important for rural settings. The second aim is to gain insight directly from practitioners (substance use providers, care coordinators and community health workers) involved in treatment of substance use disorders. Semi-structured interviews will be used to capture qualititative data to enhance our understanding of transportation barriers faced by individuals seeking treatment in rural Nebraska. Results of these studies will inform policy, planning and practice (targeted interventions and programs) that address transportation barriers to treatment, promote access to care, and improve health outcomes for individuals with substance use disorder living in rural Nebraska and beyond.

Project Title: Overcoming Barriers to Implementation of Integrated Primary/Physical Health Care Screenings and Referrals into Rural and Urban Behavioral Health Contexts
Principal Investigator: Lisa Pytlik Zillig, PhD
Description: This project supports collaborative studies between Dr. Pytlik Zillig (UNL) and faculty in the Great Plains-IDeA-Center for Translational Research at UNMC. The over-arching goal is to build capacity among a newly formed research-practice partnership to create solutions that speed the update of integrated care components among Certified Community Behavioral Health Centers (CCBHCs) across rural and urban Nebraska, enhancing efficiency for providers and offering opportunities for Nebraskans to access more comprehensive mental and physical healthcare. The overall objective of this project is to measure the impact of the fidelity of implementation of integrated care components in rural and urban CCBHCs on patient outcomes and gain an understanding of the barriers faced by facilitators in implementing integrated care components. An exploratory aim will be conducted to collect information on the economic impact of implementing integrated care components in rural and urban CCBHCs. Results from these studies will be used to develop new ways to increase integrated care in new contexts and to seek additional funding from the NIH to test how well those strategies work.

University of Nebraska-Lincoln

Nebraska Tobacco Settlement Biomedical Research Development Fund

FY 2024-2025 Allocation

Strategic Faculty Recruitment and Retention	**Allocation**
Emily Moore, Ph.D., School of Biological Sciences	255,785
Sophie Travis, Ph.D., Biochemistry	312,500
Tim Gatzenmeier, Ph.D., Chemistry	248,750
Mohammad Razavi, Ph.D., Mechanical & Materials Engineering	182,456
Qing Tang, Ph.D., Biochemistry	172,852
Aron Barbey, Ph.D., Psychology and the Center for Brain, Biology and Behavior	77,827
Subtotal	$ 1,250,170
Research Program and Infrastructure Development	
MAGNETOM Cima.X 3T MRI Instrumentation - Aron Barbey, Ph.D.	350,000
Center for Brain, Biology and Behavior Neuroimaging - Aron Barbey, Ph.D.	306,169
Nebraska Center for Virology - Eric Weaver, Ph.D.	81,323
Predicting the Failure to Develop a More Positive Valence Bias: A Cognitive and Network Neuroscience Approach - Maital Neta, Ph.D.	55,962
Testing EV-Derived Satiety Signals from Hibernating Mammals to Combat Obesity - Ivan Vechetti Ph.D. & Matt Andrews Ph.D.	50,000
Sunshine System Instrumentation - Daniel Schachtman, Ph.D.	29,504
Expanding the Circle – New and Enhanced Functionality of Cyclic Lipodepsipeptide Antibiotics through Adenylation Domain Engineering - Wei Niu, Ph.D. & Liangcheng Du Ph.D.	25,000
Platynereis cell-cell signaling peptides in regeneration and development - James Checco, Ph.D.	25,000
Faculty Development in Biomedical Sciences	6,646
Subtotal	$ 929,604
Minority Health Research Grants	
Establishment and Evaluation of an Indigenous-led Center to Prevent Sexual Violence among Indigenous Youth across the U.S. - Katie Edwards, Ph.D.	141,341
Minority Health Research Initiative - Rick Bevins, Ph.D. & Trey Andrews, Ph.D.	198,138
Subtotal	$ 339,479
Joint UNL-UNMC Research Programs	
The Gut Microbiome as a Factor in the Progression and Severity of Cardiomyopathy - Amanda Ramer-Tait, Ph.D.	100,000
Interdisciplinary Center for Women's Health Research Planning Grant - Andrea Cupp, Ph.D.	100,000
Therapeutic Efficacy of Dietary Palmitoleate Supplementation to Mitigate Maternal Oxycodone Induced Placenta and Fetal Brain Damage - Sathish Kumar Natarajan, Ph.D.	25,000
Understanding Transportation Barriers to Substance Use Disorder Treatment and Enhancing Access in Rural Nebraska - Abigail Cochran, Ph.D.	25,000
Overcoming Barriers to Implementation of Integrated Primary/Physical Health Care Screenings and Referrals into Rural and Urban Behavioral Health Contexts - Lisa Pytlik Zillig, Ph.D.	20,000
Subtotal	$ 270,000
Total FY 2024-2025 Allocation	$ 2,789,253

UNIVERSITY OF NEBRASKA AT KEARNEY
Nebraska Tobacco Settlement Biomedical Research Development Fund (NTSBRDF)

Year 24: July 1, 2024 – June 30, 2025
Progress Report

Executive Summary

UNK's use of the NTSBRDF program for the 2024-2025 FY was primarily to partially fund continuing startup costs for two Biology Department faculty members and to fund an NIH-focused writing workshop for UNK faculty conducting biomedical related research. A total of $20,967.53 was allocated toward Strategic Faculty Recruitment and Retention, while an additional $52,745.57 was allocated to Research program and infrastructure development

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

Research Program and Infrastructure Development

Funds totaling $1,523.79 were used to subsidize the INSpRE instrumentation core at UNK specifically toward those pieces of equipment supporting biomedical research. Another $51.2k of funding supported an NIH-focused grant writing workshop conducted by the RDAR center at UNL. This workshop is conducted every other summer. A previous iteration in FY21 had a 23-fold ROI with 1.2 million in NIH funding garnered from the roughly $50k investment.

Strategic Faculty Recruitment and Retention

Two faculty members, hired in FY24, receieved 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. The small allocation to Dr. Lu finished a commitment from the prior fiscal year that was unspent.

Name	Dept & Expertise	Title/Description
Johnson, Catherine, PhD	Biology, New Faculty Expertise, Cancer Biology	Research Start-up, $19,994.09
Lu, Haiwei, PhD	Biology, New Faculty Expertise: Plant Biology	Research Start-up, $1023.44 Funding Sources: American Society of Plant Biologists, NIH INBRE (applied)

University of Nebraska at Kearney
Nebraska Tobacco Settlement Biomedical Research Development Fund
FY 2024-2025 Allocation

Strategic Faculty Recruitment and Retention		
Haiwei Lu, PhD, Biology		$ 1,023.44
Catherine Johnson, PhD, Biology		$19,944.09
	Subtotal	**$20,967.53**
Research program and infrastructure development		
INSpRE Core Support		$ 1,523.79
Biomedical Research Grant Writing Workshop		
(Finalizing from FY23, grant submission stipend)		$ 1,000.00
New workshop, Summer 2025		$50,221.78
	Subtotal	**$52,745.57**
TOTAL EXPENDED		**$72,305.27**
Includes workshop stipend/salaries encumbered to FY26 (Summer 2025)		$21,198.55
TOTAL FY 24 Allocation		**$71,999.00**
Unused Carry forward funds from FY 24		$ 306.20
	TOTAL FY 25 Available Funds	**$72,305.27**

Creighton UNIVERSITY

Meet Allison Coffin, PhD

Initial investment from tobacco settlement funding: $105,000
Current portfolio: $1.45M (multi-year award - R01 and major subcontract on STTR, both from the NIDCD, NIH)
Return on investment: ~14:1

Allison Coffin, PhD, was recruited to Creighton in 2024 after 13 years at Washington State University in Vancouver, WA. Dr. Coffin serves as an Associate Professor of Biomedical Sciences in the School of Medicine.

Support from the tobacco settlement was central to her recruitment and allowed Creighton to bring her $1.3 million National Institutes of Health (NIH) R01 grant to campus. The award funds her work on how certain medications may damage hearing.

Dozens of new medications enter clinical trials each year to treat infectious diseases such as influenza and the inflammatory conditions that follow. But these drugs are rarely evaluated for their potential to harm hearing. Coffin's team is studying whether specific drug regimens are linked to mild but meaningful changes in hearing. "Ultimately, it is about developing safer medications," she says.

Coffin is the new Associate Director within the Dr. Richard J. Bellucci Translational Hearing Center, a collaborative hub that brings together researchers across Creighton, Boys Town National Research Hospital, and the University of Nebraska Medical Center. The Center focuses on preserving and restoring hearing through drug development, cochlear hair cell regeneration, gene therapy, and studies of central auditory pathway diseases, while also training the next generation of hearing researchers.

Coffin is building her research group at Creighton, which currently includes a technician, five graduate students, and four undergraduate students.

Coffin's recruitment shows how tobacco settlement funds help attract top talent, build research capacity, and strengthen scientific infrastructure in our state.

CREIGHTON UNIVERSITY
Nebraska Tobacco Settlement Biomedical Research Development Fund (NTSBRDF)

Year 24: July 1, 2024 – June 30, 2025
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 2024-2025, the collective efforts of the research investigators at Creighton University produced significant results. Creighton University received $25.2 million in extramural research awards and sponsored projects. Investigators were awarded federal grants from the Department of Defense, the National Institutes of Health, and the Center for Disease Control, 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 & Retention

Introduction: A total of $692,972 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 $3,424,568 during this reporting period. These new awards are from agencies such as the National Institutes of Health, National Science Foundation, 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: $299,488
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: $233,696
Funding Sources: NE-DHHS, NIH

Investigator: Marisa Zallocchi, PhD
Position Title & Department: Assistant Clinical Professor, School of Medicine, Department of Biomedical Sciences
External Funding:
Current Year Funding Total: $882,357
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: $293,059
Funding Sources: NE-DHHS, NIH, Hearing Health Foundation

Investigator: Xia, Jun, PhD
Position Title & Department: Assistant Professor, School of Medicine, Department of Biomedical Sciences
External Funding:
Current Year Funding Total: $362,766
Funding Sources: NE-DHHS, NIH

Investigator: Webber, Jemma, PhD
Position Title & Department: Assistant Professor, School of Medicine, Department of Biomedical Sciences
External Funding:
Current Year Funding Total: $205,601
Funding Sources: NE-DHHS, NIH

Investigator: Coffin, Allison, PhD
Position Title & Department: Associate Professor, School of Medicine, Department of Biomedical Sciences
External Funding:
Current Year Funding Total: $546,301
Funding Sources: NE-DHHS, NIH

Investigator: Anbuhl, Kelsey, PhD
Position Title & Department: Assistant Professor, School of Medicine, Department of Biomedical Sciences
External Funding:
Current Year Funding Total: $299,000
Funding Sources: NE-DHHS, NIH

Investigator: Hong, Hui, PhD
Position Title & Department: Assistant Professor, School of Medicine, Department of Biomedical Sciences
External Funding:
Current Year Funding Total: $100,000
Funding Sources: NE-DHHS

Investigator: Long, Makenzie, PhD
Position Title & Department: Assistant Professor, College of Arts & Sciences, Department of Chemistry and Biochemistry
External Funding:
Current Year Funding Total: $202,300
Funding Sources: NE-DHHS, NSF

Research Program and Infrastructure Development

A total of $1,977,130 was invested in research program and infrastructure development in 2024-2025 in a wide variety of topics, including 1) Assessment of the startReact Methodology Post Stroke, 2) Improving the Cardiac Transplant Window: Treatments Derived from Hibernators, 3) The Role of Oxidative Stress in Cognitive Impairment Associated with Epilepsy and 4) The Feasibility & Preliminary Outcomes of Psychologically Informed Physical Therapy Intervention in Individuals with Patellofemoral Pain. 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: $602,128
Funding Sources: NE-DHHS, NIH,

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: $468,522
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: Associate Vice Provost Research Lab Personnel Support
External Funding:
Current Year Funding Total: $359,591
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: $500,000
Funding Sources: NE-DHHS

Investigator: Robert Dunlay, PhD
Position Title & Department: Dean, School of Medicine
Project Title: School of Medicine Research Support
External Funding:
Current Year Funding Total: $0
Funding Sources: NE-DHHS

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: $359,591
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: $1,000
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: National Institute of Antimicrobial Resistance Research and Education Institutional Membership
External Funding:
Current Year Funding Total: $359,591
Funding Sources: NE-DHHS, NIH

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: $269,068
Funding Sources: NE-DHHS, NSF

Investigator: Rashelle Hoffman, PhD
Position Title & Department: Assistant Professor, School of Pharmacy & Health Professions, Department of Physical Therapy
Project Title: Bridge Funding
External Funding:
Current Year Funding Total: $32,138
Funding Sources: NE-DHHS, Nebraska Foundation for Physical Therapy, Foundation for Physical Therapy Research

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: $0
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: $323,474
Funding Sources: NE-DHHS, NIH

Investigator: Janee Gelineau-van Waes, PhD
Position Title & Department: Associate Professor, School of Medicine, Department of Pharmacology & Neuroscience
Project Title: Establishing a Central Role for the Calcium-Sensing Receptor (CaSR) in Mediating Adverse Off-target Effects of Dolutegravir
External Funding:
Current Year Funding Total: $76,296
Funding Sources: NE-DHHS

Investigator: Rosalind Heckman, PhD
Position Title & Department: Assistant Professor, School of Pharmacy & Health Professions, Department of Physical Therapy
Project Title: Assessment of the startReact Methodology Post Stroke
External Funding:
Current Year Funding Total: $451,656
Funding Sources: NE-DHHS, NIH, Health Science Strategic Investment Fund

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: INBRE Program Research Support
External Funding:
Current Year Funding Total: $359,591
Funding Sources: NE-DHHS, NIH

Investigator: Ashley Fricks-Gleason, PhD
Position Title & Department: Director, Center for Undergraduate Research and Scholarship (CURAS)
Project Title: Center for Undergraduate Research & Scholarship Support
External Funding:
Current Year Funding Total: $50,000
Funding Sources: NE-DHHS

Investigator: Abbis Jaffri, PhD
Position Title & Department: Assistant Professor, School of Pharmacy & Health Professions, Department of Physical Therapy
Project Title: The Feasibility & Preliminary Outcomes of Psychologically Informed Physical Therapy Intervention in Individuals with Patellofemoral Pain
External Funding:
Current Year Funding Total: $105,000
Funding Sources: NE-DHHS, CURAS Magis Investigatio Research Award/MIRA

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 $228,748.42 was awarded in 2024-2025 for minority health research.

Investigator: Sade Kosoko-Lasaki, MD
Position Title & Department: Professor, School of Medicine, Department of Surgery
Expertise: Center for Promoting Health and Health Equality (CPHHE)
External Funding:
Current Year Funding Total: $1,127,259
Funding Sources: NE-DHHS, CDC

Creighton University

Nebraska Tobacco Settlement Biomedical Research Development Fund

Allocation for Period July 1, 2024 -June 30, 2025

Strategic Faculty Recruitment and Retention:		Allocation
Kashyap, Sudhanva	School of Medicine New Faculty Start-up	53,808.46
Renauld, Justine	School of Medicine New Faculty Start-up	5,093.27
Zallocchi, Marisa	School of Medicine New Faculty Start-up	132,123.03
Tao, Litao	School of Medicine New Faculty Start-up	103,879.71
Xia, Jun	School of Medicine New Faculty Start-up	105,889.09
Webber, Jemma	School of Medicine New Faculty Start-up	92,912.88
Coffin, Allison	School of Medicine New Faculty Start-up	105,257.50
Anbuhl, Kelsey	School of Medicine New Faculty Start-up	44,509.35
Hong, Hui	School of Medicine New Faculty Start-up	24,498.76
Long, Makenzie	College of Arts & Sciences Exercise Science New Faculty Start-up	24,999.99
		692,972.04

Research Program and Infrastructure Development:		
Bartz, Jason	School of Medicine Assoc Dean Research Lab Personnel Support	114,987.64
Hansen, Laura	School of Medicine Assoc Dean Research Lab Personnel Support	111,072.48
Srauss-Soukup, Julie	Associate Vice Provost Research Lab Personnel Support	75,969.67
Knezetic, Joseph	Research Compliance Regulatory Support	463,651.08
Dunlay, Robert	School of Medicine Research Support	596,658.73
Wymer Rebecca	Biomedical Journal Support	50,000.00
Strauss-Soukup, Julie	LB692 New Initiative Grant Compeition Reviewers	7,500.00
Sanchez, Sonia	Research Mentoring Workshop	658.56
Strauss-Soukup, Julie	National Institute of Antimicrobial Resistance Research & Education Institutional Membership	2,500.00
Wrubel, Jonathan	National Science Foundation Grant Matching Funds	75,342.29
Hoffman, Rashelle	Bridge Funds	17,445.78
Bredahl, Eric	Improving the Cardiac Transplant Window: Treatments Derived from Hibernators	31,854.97
Simeone, Timothy	The Role of Oxidative Stress in Cognitive Impairment Associated with Epilepsy	39,551.85
Gelineau-van Waes, Janee	Establishing a Central Role for the Calcium-Sensing Receptor (CaSR) in Mediating Adverse Off-target Effects of Dolutegravir	72,837.69
Heckman, Rosalind	Assessment of the startReact Methodology Post Stroke	63,352.00
Strauss-Soukup, Julie	INBRE Program Research Support	155,690.51
Fricks-Gleason, Ashley	Center for Undergraduate Research & Scholarship Support	45,846.19
Jaffri, Abbis	The Feasibility & Preliminary Outcomes of Psychologically Informed Physical Therapy Intervention in Individuals with Patellofemoral Pain	52,211.09
		1,977,130.53

Minority Health Research Grants		
Kosoko-Lasaki, Sade	Center for Promoting Health and Health Equality	228,748.42
		228,748.42

Allocation for Period July 1, 2024 - June 30, 2025	**2,898,850.99**

BOYS TOWN National Research Hospital

Meet Justin Keuser, PhD

From First Words to Brighter Futures

Initial investment from tobacco settlement funding: $250,000
Current portfolio: $3M (two multi-year NIH awards)
Return on investment: ~11:1

Every parent looks forward to their baby's first word. Before long, those babbles turn into dinner table conversations. But for some kids, first words and phrases take longer to come. These "late talkers" may simply catch up with their peers — but some may have a lifelong condition called developmental language disorder (DLD). That means their brains have a harder time learning and using language. "Few people know what DLD is, even though it's much more common than autism," said Justin Kueser, PhD, CCC-SLP, Director of the Emerging Language Knowledge (ELK) Laboratory at Boys Town National Research Hospital.

DLD can affect how kids do in school, whether they struggle with mental health and even what jobs they choose later in life. Dr. Kueser is studying late talkers and DLD to find better ways to support children's language skills. The goal is to help them succeed.

Parents usually find out that their child is a late talker at around 18 to 24 months of age, when the child isn't saying many words or putting together short phrases. Right now, there's no way to predict which kids will catch up and which will need more support — or exactly how to help them. That's why Dr. Kueser's research is so important.

His advice to parents who are concerned about a child who may be a late talker? Speak up.

"Don't be hesitant or fearful that you're overreacting," Dr. Kueser said. "Bringing this kind of stuff up during your well child visits with your pediatrician is a great first step."

— Dr. Justin Keuser

If you're interested in learning more about participating in Dr. Kueser's study, scan the QR code or click this link.

https://redcap.link/ELK_lab_study

BOYS TOWN NATIONAL RESEARCH HOSPITAL
Nebraska Tobacco Settlement Biomedical Research Development Fund (NTSBRDF)

Year 24: July 1, 2024 – June 30, 2025
Progress Report

Executive Summary

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: $ 18,527
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: $ 5,335
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: $ 2,316
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: Senior Director, Director Human Auditory Development Laboratory
Expertise: Pediatric hearing loss and diagnosis and management of hearing loss in people with Down Syndrome
Allocation: $ 2,519
Description of Goals and Accomplishments: Dr. Leibold is launching a new research project that involves using the Boys Town Research Vehicle to collect research data from participants in rural areas outside of Omaha.

Investigator: Giorgia Picci, PhD
Position Title & Department: Director of the Cognitive Affective Neurodevelopment in Youth Laboratory, Institute for Human Neuroscience
Expertise: Effects of traumatic childhood experiences on cognitive and neural development; Autism.
Allocation: $ 8,184
Description of Goals and Accomplishments: Funds are being provided for a pilot project to examine changes in autism spectrum disorder symptoms that occur during adolescence.

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: $ 21,044
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: $ 87,949
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: $ 63,209
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: Tiana Cowan, PhD
Position Title & Department: Scientist I, Center for Childhood Deafness, Language, and Learning
Allocation: $ 68,311
Description of Goals and Accomplishments: Dr. Cowan established a laboratory in August 2024. Funds are being provided to collect pilot data for federal funding applications to examine language development in children who are bilingual.

Investigator: Zhao Ellen Peng, PhD
Position Title & Department: Director of the Functional Hearing Laboratory
Allocation: $ 93,922
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: $ 132,089
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: $ 60,134
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: $ 21,947
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: Rachel Spooner, PhD
Position Title & Department: Scientist I, Director of the Translational Motor Imaging Institute for Human Neuroscience
Allocation: $ 45,277
Description of Goals and Accomplishments: Funds are being used to provide start-up for Dr. Spooner's laboratory for projects related to improving outcomes for people with motor disorders.

Investigator: Justin Kueser, PhD
Position Title & Department: Scientist I, Center for Childhood Deafness, Language, and Learning
Allocation: $ 108,934
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: $ 111,134
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: $ 25,879
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: $ 5,646
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: $ 147,467
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: $ 71,137
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: New Projects Fund
Principal Investigator: Lori Leibold, PhD
Amount of Funding: $ 9,643
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: $ 6,668
Description of Goals and Accomplishments: There are opportunities to share participant recruitment for research across laboratories. Recruitment funds share participant costs across labs and multiple projects to increase participation in research studies.

Project Title: Animal Care Facility Core
Principal Investigator: Barbara Morley, PhD
Amount of Funding: $ 30,406
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: $ 89,190
Description of Goals and Accomplishments: Supplemental funding is provided to the BTNRH postdoctoral training program to assist with training and recruitment costs for post-doctoral fellows.

Project Title: CCDLL Research Development Fund
Principal Investigator: Lisa Goffman, PhD
Amount of Funding: $ 13,146
Description of Goals and Accomplishments: Funding is provided as a research development fund for Senior Scientist, Dr. Lisa Goffman, to further develop her cutting-edge research on the relationship between language and motor development.

Project Title: Visiting Scientist
Principal Investigator: Ryan McCreery, PhD
Amount of Funding: $ 2,845
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: $ 35,061
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: Krystal Werfel, PhD
Amount of Funding: $ 82,982
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: $ 28,475
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: DEI Project: Language Diversity
Investigator: Krystal Werfel, PhD
Amount of Funding: $ 4,124
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

FY 2024-2025 Allocation for period:		July 1, 2024 - May 2025 Allocation	June 2025 Allocation	Cumulative July 1 2024 June 2025 Allocation
Strategic Faculty Recruitment and Retention				
Barbara Morley, PhD, Center for Hearing Research		$ 17,455.93	$ 1,071.16	$ 18,527.
Kristen Janky, PhD, Center for Hearing Research		$ 5,335.00	$ -	$ 5,335.
Monita Chatterjee, PhD, Aud Prostheses & Perception Lab		$ 1,967.00	$ 349.00	$ 2,316.
Lori Leibold, Ph.D., Center for Hearing Research		$ 2,518.69	$ -	$ 2,518.
Giorgia Picci, PhD, Center for Human Neuroscience		$ 6,571.65	$ 1,612.50	$ 8,184.
Katie Gordon, PhD, Center for Childhood Deafness		$ 13,708.07	$ 7,335.56	$ 21,043.
Kaylah Lalonde, PhD, Center for Hearing Research		$ 80,131.16	$ 7,818.24	$ 87,949.
Hope S. Lancaster, PhD, Center of Childhood Deafness		$ 58,290.11	$ 4,918.55	$ 63,208.
Tiana Cowan, PhD, Center for Childhood Deafness		$ 59,528.17	$ 8,782.59	$ 68,310.
Zhao Ellen Peng, PhD, Center for Hearing Research		$ 87,796.55	$ 6,125.58	$ 93,922.
Krystal Werfel, Ph.D., Center for Childhood Deafness		$ 118,767.13	$ 13,322.24	$ 132,089.
Kathryn Wiseman, PhD, Center for Hearing Research		$ 51,366.06	$ 8,767.92	$ 60,133.
Appolinaire Olou, PhD, Center for Sensory Neuroscience		$ 20,442.15	$ 1,504.75	$ 21,946.
Rachel Spooner, PhD, Center for Human Neuroscience		$ 45,277.00	$ -	$ 45,277.
Justin Kueser, PhD, Center of Childhood Deafness		$ 101,055.53	$ 7,878.77	$ 108,934.
Claire Selin, PhD, Center of Childhood Deafness		$ 101,885.45	$ 9,248.33	$ 111,133.
Karla McGregor, PhD, Center for Childhood Deafness		$ 25,879.43	$ -	$ 25,879.
Dinesh Chandel, PhD, Center for Sensory Neuroscience		$ 5,371.45	$ 275.00	$ 5,646.
Lisa Goffman, PhD, Center of Childhood Deafness		$ 138,424.05	$ 9,042.64	$ 147,466.
Nicole Corbin, PhD, Center for Hearing Research		$ 68,825.68	$ 2,311.09	$ 71,136.
	Subtotal	**$ 1,010,596.26**	**$ 90,363.92**	**$ 1,100,960.**
Research Program and Infrastructure Development				
New Projects Fund, Lori Leibold, PhD		$ 9,642.53	$ -	$ 9,642.
Recruitment Fund, Ryan McCreery, PhD		$ 5,847.03	$ 821.10	$ 6,668.
Animal Care Facility Core, Barbara Morley, PhD		$ 28,734.17	$ 1,671.91	$ 30,406.
Postdoctoral Training, Monita Chatterjee, PhD		$ 85,169.96	$ 4,020.18	$ 89,190.
Boys Town Research Vehicle, Lori Leibold, PhD		$ 9,583.66	$ (9,583.66)	$
CDLL Research EC, Lisa Goffman, PhD		$ 11,645.74	$ 1,499.99	$ 13,145.
Visiting Scientist, Ryan McCreery, PhD		$ 2,748.09	$ 97.28	$ 2,845.
Participant Recruitment, Ryan McCreery, PhD		$ 24,199.14	$ 10,861.62	$ 35,060.
	Subtotal	**$ 177,570.32**	**$ 9,388.42**	**$ 186,958.**
Minority Health Research Grants				
Minority Recruitment, Krystal Werfel, PhD		$ 78,737.67	$ 4,243.90	$ 82,981.
Spanish-English Bilinguals, Lori Leibold, PhD		$ 28,475.00	$ -	$ 28,475.
DEI Project: Language Diversity, Krystal Werfel, PhD		$ 3,820.15	$ 304.17	$ 4,124.
	Subtotal	**$ 111,032.82**	**$ 4,548.07**	**$ 115,580.**
	Total FY 2024-2025 Allocation	**$ 1,299,199.40**	**$ 104,300.41**	**$ 1,403,499.**

NEBRASKA
TOBACCO SETTLEMENT BIOMEDICAL RESEARCH DEVELOPMENT FUND

2024-25 PROGRESS REPORT