

Nebraska Tobacco Settlement
Biomedical Research
Development Fund

Fiscal Year
2022-2023

Progress Report

University of Nebraska Medical Center
University of Nebraska at Omaha
University of Nebraska-Lincoln
University of Nebraska at Kearny
Creighton University
Boys Town National Research Hospital

Nebraska Tobacco Settlement Biomedical Research Development Fund

Fiscal Year 2022-2023

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University of Nebraska at Omaha

University of Nebraska-Lincoln

University of Nebraska at Kearny

Creighton University

Boys Town National Research Hospital

Nebraska Tobacco Settlement
Biomedical Research
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Section I

Fund Allocation to Each Institution

University of Nebraska Medical Center
University of Nebraska at Omaha
University of Nebraska-Lincoln
University of Nebraska at Kearny
Creighton University
Boys Town National Research Hospital

**University of Nebraska Medical Center
Nebraska Tobacco Settlement Biomedical Research Development Fund
FY2023 Allocation**

Strategic Faculty Recruitment and Retention	FY 2022-2023 Allocation
College of Allied Health Professions	\$ 8,925
Yvonne Golightly, PhD	
College of Dentistry	\$ 67,278
Aimin Peng, PhD	
College of Medicine	
Anesthesiology	\$ 50,761
Alicia Schiller, PhD	
Biochemistry/Molecular Biology	\$ 465,220
Surinder Batra, PhD; Becky Deegan, PhD; Punita Dhawan, PhD; Mohan Krishnan, PhD; Justin Mott, MD, PhD; Wasim Nasser, PhD; Satya Rachagani, PhD; Micah Schott, PhD; Amar Singh, PhD	
Cellular/Integrative Physiology	\$ 148,009
Rebekah Gundry, PhD	
Genetics, Cell Biology, and Anatomy	\$ 105,811
Kishor Bhakat, PhD; Channabasavaiah Gurumurthy, PhD; Kyle Hewitt, PhD	
Internal Medicine	\$ 339,765
Alfred Fisher, MD, PhD; Apar Kishor Ganti, MD; James Lawler, MD; Roslyn Mannon, MD; Derrick Samuelson, PhD	
Neurological Sciences	\$ 78,281
Kuan-Hua Chen, PhD; Howard Fox, MD, PhD; Peng Zhong, PhD	
Obstetrics/Gynecology	\$ 36,110
So-Youn Kim, PhD	
Ophthalmology and Visual Sciences	\$ 243,287
Christopher Conrady, MD, PhD; DP Singh, PhD; Steven Yeh, MD; Jae Hyuk Yoo, PhD	
Pathology, Microbiology, and Immunology	\$ 319,110
Ken Bayles, PhD; Rey Carabeo, PhD; Leonardo da Silva Augusto, PhD; Stacey Gilk, PhD; Scot Ouellette, PhD; Lisa Rucks, PhD	
Pharmacology and Experimental Neuroscience	\$ 87,671
Siddappa Byrareddy, PhD; Prasanta Dash, PhD; Benson Edagwa, PhD; Santhi Goru	
Radiation Oncology	\$ 3,496
Michael Baine, MD, PhD	
Surgery	\$ 510,978
Christopher Barrett, MD; Keely Buesing, MD; Jason Cook, MD, PhD; Charity Evans, MD; Iraklis Pipinos, MD, PhD; Nora Sarvetnick, PhD	
College of Nursing	\$ 208,879
Windy Alonso, PhD; Michele Balas, PhD; Kristin Dickinson, PhD; Amy Hoffman, PhD; Mariya Kovaleva, PhD; Sheri Rowland, PhD; Anna Schwartz, PhD; Marcia	
College of Pharmacy	\$ 187,696
David Oupicky, PhD; Don Ronning, PhD; Paul Trippier, PhD	
College of Public Health	\$ 565,835
David Brett-Major, MD; Fabiana Brito, PhD; Melanie Cozad, PhD; Joseph Fauver, PhD; Ronnie Horner, PhD; Yunju Im, PhD; Kristina Kintziger, PhD; Abraham Mengist, PhD; Matthew Nonnenmann, PhD; Edward Peters, SCD; Kendra Ratnapradipa, PhD; Lauren Sauer; Dana Verhoeven, PhD; Ying Zhang, PhD	
Eppley Institute for Research in Cancer and Allied Diseases	\$ 572,275
Hamid Band, MD, PhD; Suyong Choi, PhD; Dalia ElGamal, PhD; Michael Hollingsworth, PhD; Grinu Mathew, PhD; Amarnath Natarajan, PhD; Prakash Radhakrishnan, PhD; Nick Woods, PhD	
Munroe-Meyer Institute	\$ 288,010
Jenni Blackford, PhD; Karoly Mimics, MD	
Subtotal	\$ 4,287,397
Research Program & Infrastructure Development	
Comparative Medicine Facility Support	\$ 500,000
IRB & SPAdmin - ITS Service Level Agreements	\$ 437,582
Research Core Lab Support	\$ 956,074
Clinical Data Research Network Support	\$ 31,947
DRC Research Resource Support	\$ 150,292
Institutional Research Resource Support	\$ 496,351
Center for Agricultural Safety and Health	\$ 22,757
Great Plains IDeA CTR	\$ 35,952
Rural Drug Addiction Research CTR (RDAR)	\$ 37,197
Nebraska Center for Nanomedicine (NCN)	\$ 38,560
COPH Water and Health Program Director	\$ 86,972
Cognitive Neuroscience of Development and Aging (CoNDA)	\$ 14,124
Biosciences Research Training Program	\$ 60,400
Image Guided Radiator Instrument	\$ 69,830
Mentored Scholars for Clinical and Translational Research	\$ 77,658
Subtotal	\$ 3,015,696
Joint UNMC-UNL-UNO Research Programs	
UNL COBRE Phase II NPOD (Gundry)	\$ 11,791
UNL COBRE Phase II NPOD (Deegan)	\$ 17,197
UNL COBRE Phase II NPOD (Dhawan)	\$ 17,055
UNL Nebraska Research Initiative Pilot Project (Singh)	\$ 37,493
UNL COBRE Phase II (Schott)	\$ 6,000
Subtotal	\$ 89,536
Minority Health & Health Disparities Research and Mentor Programs	
Center for Reducing Health Disparities	\$ 357,392
Student Success & Engagement	\$ 35,526
Health Disparities Award (King)	\$ 5,602
Health Disparities Award (Watanabe-Galloway)	\$ 5,186
Health Disparities Award (Raikes)	\$ 7,948
Health Disparities Award (Woods)	\$ 47,659
Health Disparities Award (Almedia)	\$ 12,419
Rural Health Pilot Project (Siu)	\$ 21,110
Subtotal	\$ 492,842
3	
Total FY 2022-23 Allocation	\$ 7,885,471

**University of Nebraska at Omaha
Nebraska Tobacco Settlement Biomedical Research Development Fund
FY 2022-2023 Allocation**

<u>Strategic Faculty Recruitment and Retention</u>	FY 2022 - 2023 Allocation
Alicia Rich, PhD, Biology	26,418.14
Denis Svechkarev, PhD, Chemistry	51,458.26
Ernest Chivero, PhD, Psychology	19,978.97
Yury Salkovskiy, PhD, Biomechanics	27,403.34
Joel Elson, PhD, Interdisciplinary Informatics	12,103.32
Ada-Rhoades Short, PhD, Interdisciplinary Informatics	16,604.72
Majid Jadidi, PhD, Biomechanics	6,864.93
Martina Clarke, PhD, Interdisciplinary Informatics	3,858.45
Chun-Hua Tsai, PhD, Information Systems and Quantitative Analysis	18,552.17
Spyridon Mastorakis	48,556.94
Erik Garcia	27,515.00
Roma Subramanian, PhD, Communications	0.00
Subtotal	\$259,314.24
<u>Research Program and Infrastructure Development</u>	
IRB Support	4,388.02
Immunology Laboratory	663.97
Biomechanical Rehabilitation and Manufacturing Initiative (BRMI)	86,958.21
Subtotal	\$ 92,010.20
Total FY 2022 - 2023 Allocation	\$ 351,324.44

University of Nebraska-Lincoln
Nebraska Tobacco Settlement Biomedical Research Development Fund
FY 2022-2023 Allocation

<u>Strategic Faculty Recruitment and Retention</u>	<u>Allocation</u>
Barbey, Aron, Ph.D., Psychology	240,000
Nicole Sexton, Ph.D., School of Biological Sciences	223,043
Tomasz Bednarski, Ph.D., Nutrition & Health Sciences	210,000
Jessie Morrill, Ph.D., Animal Science	136,248
W. Alex Mason, Ph.D., Child, Youth & Family Studies	102,521
Elizabeth Clausing, Ph.D., School of Global Integrative Studies	84,198
Katie Edwards, Ph.D., Educational Psychology	12,000
Subtotal	\$ 1,008,010
<u>Research Program and Infrastructure Development</u>	
Glacios Cryo Transmission Electron Microscope - Mark Wilson, Ph.D.	500,000
Center for Brain, Biology and Behavior - Cary Savage, Ph.D.	400,000
Holland Computing Center Staffing - Hongfeng Yu, Ph.D.	300,000
Roles of Cellular RNA-dependent-RNA Polymerases in Antiviral Defense - Heman Garcia-Ruiz, Ph.D.	50,000
EAT for Prevention - Dipti Dev, Ph.D.	49,980
NCV Director Stipend - Eric Weaver, Ph.D.	30,000
Faculty Development in Biomedical Sciences	22,640
Understanding the mechanism of obesity-induced radiation damage - Robert Powers, Ph.D.	15,477
Subtotal	\$ 1,368,097
<u>Minority Health Research Grants</u>	
Establishment and Evaluation of an Indigenous-led Center to Prevent Sexual Violence among Indigenous Youth across the U.S. - Katie Edwards, Ph.D.	240,655
Minority Health Disparities Initiative, Rick Bevins, Ph.D.	199,722
Subtotal	\$ 440,377
<u>Joint UNL-UNMC Research Programs</u>	
Biological mechanisms that connect nursing with enhanced testicular function - Amy Desaulniers, Ph.D.	15,000
Subtotal	\$ 15,000
Total FY 2022-2023 Allocation	\$2,831,484

**University of Nebraska at Kearney
Nebraska Tobacco Settlement Biomedical Research Development Fund
FY 2022-2023 Allocation**

<u>Research program and infrastructure development</u>	
Instrumentation Support, (Chemistry, Molecular Biology)	\$30,778.70
Biomedical Research Grant Writing Workshop	<u>\$45,381.05</u>
TOTAL EXPENDED	\$76,109.75
Unallocated Rollover to FY 24	\$ 415.25
 TOTAL FY 23 Allocation	 \$76,440.00
Rollover from FY 22	38.57
FY 23 Research Project Close-out (unspent funds)	<u>20.69</u>
TOTAL FY 23 Available Funds	\$76,499.26

**Creighton University
Nebraska Tobacco Settlement
Biomedical Research Development Fund
Allocation for Period July 1, 2022 -June 30, 2023**

Research Program & Infrastructure Development		Allocation
Steyger, Peter	School of Medicine New Faculty Start-up	\$10,975.34
Zuo, Jian	School of Medicine New Chair Start-up	74,385.40
North, Brian	School of Medicine New Faculty Start-up	10,712.86
Hwang, Jee-Yeon	School of Medicine New Faculty Start-up	82,242.54
Kaur, Tejbeer	School of Medicine New Faculty Start-up	3,650.35
Hammond, Kelley	College of Arts & Sciences Exercise Science New Faculty Start-up	83,763.50
Magrini, Mitch	College of Arts & Sciences Exercise Science New Faculty Start-up	81,058.38
Tao, Litao	School of Medicine New Faculty Start-up	107,827.00
Gagnoli, Claudia	School of Medicine New Faculty Start-up	193,365.00
Xia, Jun	School of Medicine New Faculty Start-up	218,808.28
Gee, Clifford	College of Arts Biochemistry New Faculty Start-up	48,848.41
Knezetic, Joseph	Research Compliance Infrastructure Support	231,958.16
Hansen, Laura	Core Facility Equipment	223,447.14
Strauss-Soukup, Julie	Autoclave Installation for NIH INBRE Faculty Projects	26,078.00
Strauss-Soukup, Julie	College of Arts & Sciences Biochemistry Laboratory Equipment	56,689.65
Sanchez, Sonia	School of Dentistry Laboratory Equipment	9,868.63
Hansen, Laura	School of Medicine Laboratory Equipment	3,287.00
Shashank David	School of Medicine Laboratory Equipment	44,303.00
Kristina Simeone	School of Medicine Laboratory Equipment	10,130.00
Holly Stessman	School of Medicine Laboratory Equipment	20,000.00
Yaping Tu	School of Medicine Laboratory Equipment	31,211.00
Dash, Alekha	School of Pharmacy & Health Professions Laboratory Equipment	10,613.40
Nichols, Mike	IBIF Confocal Core Facility Manager Support	8,406.28
Strauss-Soukup, Julie	National Institute of Antimicrobial Resistance Research & Education Institutional Membership	5,000.00
Strauss-Soukup, Julie	LB692 New Initiative Grant Competition Reviewers	7,500.00
Srauss-Soukup, Julie	Associate Vice Provost Research Lab Personnel Support	63,599.75
Bartz, Jason	School of Medicine Assoc Dean Research Lab Personnel Support	78,157.16
Hansen, Laura	School of Medicine Assoc Dean Research Lab Personnel Support	64,326.34
Wrubel, Jonathan	National Science Foundation Grant Matching Funds	35,988.48
Belshan, Michael	Connections Between SARS-CoV-2 Evolution, Patient Comorbidities, and COVID-19 Outcomes	59,632.98
Bourret, Travis	Metabolic Sensing by the Global Gene Regulatory Protein DksA in the Lyme Disease Spirochete Borrelia Burgdorferi	74,014.41
Cote, John	Human Placental Lactogen (Human Chorionic Somatomammotropin) and Oxytocin during Pregnancy: Individual	32,433.63
Kaur, Tejbeer	Targeting Cochlear Inflammation Via Fractalkine to Prevent Loss of Ribbon Synapses in Presbycusis	71,474.20
Peterson, Julie	The Optimization of Postpartum Pelvic Health Support in Rural America	18,435.54
Shibata, Annemarie	Investigating the Mechanistic Role of Long Non-Coding RNA Expression in Ototoxicity	19,802.51
Snyder, Kailey	Application of the Multiphase Optimization Strategy (MOST): Targeting Pelvic Floor Dysfunction in Rural Postpartum Mothers	1,394.00
Strauss-Soukup, Julie	Bridge Funding	75,000.00
		\$2,198,388.32
Minority Health Research Grants		
Kosoko-Lasaki, Sade	Center for Promoting Health and Health Equality	\$198,553.20
		\$198,553.20
		\$2,396,941.52

Boys Town National Research Hospital
Nebraska Tobacco Settlement Biomedical Research Development Fund

Cumulative July 1 2022 -
June 2023

FY 2022-2023 Allocation for period:

Strategic Faculty Recruitment and Retention

	<u>Allocation</u>	
Dominic Cosgrove, PhD, Center for Sensory Neuroscience	\$	306,885.13
Barbara Morley, PhD, Center for Hearing Research	\$	17,841.26
Kristen Janky, PhD, Center for Hearing Research	\$	21,027.26
Monita Chatterjee, PhD, Aud Prostheses & Perception Lab	\$	29,813.83
Yunxia Lundberg, PhD, Center for Sensory Neuroscience	\$	64,714.84
Adam Bosen, PhD, Center for Hearing Research	\$	39,224.46
Kaylah Lalonde, PhD, Center for Hearing Research	\$	14,893.95
Katie Gordon, PhD, Center for Childhood Deafness	\$	72,899.24
Gabrielle Merchant, PhD, Center for Hearing Research	\$	75.00
Christopher Conway, PhD, Center for Hearing Research	\$	123,006.32
G. Chris Stecker, PhD, Center for Hearing Research	\$	2,431.36
fNIRS, Anastasia Kerr-German, Center for Childhood Deafness	\$	73,273.10
Bajaj Multimodal Imaging	\$	144,272.60
Hope S. Lancaster, PhD, Center of Childhood Deafness	\$	27,354.54
Gaelle Doucet, PhD, Institute for Human Neuroscience	\$	1,104.90
Max Kurz, PhD, Institute for Human Neuroscience	\$	52,886.00
Michael Anne Gratton, PhD, Center for Sensory Neuroscience	\$	39,510.95
Zhao Ellen Peng, PhD, Center for Hearing Research	\$	8,577.72
Kathryn Wiseman, PhD, Center for Hearing Research	\$	14,184.60
Krystal Werfel, Ph.D., Center for Childhood Deafness	\$	81,337.43
Appolinaire Olou, Ph.D., Center for Sensory Neuroscience	\$	14,024.32
	\$	1,148,718.81

Research Program and Infrastructure Development

Animal Care Facility Core, Barbara Morley, PhD	\$	28,369.39
Hearing Research Center Core Support, Lori Leibold, PhD	\$	14,423.94
Childhood Deafness Center Core Support, Karla McGregor, PhD	\$	861.78
New Projects Fund, Lori Leibold, PhD	\$	54,549.95
Recruitment Fund, Ryan McCreery, PhD	\$	12,879.90
Visiting Scientist, Ryan McCreery, PhD	\$	1,322.53
Postdoctoral Training, Douglas Keefe, PhD	\$	43,916.32
Anechoic Chamber, G. Chris Stecker, PhD	\$	12,951.91
Boys Town Research Vehicle, Lori Leibold, PhD	\$	22,641.90
	\$	191,917.62

Minority Health Research Grants

Minority Recruitment, Karla McGregor, PhD	\$	24,334.89
Spanish-English Bilinguals, Lori Leibold, PhD	\$	48,801.44
Tyler/Gordon DEI Project: Overcoming Adversity	\$	24,488.89
Werfel DEI Project: Language Diversity	\$	4,981.94
DEI Project: Bilingual Hearing Aid Use	\$	45.00
	\$	102,652.16
	\$	1,443,288.59

Nebraska Tobacco Settlement
Biomedical Research
Development Fund

Section II

Project Progress Descriptions

University of Nebraska Medical Center
University of Nebraska at Omaha
University of Nebraska-Lincoln
University of Nebraska at Kearny
Creighton University
Boys Town National Research Hospital

UNIVERSITY OF NEBRASKA MEDICAL CENTER

Nebraska Tobacco Settlement Biomedical Research Development Fund (NTSBRDF)

Year 22: July 1, 2022 – June 30, 2023
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 2022-23, UNMC received \$7,885,471 in Nebraska Tobacco Settlement Funds and invested it as follows:

- \$4,287,397 in strategic recruitment or retention of new or meritorious research faculty, including \$1,341,343 for the recruitment/retention of women and under-represented minorities.
- \$3,015,696 in program and other infrastructure development, such as capital equipment, new core development, and Centers.
- \$492,842 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.
- \$89,536 for joint research projects between UNMC, University of Nebraska–Lincoln, and University of Nebraska at Omaha

Overall, 23% of the total 2022-23 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 total sponsored awards remained stable at \$250.5M. These external funds support UNMC activities that include sub-categories of research, education, and public service. In fiscal year 2023, UNMC received \$173.4M in research focused sponsored awards, increasing by 2% from the year prior.

Since the availability of the NTSBRDF, UNMC's total extramural research funding has more than quadrupled (\$40.0M in 2000 to \$173.4M in 2023). The growth of extramural research has a direct and positive impact on the economy of the State of Nebraska because these grants support salaries for faculty and staff and indirectly by providing funds to support purchases, and the scientists they support bring new grants, new trials that patients travel to our state to participate in, and serve as a magnet for potential students, industries, and other visitors that want to collaborate or attend conferences they organize.

Since 2001, when NTSBRDF support began, UNMC has invested approximately \$90.7M in the strategic recruitment or retention of 286 researchers, who, in turn, have attracted a total of over \$1.53B in extramural research support after they received NTSBRDF funding. To date, this represents a return on investment of approximately 16 to 1.

Strategic Faculty Recruitment & Retention

In 2022-23, UNMC invested the majority of its allocation, \$4,287,397 (54%), in strategic recruitment and retention of faculty. These supported faculty members have a combined portfolio of \$207.5M in extramurally funded research that was active during the reporting period. In general, the funding of these investigators predominantly comes from the National Institutes of Health (NIH) and other federal sources, including the Centers for Disease Control and Prevention (CDC), the Department of Defense (DOD), the United States Army (US Army), the National Aeronautics and Space Administration (NASA), the National Science Foundation (NSF), the National Oceanic & Atmospheric Administration (NOAA), and The U.S. Department of Veterans Affairs (VA).

Investigators with first time NTSBRDF support during 2022-2023

Investigator: Windy Alonso, PhD

Position, Unit, Department: Assistant Professor, College of Nursing, Omaha Division

Expertise: Heart Failure and Exercise Interventions

External Funding:

Current Funding Total: \$3,769,904

Funding sources: DHHS/NIH/NHLBI

Investigator: Michael Baine, MD, PhD

Position, Unit, Department: Assistant Professor, College of Medicine, Radiation Oncology

Expertise: Radiation Therapy for Prostate and Bladder Cancer

External Funding:

Current Funding Total: \$94,933

Funding sources: Glebe Medical Research Foundation

Investigator: Kuan-Hua Chen, PhD

Position, Unit, Department: Assistant Professor, College of Medicine, Neurological Sciences

Expertise: Dementia and Brain Health

External Funding:

Current Funding Total: \$760,999

Funding sources: DHHS/NIH/NIA

Investigator: Suyong Choi, PhD

Position, Unit, Department: Assistant Professor, Eppley Institute,

Expertise: Cancer Signaling Mechanisms

External Funding:

Current Funding Total: \$2,025,922

Funding sources: DHHS/NIH/NCATS, DHHS/NIH/NIGMS

Investigator: Christopher Conrady, MD, PhD

Position, Unit, Department: Assistant Professor, College of Medicine, Ophthalmology and Visual Sciences

Expertise: Uveitis and Infectious Diseases

External Funding:

Current Funding Total: \$1,768,920

Funding sources: DHHS/NIH/NEI, Genentech, Inc., Knights Templar Eye Foundation Inc

Investigator: Benson Edagwa, PhD

Position, Unit, Department: Associate Professor, College of Medicine, Pharmacology and Experimental Neuroscience

Expertise: Antiretroviral Therapies for HBV and HIV

External Funding:

Current Funding Total: \$4,487,072

Funding sources: DHHS/NIH/NIAID

Investigator: Joseph Fauver, PhD
Position, Unit, Department: Assistant Professor, College of Public Health, Epidemiology
Expertise: Pathogen Genomics
External Funding:
Current Funding Total: \$244,591
Funding sources: National Basketball Association, Yale University

Investigator: Apar Kishor Ganti, MD
Position, Unit, Department: Professor, College of Medicine, Oncology and Hematology
Expertise: Cancer Treatment and Biomarkers
External Funding:
Current Funding Total: \$1,089,688
Funding sources: Big Ten Cancer Research Consortium, Brigham & Women's Hospital, Iovance Biotherapeutics, Inc., Merck Sharp & Dohme Corp., Mirati Therapeutics, V.A. Medical Center – Omaha

Investigator: Yvonne Golightly, PhD
Position, Unit, Department: Professor, College of Allied Health Professions, Physical Therapy
Expertise: Chronic Disease Prevention
External Funding:
Current Funding Total: \$155,191
Funding sources: University of North Carolina Chapel Hill

Investigator: Santhi Gorantla, PhD
Position, Unit, Department: Professor, College of Medicine, Pharmacology and Experimental Neuroscience
Expertise: HIV Pathology and Therapeutic Strategies
External Funding:
Current Funding Total: \$7,312,355
Funding sources: DHHS/NIH/NIDA, DHHS/NIH/NIMH, DHHS/NIH/NINDS, George Washington University, University of Texas Medical Branch at Galveston

Investigator: Channabasavaiah Gurumurthy, PhD
Position, Unit, Department: Professor, College of Medicine, Genetics, Cell Biology and Anatomy
Expertise: End to end genome editing and gene therapy technology development
External Funding:
Current Funding Total: \$2,224,316
Funding sources: DHHS/NIH/NHGRI

Investigator: Ronnie Horner, PhD
Position, Unit, Department: Professor, College of Public Health, Health Services Research & Administration
Expertise: mHealth Technology and Neurological Diseases
External Funding:
Current Funding Total: \$30,000
Funding sources: NE DHHS

Investigator: Kristina Kintziger, PhD
Position, Unit, Department: Associate Professor, College of Public Health, Environmental, Agricultural and Occupational Health
Expertise: Environmental and Disaster Epidemiology
External Funding:
Current Funding Total: \$42,920
Funding sources: DHHS/CDC, Three3, Inc.

Investigator: Mariya Kovaleva, PhD

Position, Unit, Department: Assistant Professor, College of Nursing, Omaha Division

Expertise: Alzheimer's and Dementia Care

External Funding:

Current Funding Total: \$12,000

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

Investigator: Mohan Krishnan, PhD

Position, Unit, Department: Associate Professor, College of Medicine, Biochemistry and Molecular Biology

Expertise: Neonatal Inflammatory Conditions

External Funding:

Current Funding Total: \$2,046,027

Funding sources: DHHS/NIH/NHLBI, DHHS/NIH/NICHD

Investigator: Joshua Mammen, MD, PhD

Position, Unit, Department: Professor, College of Medicine, Surgical Oncology

Expertise: Surgical Oncology and Cancer Specialization

External Funding:

Current Funding Total: \$81,000

Funding sources: Oregon Health and Science University

Investigator: Abraham Mengist, PhD

Position, Unit, Department: Assistant Professor, College of Public Health, Epidemiology

Expertise: Malaria and Helminth Epidemiology

External Funding:

Current Funding Total: \$416,324

Funding sources: DHHS/NIH/NIAID

Investigator: Matthew Nonnenmann, PhD

Position, Unit, Department: Professor, College of Public Health, Environmental, Agricultural and Occupational Health

Expertise: Industrial Hygiene and Bioaerosols

External Funding:

Current Funding Total: \$2,197,577

Funding sources: University of Iowa

Investigator: Edward Peters, SCD

Position, Unit, Department: Professor, College of Public Health, Epidemiology

Expertise: Cancer and Chronic Diseases

External Funding:

Current Funding Total: \$5,062,482

Funding sources: DHHS/NIH/NIA, Emory University, NE DHHS

Investigator: Lauren Sauer, MSc

Position, Unit, Department: Associate Professor, College of Public Health, Environmental, Agricultural and Occupational Health

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

External Funding:

Current Funding Total: \$999,284

Funding sources: Advanced Technology International

Investigator: Micah Schott, PhD

Position, Unit, Department: Assistant Professor, College of Medicine, Biochemistry and Molecular Biology

Expertise: Alcohol-associated Liver and Metabolic Disease

External Funding:

Current Funding Total: \$3,139,912

Funding sources: DHHS/NIH/NCI, DHHS/NIH/NIAAA, DHHS/NIH/NIGMS

Investigator: Steven Yeh, MD

Position, Unit, Department: Professor, College of Medicine, Ophthalmology and Visual Sciences

Expertise: Ocular Inflammation and Diseases

External Funding:

Current Funding Total: \$3,000,413

Funding sources: Adverum Biotechnologies, Inc., Cincinnati Children's Hospital Medical Center, DHHS/NIH/NEI, Johns Hopkins University, Oregon Health and Science University, Priovant Therapeutics, Inc., U.S. Agency for International Development, University of California - San Francisco

Investigator: Peng Zhong, PhD

Position, Unit, Department: Assistant Professor, College of Medicine, Neurological Sciences

Expertise: Sleep and Brain Disorders

External Funding:

Current Funding Total: \$234,862

Funding sources: Brain & Behavior Research Foundation, DHHS/NIH/NINDS

Mentors & Mentored Faculty, New Recruits, and Bridge Funding

Investigator: Sheri Rowland, PhD

Position, Unit, Department: Associate Professor, College of Nursing, Lincoln Division

Expertise: Cardiovascular Health and Nursing Research

Investigator: DP Singh, PhD

Position, Unit, Department: Professor, College of Medicine, Ophthalmology and Visual Sciences

Expertise: Aging and Degenerative Disorders

Investigator: Alicia Schiller, PhD

Position, Unit, Department: Assistant Professor, College of Medicine, Anesthesiology

Expertise: Human Physiology, Combat Casualty Medicine

Investigator: Marcia Shade, PhD

Position, Unit, Department: Assistant Professor, College of Nursing, Omaha Division

Expertise: Geriatric Nursing and Medication Safety

Investigator: Satya Rachagani, PhD

Position, Unit, Department: Assistant Professor, College of Medicine, Biochemistry and Molecular Biology

Expertise: Pancreatic Cancer and IBD Research

Investigator: Prasanta Dash, PhD

Position, Unit, Department: Assistant Professor, College of Medicine, Pharmacology and Experimental Neuroscience

Expertise: Drug-Drug Interactions in HIV Therapeutics

Investigator: Guoku Hu, PhD

Position, Unit, Department: Associate Professor, College of Medicine, Pharmacology/Exp Neuroscience

Expertise: Exosomes and Noncoding RNAs in Neurodegeneration

Investigator: Karoly Mirnics, MD

Position, Unit, Department: Director and Professor, Munroe-Meyer Institute

Expertise: Molecular Neurobiology of Brain Diseases

Investigator: Susmita Sil, PhD

Position, Unit, Department: Assistant Professor, College of Medicine, Pharmacology and Experimental Neuroscience

Expertise: Long Non-Coding RNAs in Neurodegeneration

Investigator: Lisa Rucks, PhD

Position, Unit, Department: Professor, College of Medicine, Pathology, Microbiology, and Immunology

Expertise: Growth & Development of Chlamydia

Investigator: James Lawler, MD

Position, Unit, Department: Professor, College of Medicine, Infectious Diseases

Expertise: Infectious Disease, Biocontainment & Medical Evacuation Training

Investigator: Kristin Dickinson, PhD

Position, Unit, Department: Asst Professor, College of Nursing, Omaha Division

Expertise: Targeted Therapies in Leukemias

Investigator: Kendra Ratnapradipa, PhD

Position, Unit, Department: Asst Professor, College of Public Health, Epidemiology

Expertise: Cancer Health Disparities and Geospatial Health

Investigator: David Brett-Major, MD

Position, Unit, Department: Professor, College of Public Health, Epidemiology

Expertise: Infectious Diseases and Health Emergency Risk Management

Investigator: Jason Cook, MD, PhD

Position, Unit, Department: Asst Professor, College of Medicine, Vascular Surgery

Expertise: Vascular Surgery Research

Investigator: Leonardo da Silva Augusto, PhD

Position, Unit, Department: Asst Professor, College of Medicine, Pathology, Microbiology, and Immunology

Expertise: Neuroinflammation and Neurodegeneration

Investigator: Grinu Mathew, PhD

Position, Unit, Department: Assistant Professor, Eppley Institute

Expertise: Prostate Cancer Research

Investigator: Melanie Cozad, PhD

Position, Unit, Department: Assistant Professor, College of Public Health, Health Services Research and Administration

Expertise: Patient-Centered Care in Chronic and Terminal Illnesses

Investigator: Christopher Barrett, MD

Position, Unit, Department: Assistant Professor, College of Medicine, Acute Care Surgery

Expertise: Coagulation and Trauma Research

Investigator: Yunju Im, PhD
Position, Unit, Department: Assistant Professor, College of Public Health, Biostatistics
Expertise: Statistical Analysis in Science

Investigator: Dana Verhoeven, PhD
Position, Unit, Department: Assistant Professor, College of Public Health, Health Services Research and Administration
Expertise: Health Care Delivery and Dynamics

Investigator: Anna Schwartz, PhD
Position, Unit, Department: Professor, College of Nursing, Omaha Division
Expertise: Exercise Oncology and Cancer Care

Investigators receiving continuing NTSBRDF support during 2022-2023

Investigator: Michele Balas, PhD
Position, Unit, Department: Professor, College of Nursing, Omaha Division
Expertise: Critical Care and Adult Health Outcomes
External Funding:
Current Funding Total: \$6,625,998
Funding sources: DHHS/NIH/NHLBI, Johns Hopkins University

Investigator: Hamid Band, MD, PhD
Position, Unit, Department: Professor, Eppley Institute
Expertise: Breast Cancer & Cancer Cell Signaling
External Funding:
Current Funding Total: \$3,245,867
Funding sources: Nimbus Therapeutics, U.S. Army/USAMRAA/CDMRP

Investigator: Surinder Batra, PhD
Position, Unit, Department: Chairperson and Professor, College of Medicine, Biochemistry and Molecular Biology
Expertise: Pancreatic Cancer, Development of Diagnostic/Prognostic Markers for Cancer
External Funding:
Current Funding Total: \$14,621,511
Funding sources: DHHS/NIH/NCI, H. Lee Moffitt Cancer Center, University of California - San Diego Moores Cancer Center, University of Pittsburgh, University of Pittsburgh Medical Center

Investigator: Ken Bayles, PhD
Position, Unit, Department: Professor, College of Medicine, Pathology, Microbiology, and Immunology
Expertise: Antibiotic Development for Resistant Staphylococcal Disease
External Funding:
Current Funding Total: \$20,857,602
Funding sources: DHHS/NIH/NIAID, National Strategic Research Institute

Investigator: Kishor Bhakat, PhD
Position, Unit, Department: Associate Professor, College of Medicine, Genetics, Cell Biology and Anatomy
Expertise: Cancer Epigenetics and Transcriptional Memory
External Funding:
Current Funding Total: \$579,375
Funding sources: U.S. Army/USAMRAA/CDMRP

Investigator: Jenni Blackford, PhD

Position, Unit, Department: Professor, Munroe-Meyer Institute

Expertise: Neurobiology of Anxiety and Psychiatric Disorders

External Funding:

Current Funding Total: \$3,756,913

Funding sources: DHHS/NIH/NIAAA, Vanderbilt University Medical Center

Investigator: Fabiana Brito, PhD

Position, Unit, Department: Assistant Professor, College of Public Health, Health Promotion

Expertise: Weight Loss and Health Management Research

External Funding:

Current Funding Total: \$689,190

Funding sources: University of Nebraska - Lincoln

Investigator: Keely Buesing, MD

Position, Unit, Department: Associate Professor, College of Medicine, Acute Care Surgery

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

External Funding:

Current Funding Total: \$1,510,289

Funding sources: National Strategic Research Institute, University of Colorado at Boulder

Investigator: Siddappa Byrareddy, PhD

Position, Unit, Department: Professor, College of Medicine, Pharmacology and Experimental Neuroscience

Expertise: HIV/AIDS Prevention, Host-Virus Dynamics

External Funding:

Current Funding Total: \$2,488,796

Funding sources: Texas Biomedical Research Institute, University of Minnesota

Investigator: Rey Carabeo, PhD

Position, Unit, Department: Professor, College of Medicine, Pathology, Microbiology, and Immunology

Expertise: Cellular Microbiology of Chlamydia and Host Cell Interaction

External Funding:

Current Funding Total: \$2,679,047

Funding sources: DHHS/NIH/NIAID

Investigator: Becky Deegan, PhD

Position, Unit, Department: Professor, College of Medicine, Biochemistry and Molecular Biology

Expertise: Radiation and Chemotherapy Side Effect Reduction

External Funding:

Current Funding Total: \$7,741,957

Funding sources: DHHS/NIH/NCI, U.S. Army/USAMRAA/CDMRP

Investigator: Punita Dhawan, PhD

Position, Unit, Department: Professor, College of Medicine, Biochemistry and Molecular Biology

Expertise: Cell-to-Cell Adhesion in Colorectal Cancer Progression and Metastasis

External Funding:

Current Funding Total: \$3,111,336

Funding sources: DHHS/NIH/NCI, V.A. Medical Center - Omaha

Investigator: Dalia ElGamal, PhD

Position, Unit, Department: Assistant Professor, Eppley Institute

Expertise: B-cell Malignancies and Anti-Tumor Therapeutics

External Funding:

Current Funding Total: \$65,000

Funding sources: NE DHHS

Investigator: Charity Evans, MD

Position, Unit, Department: Professor, College of Medicine, Acute Care Surgery

Expertise: Acute Care Surgery, Trauma Care, Violence Prevention

External Funding:

Current Funding Total: \$237,740

Funding sources: City of Omaha

Investigator: Alfred Fisher, MD, PhD

Position, Unit, Department: Professor, College of Medicine, Geriatrics, Gerontology and Palliative Medicine

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

External Funding:

Current Funding Total: \$432,706

Funding sources: Duke University

Investigator: Howard Fox, MD, PhD

Position, Unit, Department: Professor, College of Medicine, Neurological Sciences

Expertise: HIV/AIDS and Neurodegenerative Diseases

External Funding:

Current Funding Total: \$22,715,656

Funding sources: Boys Town National Research Hospital, DHHS/NIH/NIDA, DHHS/NIH/NIMH, Drexel University

Investigator: Stacey Gilk, PhD

Position, Unit, Department: Associate Professor, College of Medicine, Pathology, Microbiology, and Immunology

Expertise: Role of Intracellular Pathogens in Host Cell Lipids and Lipid Metabolism

External Funding:

Current Funding Total: \$4,632,310

Funding sources: DHHS/NIH/NIAID

Investigator: Rebekah Gundry, PhD

Position, Unit, Department: Chairperson and Professor, College of Medicine, Cellular and Integrative Physiology

Expertise: Glycoproteomics and Glycomics to Understand Cardiac Biology and Disease

External Funding:

Current Funding Total: \$5,698,065

Funding sources: DHHS/NIH/NHLBI, Kings College London

Investigator: Kyle Hewitt, PhD

Position, Unit, Department: Associate Professor, College of Medicine, Genetics, Cell Biology and Anatomy

Expertise: Hematopoietic Stem Cell Regulation and Blood Disease Mechanisms

External Funding:

Current Funding Total: \$1,913,107

Funding sources: DHHS/NIH/NHLBI

Investigator: Amy Hoffman, PhD

Position, Unit, Department: Professor, College of Nursing, Omaha Division

Expertise: Physical Activity to Manage Fatigue in Cancer Patients

External Funding:

Current Funding Total: \$2,823,157

Funding sources: DHHS/NIH/NCI

Investigator: Michael Hollingsworth, PhD
Position, Unit, Department: Professor, Eppley Institute
Expertise: Pancreatic Cancer
External Funding:
Current Funding Total: \$4,113,079
Funding sources: DHHS/NIH/NCI

Investigator: Jae Hyuk Yoo, PhD
Position, Unit, Department: Assistant Professor, College of Medicine, Ophthalmology and Visual Sciences
Expertise: Molecular Pathways in Tumors & Cancers of the Eye
External Funding:
Current Funding Total: \$741,981
Funding sources: DHHS/NIH/NCI

Investigator: So-Youn Kim, PhD
Position, Unit, Department: Assistant Professor, College of Medicine, Obstetrics/Gynecology
Expertise: Fertility Preservation in Anticancer Therapies
External Funding:
Current Funding Total: \$1,680,869
Funding sources: DHHS/NIH/NICHD, Granulosa Cell Tumour Research Foundation

Investigator: Roslyn Mannon, MD
Position, Unit, Department: Professor, College of Medicine, Nephrology
Expertise: Kidney Transplantation
External Funding:
Current Funding Total: \$1,667,501
Funding sources: Verici DX Limited

Investigator: Justin Mott, MD, PhD
Position, Unit, Department: Professor, College of Medicine, Biochemistry and Molecular Biology
Expertise: Liver Cancer and Cell Death Mechanisms
External Funding:
Current Funding Total: \$1,787,761
Funding sources: DHHS/NIH/NCI, NE DHHS

Investigator: Wasim Nasser, PhD
Position, Unit, Department: Associate Professor, College of Medicine, Biochemistry and Molecular Biology
Expertise: Brain Metastasis, Breast Cancer, and Lung Cancer
External Funding:
Current Funding Total: \$4,881,948
Funding sources: DHHS/NIH/NCI

Investigator: Amarnath Natarajan, PhD
Position, Unit, Department: Professor, Eppley Institute
Expertise: Small Molecule Probes, Cancer Therapeutics
External Funding:
Current Funding Total: \$4,492,828
Funding sources: DHHS/NIH/NCI, University of Missouri-Columbia

Investigator: David Oupicky, PhD
Position, Unit, Department: Professor, College of Pharmacy, Pharmaceutical Science
Expertise: Polymers & Nanoparticles for Delivery of Drugs & Genes
External Funding:
Current Funding Total: \$8,351,654
Funding sources: DHHS/NIH/NCI, DHHS/NIH/NIAAA, DHHS/NIH/NIDDK

Investigator: Aimin Peng, PhD

Position, Unit, Department: Associate Professor, College of Dentistry, Oral Biology

Expertise: DNA Damage Responses in Cancer Therapy

External Funding:

Current Funding Total: \$3,622,642

Funding sources: DHHS/NIH/NCI, DHHS/NIH/NIDCR

Investigator: Iraklis Pipinos, MD, PhD

Position, Unit, Department: Professor, College of Medicine, Vascular Surgery

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

External Funding:

Current Funding Total: \$6,618,621

Funding sources: DHHS/NIH/NIA, Emory University

Investigator: Prakash Radhakrishnan, PhD

Position, Unit, Department: Associate Professor, Eppley Institute

Expertise: Glycobiology, Cell Signaling, and Therapeutics in Pancreatic Cancer

External Funding:

Current Funding Total: \$891,537

Funding sources: American Cancer Society, Glebe Medical Research Foundation

Investigator: Don Ronning, PhD

Position, Unit, Department: Professor, College of Pharmacy, Pharmaceutical Science

Expertise: Tuberculosis, Development of Anti-Infective Compounds

External Funding:

Current Funding Total: \$1,519,547

Funding sources: DHHS/NIH/NIAID

Investigator: Derrick Samuelson, PhD

Position, Unit, Department: Assistant Professor, College of Medicine, Pulmonary, Critical Care and Sleep Medicine

Expertise: Role of Microbiome in Defense Against Respiratory Pathogens

External Funding:

Current Funding Total: \$3,286,540

Funding sources: DHHS/NIH/NIDDK

Investigator: Nora Sarvetnick, PhD

Position, Unit, Department: Professor, College of Medicine, Transplant Surgery

Expertise: Autoimmune Diseases and Type 1 Diabetes Research

External Funding:

Current Funding Total: \$6,824,463

Funding sources: DHHS/NIH/NIAID

Investigator: Amar Singh, PhD

Position, Unit, Department: Professor, College of Medicine, Biochemistry and Molecular Biology

Expertise: Preventive Strategies in IBD and Colorectal Cancer

External Funding:

Current Funding Total: \$558,137

Funding sources: South Dakota State University, V.A. Medical Center - Omaha

Investigator: Paul Trippier, PhD

Position, Unit, Department: Associate Professor, College of Pharmacy, Pharmaceutical Science

Expertise: Small Molecule Drug Discovery for Cancer & Neurodegenerative Diseases

External Funding:

Current Funding Total: \$6,558,155

Funding sources: DHHS/NIH/NCI, DHHS/NIH/NIA, DHHS/NIH/NICHD, Oakland University, U.S. Army/USAMRAA/CDMRP

Investigator: Xinglong Wang, PhD

Position, Unit, Department: Professor, College of Medicine, Pharmacology and Experimental Neuroscience

Expertise: Neurodegenerative Disease Research

External Funding:

Current Funding Total: \$1,616,057

Funding sources: Alzheimer's Association, DHHS/NIH/NIA

Investigator: Nick Woods, PhD

Position, Unit, Department: Assistant Professor, Eppley Institute

Expertise: Cancer Signaling and Systems Biology

External Funding:

Current Funding Total: \$179,100

Funding sources: University of Utah Huntsman Cancer Institute

Investigator: Ying Zhang, PhD

Position, Unit, Department: Professor, College of Public Health, Biostatistics

Expertise: Statistical Methodology in Health Sciences

External Funding:

Current Funding Total: \$434,448

Funding sources: Research Institute at Nationwide Children's Hospital, V.A. Medical Center - Indianapolis

Research Program and Infrastructure Development

A total of \$3,015,696 (38.2%) was invested in research program and infrastructure development in 2022-23. Additionally, \$89,536 was spent on pilot grants to spur joint research programs between University of Nebraska–Lincoln, University of Nebraska at Omaha, 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. Additional investments were made for translational core facilities such as the development of a Biosafety Level Three facility that supports infectious disease research, and expanded access to biomedical informatics resources—an increasingly critical component of science and discovery. Core facilities are essential for the success of our NIH funded Centers such as the Nebraska Center for Nanomedicine, the Center for Heart & Vascular Research, and the Fred & Pamela Buffett Cancer Center. They also provide services to investigators across the region.

NTSBRDF supports new 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 Center for the Prevention of Obesity Diseases (NPOD)

- Rebekah Gundry - Glycan Signatures as mechanistic markers of beta cell injury in diabetes
- Punita Dhawan – Role of MASTL in Pancreatic Steatosis and Associated Diseases
- Rebecca Deegan - Understanding the mechanism of obesity-induced radiation damage
- Micah Schott – Preventing Obesity Pilot Project

Nebraska Research Initiative

- Rakesh Singh – Genome-Scale Kinetic Modelling of Pancreatic Cancer Metabolism

Minority Health and Health Disparities Research and Mentor Programs

In 2022-23, UNMC invested \$492,842 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 offered two graduate level courses and provided educational presentations and guest lectures.

An investment of \$99,924 was made in health disparities research pilot projects during this year, which focused on the following:

Project Title: Technology-based Diabetes Prevention Among Hispanic Populations in Rural Nebraska
Principal Investigator: Fabio Almeida, PhD, Associate Professor, College of Public Health, Health Promotion

Project Title: Changing Health for African American Men with New and Great Experiences (CHANGE)
Principal Investigator: Keyonna King, DrPH, Associate Professor, College of Public Health, Health Promotion

Project Title: Colorectal Cancer Screening Intervention Pilot among Nebraska Agricultural Workers
Principal Investigator: Shinobu Watanabe-Galloway, PhD, Professor, College of Public Health, Epidemiology

Project Title: Addressing Health Disparities through High-quality Childcare
Principal Investigator: Abbie Raikes, PhD, Associate Professor, College of Public Health, Health Promotion

Project Title: RNF2 Regulation of Molecular Subtype Contributes to PDAC Health Disparities
Principal Investigator: Nicholas Woods, PhD, Assistant Professor, Eppley Institute

Project Title: Smart Wearable In-home Monitoring System (SWIMS) for Healthy Aging in Rural Nebraska
Principal Investigator: Ka-Chun Siu, PhD, Associate Professor, College of Allied Health Professions, Health and Rehabilitation Sciences

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 \$35,526 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 AT OMAHA
Nebraska Tobacco Settlement Biomedical Research Development Fund
(NTSBRDF)

Year 22: July 1, 2022–June 30, 2023
Progress Report

Executive Summary

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

- Strategic Faculty Recruitment and Retention
- Research Program and Infrastructure Development

During 2022-23, UNO allocated NTSBRDF funds as follows:

- \$259,314.24 in strategic recruitment of new research faculty or retention of twelve meritorious researchers.
- \$92,010.20 for research program and infrastructure support.

The NTSBRDF funding received during FY23 was critical to the recruitment and retention of outstanding scientists who conduct biomedical research. In addition, the funds were used to continue supporting research programs.

Strategic Faculty Recruitment & Retention

With the NTSBRDF funds, UNO was able to supplement start-up and retention packages for twelve faculty members with a total of \$259,314.24 in funding. Although the NTSBRDF investments in recruitment and retention packages were relatively modest, these funds were strategically invested in researchers who plan to seek funding from external funding agencies. Given that UNO has only recently had access to the NTSBRDF, we are still in the early stages of developing a strategy to leverage these funds to enhance our biomedical research portfolio. We are developing a strategic plan to encourage applications for NTSBRDF funds going forward. The impact of these investments remains to be determined.

Investigator: Alicia Rich, PhD

Position Title & Department: Assistant Professor, Biology

Expertise: Primate physiology and health outcomes; development of molecular biomarkers

Investigator: Denis Svechkarev, PhD

Position Title & 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: \$76,626

Proposals Pending: \$603,299 (NIH)

Funding Sources: NIH

Investigator: Ernest Chivero, PhD

Position Title & Department: Assistant Professor, Psychology-Neuroscience

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

External Funding:

Proposals Pending: \$497,767 (NSF)

Investigator: Yury Salkovskiy, PhD
Position Title & Department: Assistant Professor, Biomechanics
Expertise: Biomechanics, material science, biomaterials, aerosols
External Funding:
Proposals Pending: \$452,844 (NIH), \$11,058,035 (NIH)

Investigator: Joel Elson, PhD
Position Title & Department: Assistant Professor, School of Interdisciplinary Informatics
Expertise: NCITE Executive Committee Member & Assistant Professor of IT Innovation, specializes in the use of psychometric assessments, eye-tracking and neurophysiological measures applied toward research in human-computer interaction. Dr. Elson is a user-interface/user-experience expert whose primary research focuses on human-computer interaction and, more specifically, the impact of individual differences, system characteristics, and situational factors on human users' trust, feelings, and behavior toward those systems.
External Funding:
Current Funding Total: \$715,102
Proposals Pending: \$1,019,921 (NIH), \$359,000 (NSF)
Funding Sources: U.S. Department of Homeland Security

Investigator: Ada-Rhodes Short, PhD
Position Title & Department: Assistant Professor, School of Interdisciplinary Informatics
Expertise: Computational Cognition, Machine Intelligence, Design, and Robotics
External Funding:
Current Funding Total: \$10,000
Proposals Pending: \$60,000 (Spencer Foundation), \$474,101 (NSF NASA EPSCoR)
Funding Sources: NSF (NASA EPSCoR)

Investigator: Majid Jadidi, PhD
Position Title & Department: Assistant Professor, Department of Biomechanics
Expertise: Cardiovascular Biomechanics
External Funding:
Proposals Pending: \$153,915 (American Heart Association), \$1,062,380 (NIH K01)

Investigator: Martina Clarke, PhD
Position Title & Department: Assistant Professor, School of Interdisciplinary Informatics
Expertise: Health Informatics
External Funding:
Current Funding Total: \$141,189
Proposals Pending: \$1,331,023 (UNMC)
Funding Sources: Union Pacific

Investigator: Chun-Hua Tsai, PhD
Position Title & Department: Assistant Professor, Information Systems and Quantitative Analysis
Expertise: Dr. Tsai's research agenda is focused on advancing the understanding and design of sociotechnical systems by applying methodologies from Human-Computer Interaction (HCI) and Human-Centered Computing (HCC). His research is situated at the intersection of HCI, Intelligent User Interface (IUI), and Artificial Intelligence (AI). Dr. Tsai employs a mixed-methods approach, combining quantitative and qualitative methods, to gain insights into user interactions and experiences with AI-driven systems. His work explores design solutions aimed at creating trustworthy services and enhancing human-AI interaction, with specific emphasis on applications in healthcare, education, and recommender systems.
External Funding:
Current Funding Total: \$182,293
Proposals Pending: \$2,059,289 (Tribal FEMA), \$103,739 (NIH), \$60,000 (Design Google)
Funding Sources: NSF

Investigator: Spyridon Mastorakis, PhD
Position Title & Department: Assistant Professor, Computer Science
Expertise: Edge computing, computer networks, cybersecurity, Internet of Things
External Funding:
Current Funding Total: \$509,869
Funding Sources: NSF, CSU

Investigator: Erik Garcia, PhD

Position Title & Department: Assistant Professor, Psychology-Neuroscience

Expertise: Behavioral Neuroscience and neuropharmacology

External Funding:

Proposals Pending: \$400,294 (NIH), \$1,742,566 (NIH), \$75,000 (Peter F. McManus Charitable Trust), \$426,003 (NIH), \$2,013,335 (NIH)

Investigator: Roma Subramanian, PhD

Position Title & Department: Associate Professor, Communications

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

External Funding:

Proposals Pending: \$48,779 (UNMC), \$1,665,304 (NIH), \$8,312 (UNL)

Research Programs and Infrastructure Support

In FY23, a total of \$92,010.20 in NTSBRDF funds were invested in research programs and infrastructure development to support UNO faculty researchers and to continue essential support to campus research operations. A small portion was used to contribute to the purchase of equipment for Dr. Paul Denton's laboratory. Paul Denton, PhD, is an Assistant Professor in the Department of Biology. His research interests include the incorporation of immunotherapies into oncology treatments. His research group focuses on improving immunotherapies to treat malignancies. With the NTSBRDF, UNO contributed to the continuation of these important research activities in the Immunobiology laboratory. We also used a portion of our tobacco allocation to continue supporting the campus IRB liaison to help represent UNO and facilitate IRB reviews at UNMC.

UNO invested \$86,958.21 to support the Biomechanical Rehabilitation and Manufacturing Initiative (BRMI). The mission statement of the BRMI is to improve the quality of life of medically underserved populations through the offering of comprehensive rehabilitation services and the creation of low-cost medical devices for our local, national, and international communities. Most notably, through the BRMI, a free upper extremity clinic for the surrounding community was created within the Biomedical Research Building at UNO, providing services to over 160 patients from our local community. BRMI has also fostered a new Sports Medicine and Biomechanics Research partnership between Biomechanics and Athletic Training. Activities of the partnerships include offering community services, collaborating with UNO Athletics, and a nationally known Pitching Lab, which has served over 300 UNO and Omaha-area athletes in the past two years. Activities in the BRMI have led to the development of multiple licensed intellectual properties as well. There are 2 Co-Directors, Dr. Brian Knarr and Dr. Jorge Zuniga.

UNIVERSITY OF NEBRASKA-LINCOLN

Nebraska Tobacco Settlement Biomedical Research Development Fund (NTSBRDF)

Year 22: July 1, 2022–June 30, 2023
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 22 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 2022-2023, UNL invested a total of \$2,831,484 from the NTSBRDF, including an allocation of \$1,008,010 for six faculty hires and one faculty retention; \$1,368,097 to support research programs and infrastructure development; \$440,377 for grants to researchers addressing minority health disparities in Nebraska; and \$15,000 for one joint UNL/UNMC research project.

As has been the case in previous years, these investments have made a great impact on UNL's research climate and productivity and leveraged a total of \$50,512,420 in external funding in 2022-2023 – an impressive return on investment that speaks to the value of the investment UNL has made in building biomedical research excellence.

Strategic Faculty Recruitment and Retention

Introduction: In 2022-2023, UNL invested \$1,008,010 of NTSBRDF funds to expand faculty expertise into new areas of biomedical research that have a strong likelihood of increasing the university's base of externally funded research programs of interest to the National Institutes of Health, other federal agencies (e.g., Centers for Disease Control and Prevention and National Science Foundation) and private agencies (e.g., American Heart Association and American Cancer Society). These funds also made it possible to hire or retain six faculty members at the assistant and full professor levels. Their research will focus on improving human health and well-being. As an example, one faculty member uses state-of-the-art genomic, transcriptomic, proteomic and metabolomic methods to identify how cardiovascular disease develops. Another faculty member investigates factors affecting interpersonal violence and sexual assault, as well as their consequences and potential prevention. The investments in new faculty hires and the retention of current faculty resulted in the transfer or acquisition of new research awards totaling \$34,882,134 in 2022-2023.

Investigator: Aron Barbey, Ph.D.

Position Title & Department: Professor, Department of Psychology

Expertise: Dr. Barbey's program of research investigates the underlying neural mechanisms of human intelligence and decision making. Translational investigations on 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: \$69,420

Proposals Pending: \$342,563

Funding Source: Energy & Industry

Investigator: Alex Mason, Ph.D.

Position Title & Department: Professor, Department of Child, Youth and Family Studies

Expertise: Dr. Mason's collaborative program of research focuses on human development and the potential factors contributing to adolescent substance misuse and co-occurring psychopathology. A primary area of interest is in understanding the early childhood precursors of adolescent problems and contributors to positive development with the goal of knowledge translation into the development and dissemination of effective preventive interventions.

External Funding:

Active: \$165,591

Proposals Pending: \$8,623,492

Funding Source: NIH, Education, USDA

Investigator: Nicole Sexton, Ph.D.

Position Title & Department: Assistant Professor, School of Biological Sciences

Expertise: Dr. Sexton's research examines the genetic adaptations that allow viruses to not just survive but to flourish in alternating host environments. RNA arboviruses such as West Nile, Yellow Fever, and some encephalitis must balance high mutation rates with cyclical transmission between arthropod and vertebrate hosts. This research provides an important model system to answer critical questions about viral evolution in competing host environments, such as what distinct pressures are applied to arboviruses from their hosts.

External Funding:

Active: \$0

Proposals Pending: \$4,761,441

Funding Sources: NIH

Investigator: Tomasz Bednarski, Ph.D.

Position Title & Department: Assistant Professor, Department of Nutrition and Health Sciences

Expertise: Dr. Bednarski's research seeks to identify metabolic processes that contribute to the progression of cardiovascular disease – a leading cause of death worldwide. In doing so, these metabolic pathways can be targeted in the clinic for disease prevention, diagnosis or treatment. This research involves the use of state-of-the-art genomic, transcriptomic, proteomic, metabolomic and stable isotope tracer methods to identify how cardiovascular disease develops.

External Funding:

Active: \$126,542

Proposals Pending: \$1,655,000

Funding Sources: NIH & American Diabetes Association

Investigator: Jessie Morrill, Ph.D.

Position Title & Department: Assistant Professor, Department of Animal Science

Expertise: Dr. Morrill's program of research focuses on understanding how nutritional, environmental and genetic factors contribute to increased adipose tissue in the context of either meat production or the progression of obesity in humans. To address such key questions as how animal behavior and metabolism are impacted during exposure to changes in environmental temperature, Dr. Morrill uses cutting-edge techniques such as computer vision technology, lipidomics, laser capture microdissection and infra-red thermography.

External Funding:

Active: \$377,465

Proposals Pending: \$277,231

Funding Sources: USDA, Industry

Investigator: Elizabeth Clausing, Ph.D.

Position Title & Department: Assistant Professor, School of Global Integrative Studies

Expertise: Dr. Clausing's research explores how subjective measures of stress (psychosocial stress) are associated with objective measures of stress (epigenetic aging, DNA methylation, hair cortisol). This interdisciplinary work focuses on the interface of early childhood experiences such as low socioeconomic status or childhood adversity and later health issues in adulthood. Of particular interest is how stress can impact the body through epigenetic inheritance via DNA methylation in mothers and children.

External Funding: No external funding active or pending at this time.

Investigator: Katie Edwards, Ph.D.

Position Title & Department: Professor, Department of Educational Psychology

Expertise: Dr. Edwards' interdisciplinary research focuses on understanding the causes and consequences of interpersonal violence, primarily intimate partner violence, and sexual assault among adolescents and emerging adults. These efforts focus on risk and protective factors for perpetration and victimization, as well as factors that facilitate or hinder bystander action in situations of intimate partner violence and sexual assault. This research informs the development and implementation of prevention and intervention efforts with a focus on historically marginalized populations, such as sexual minority youth and Native American youth.

External Funding:

Active: \$4,358,086

Proposals Pending: \$5,930,372

Funding Sources: NIH, NSF, Dept. of Justice

Research Program and Infrastructure Development

Introduction: In 2022-2023, a total of \$1,368,097 in NTSBRDF funds were invested in research program and infrastructure development to support UNL faculty competitiveness for external funding for biomedical research. These investments leveraged \$31,380,509 in new external funding for biomedical research in 2022-2023. Areas of investment include the development and support of novel research programs with the potential to improve human health and enhance UNL infrastructure to conduct biomedical research. The projects are broadly focused on brain, biology, behavior and cognition; structural biology of large proteins to understand integrated biomolecular communication; high-performance computing to support intensive computing projects by engineers and scientists; immunology, virology and better vaccine development; novel targets for aging, inflammation and fibrosis of normal tissues from radiation toxicology. Some projects are collaborations with investigators at other NU System institutions, confirming UNL's commitment to leverage human and other Nebraska resources in conducting innovative biomedical research that requires highly skilled interdisciplinary teams.

Project Title: Glacios Cryo Transmission Electron Microscope

Principal Investigator: Mark Wilson, Ph.D.

Description: UNL purchased and renovated a space to house a Glacios 200 keV cryo-transmission electron microscope (cryo-TEM), and established a new cryo-TEM core facility when the instrument was delivered in winter 2022. The new microscope includes a Selectris energy filter, Falcon 4i direct detector and micro-electron diffraction stage with Ceta-D detector. Establishment of this new research capability

and facility is a significant step forward in support of structural and systems biology research in the NU System and has the potential to help make NU a regional leader and hub in this area. The new instrumentation is particularly tied to and will help support efforts in the Nebraska Center for Integrated Biomolecular Communication, a National Institutes of Health-funded Center of Biomedical Research Excellence (CoBRE).

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

Principal Investigator: Cary Savage, Ph.D.

Description: The Center for Brain, Biology and Behavior (CB3) is an interdisciplinary research center established to investigate the social, biological, behavioral, engineering and neurological issues related to human performance and development. Investments were made to support Center leadership to further research in these areas.

Project Title: Holland Computing Center – Super Computing Facilities

Principal Investigator: Hongfeng Yu, Ph.D.

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

Project Title: Roles of Cellular RNA-dependent-RNA Polymerases in Antiviral Defense

Principal Investigator: Hernan Garcia, Ph.D.

Description: Gene silencing is an essential antiviral defense system in plants that operates through the adaptive biogenesis and target-specific activity of virus-derived small interfering RNAs (siRNAs), which can be primary or secondary. This project tests the hypothesis that experimental inactivation of key enzymes controlling gene transcription will genetically block secondary siRNA formation, thus uncovering the population of primary virus-derived siRNAs, which are the footprint of the initial trigger of antiviral immunity mediated by gene silencing.

Project Title: EAT for Prevention

Principal Investigator: Dipti Dev, Ph.D.

Description: EAT for Prevention is an online program developed by Dr. Dev that helps family childcare home providers implement responsive feeding practices to promote healthy eating in children. This investment provides support to test the feasibility of EAT for Prevention's effectiveness regarding family childcare home providers' use of responsive feeding practices. In doing so, it will provide the foundation for a larger study that extends to rural communities and children from low-income families.

Project Title: Nebraska Center for Virology

Principal Investigator: Eric Weaver, Ph.D.

Description: This project provides support for the director of the Nebraska Center for Virology. The director leads activities to build interdisciplinary research teams, enhance

research collaborations and augment competitiveness of NCV faculty for extramural funding related to important animal, human or plant viruses.

Project Title: Faculty Development in Biomedical Sciences

Description: This program allows the university to host faculty workshops led by nationally recognized grant-writing consultants, enhancing UNL's competitiveness for federal funding.

Project Title: Understanding the Mechanism of Obesity-induced Radiation Damage.

Principal Investigator: Robert Powers, Ph.D.

Description: Radiation toxicity results in aging, inflammation and fibrosis of normal tissues due to reactive oxygen species (ROS). This project will test the novel hypothesis that adiponectin (a fat-derived hormone that is decreased in obesity and other metabolic disorders) secreted from normal adipose tissues protects from radiation injury and fibrosis through scavenging of ROS and reactive nitrogen species. This research will provide the foundation for investigating a novel target for radioprotection.

Minority Health Research Grants

Introduction: A total of \$440,377 was invested in projects to address the health needs of underserved minorities in Nebraska, the Great Plains, and across the U.S. These projects support research conducted by the Minority Health Disparities Initiative and the to-be-established Sexual Violence Prevention Center (SPVC). Through integrative community-based approaches, these projects advance scientific research, practice and training related to health issues experienced by underserved populations in Nebraska and the region. These efforts address the goal to identify, understand and eventually eliminate race- and ethnicity-based behavioral health disparities in Nebraska and throughout the U.S.

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

Principal Investigator: Katie Edwards, Ph.D.

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

Project Title: Minority Health Disparities Initiative

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

Description: The MHDI sponsors a number of mission-specific functions, including visiting speakers (selected and hosted by faculty affiliates [virtual this year]); a conversation series led by faculty affiliates and community members; an annual conference co-sponsored with NE DHHS Office of Health Disparities and Health Equity; work with a community board on strategic planning; a summer National Science Foundation-funded Research Experiences for Undergraduates program (research mentored by affiliated faculty); and undergraduate research assistant support for MHDI faculty. It also provides community outreach and project management for research and evaluation projects by MHDI-affiliated faculty. In the last fiscal year, MHDI-affiliated faculty assisted in preparing and submitting grant proposals totaling approximately \$60 million in direct costs.

Joint Research Projects

Introduction: UNL and UNMC faculty often offer complementary research expertise to address biomedical problems that cannot be solved alone by individual investigators from either institution. To facilitate team building and preliminary data acquisition across the two institutions, a total of \$15,000 in NTSBRDF funds were used to support one project from a team that includes UNL and other NU System researchers.

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

Principal Investigator: Amy Desaulniers, Ph.D.

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

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

Year 22: July 1, 2022–June 30, 2023
Progress Report

Executive Summary

UNK's goal for the NTSBRDF program for the 2022-2023 FY was to increase the number of NIH grant submissions at the R15 level or higher from its faculty through a combination of direct support for grant writers and through leveraging funds from the program with other core funding to enhance the capital research infrastructure at UNK. One primary goal was to repeat the grant-writing workshop funding as was done during the 2021 fiscal year. All the funding for FY 2023 was allocated within the Research Program and Infrastructure Development area. **In 2022-2023, UNK invested a total of \$76,102** from the program with about 60% of the funding for grant writing support and the remainder to capital equipment purchase and maintenance. Grant submissions from the FY 2021 grant-writing group have resulted in \$655,952 in grant funding to UNK. We are confident that this year's version of the workshop will be equally successful considering return-on-investment.

Research Program and Infrastructure Development

Following the success of the FY21 Grant writing workshop, UNK again partnered with the UNL RDAR Center to host a workshop for nine UNK faculty members toward the development of NIH grants. Funding was allocated to the RDAR center for holding the workshop spanning 10 weeks during summer 2023. Additional funding was allocated as either salary stipends or professional development funds for the participants. Funds totaling \$45,381.05 were allocated toward the workshop and stipends. An additional stipend of \$1000 each paid from the FY24 allocation will be available to participants upon submission of an NIH or other federal biomedical research program at the R15 level or higher if completed by the February 2024 funding window. As of the date of this report, four of the nine had already submitted qualifying grant proposals.

Funds totaling \$30,728.70 were invested in capital equipment and repairs in the bioanalytical chemistry and molecular biology areas in the Chemistry and Biology Departments at UNK, respectively. All these instruments are part of the INSpRE instrumentation core at UNK and are critical to the ongoing research needs of the research faculty at UNK.

CREIGHTON UNIVERSITY

Nebraska Tobacco Settlement Biomedical Research Development Fund (NTSBRDF)

Year 22: July 1, 2022-June 30, 2023
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 2022-2023, the collective efforts of the research investigators at Creighton University produced significant results. Creighton University received nearly \$27 million in extramural research awards and sponsored projects. Investigators were awarded federal grants from the Department of Defense, the National Institutes of Health, the U.S. Department of Education and the Health Resources and Services Administration, as well as many other non-federal grants from corporations and foundations. The university and its investigators look forward to continuing to use NTSBRDF funds as a springboard to benefit the citizens of Nebraska and to add to research and healthcare knowledge everywhere.

Strategic Faculty Recruitment and Retention

A total of \$915,637 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 \$5,786,276 during this reporting period. These new awards are from agencies such as the National Institutes of Health, the Department of Defense, and the Cystic Fibrosis Foundation.

Investigator: Peter Steyger, PhD

Position Title & Department: Professor and Director, Translational Hearing Center, School of Medicine, Department of Biomedical Sciences

Project Title: Mechanism and Clinical Risk of Drug-Induced Hearing Loss

External Funding:

Current Year Funding Total: \$2,231,017

Funding Sources: NE-DHHS, NIH, Cystic Fibrosis Foundation

Investigator: Jian Zuo, PhD

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

Project Title: Neurodegeneration, Function, Regeneration, and Protection of Sensory Hair Cells in the Inner Ear

External Funding:

Current Year Funding Total: \$506,861

Funding Sources: NE-DHHS, DOD, Medical Research Council

Investigator: Brian North, PhD

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

Project Title: Role of Protein Homeostasis Factors in Regulating the Interrelationship Between Aging and Cancer

External Funding:

Current Year Funding Total: \$427,388

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

Investigator: Jee-Yeon Hwang, PhD

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

Project Title: Profiling of Altered Genes Examining their Role in Neurodegeneration

External Funding:

Current Year Funding Total: \$159,993

Funding Sources: NE-DHHS, NIH

Investigator: Tejbeer Kaur, PhD

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

Project Title: Biological Mechanisms of Neurodegeneration and Endogenous Repair

External Funding:

Current Year Funding Total: \$562,117

Funding Sources: NE-DHHS, NIH

Investigator: Kelley Hammond, PhD

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

Project Title: Muscle Physiology Research

External Funding:

Current Year Funding Total: \$154,185

Funding Sources: NE-DHHS, NIH

Investigator: Mitch Magrini, PhD

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

Project Title: Non-Invasive Assessment of Neuromuscular Function

External Funding:

Current Year Funding Total: \$123,868

Funding Sources: NE-DHHS, Health Sciences Strategic Investment Fund

Investigator: Litao Tao, PhD
Position Title & Department: Assistant Professor, School of Medicine, Department of Biomedical Sciences
Project Title: Inner Ear and Transcription Manipulation for Deafness Treatment
External Funding:
Current Year Funding Total: \$693,683
Funding Sources: NE-DHHS, NIH, Hearing Health Foundation

Investigator: Claudia Gragnoli, MD, PhD
Position Title & Department: Professor, School of Medicine, Department of Medicine
Project Title: Polycystic Ovarian Syndrome (PCOS) and PCOS-Traits: Heavy Metal Contribution and Genomic Mediation
External Funding:
Current Year Funding Total: \$180,000
Funding Sources: NE-DHHS

Investigator: Xia, Jun, PhD
Position Title & Department: Assistant Professor, School of Medicine, Department of Biomedical Sciences
Project Title:
External Funding:
Current Year Funding Total: \$529,000
Funding Sources: NE-DHHS, NIH

Investigator: Clifford Gee, PhD
Position Title & Department: Assistant Professor, College of Arts & Sciences, Department of Chemistry & Biochemistry
Project Title:
External Funding:
Current Year Funding Total: \$109,082
Funding Sources: NE-DHHS, NIH

Research Program and Infrastructure Development

A total of \$1,282,751 was invested in research program and infrastructure development in 2021-2022 in a wide variety of topics, including 1) Metabolic Sensing by the Global Gene Regulatory Protein DksA in Lyme Disease Spirochete *Borrelia burgdorferi*, 2) Connections between SARS-CoV-2 evolution, patient comorbidities, and COVID-19 outcomes, 3) The Optimization of Postpartum Pelvic Health Support in Rural America and 4) Investigating the Mechanistic role of Long Non-Coding RNA Expression in Ototoxicity. 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: Joseph Knezetic, PhD
Position Title & Department: Director, Research Compliance & Professor, School of Medicine, Department of Pathology
Project Title: Research Compliance Infrastructure Support
External Funding:
Current Year Funding Total: \$231,958
Funding Sources: NE-DHHS

Investigator: Laura Hansen, PhD
Position Title & Department: Associate Dean for Research and Professor, School of Medicine, Department of Biomedical Sciences
Project Title: Core Facility Equipment
External Funding:
Current Year Funding Total: \$522,271
Funding Sources: NE-DHHS, NIH

Investigator: Julie Strauss-Soukup, PhD
Position Title & Department: Associate Vice Provost for Research & Scholarship & Professor, College of Arts & Sciences, Department of Chemistry & Biochemistry
Project Title: Autoclave Installation for NIH INBRE Faculty Projects
External Funding:
Current Year Funding Total: \$343,894
Funding Sources: NE-DHHS, NIH

Investigator: Julie Strauss-Soukup, PhD
Position Title & Department: Associate Vice Provost for Research & Scholarship & Professor, College of Arts & Sciences, Department of Chemistry & Biochemistry
Project Title: College of Arts & Sciences Biochemistry Laboratory Equipment
External Funding:
Current Year Funding Total: \$343,894
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: School of Dentistry Laboratory Equipment
External Funding:
Current Year Funding Total: \$9,869
Funding Sources: NE-DHHS

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 Laboratory Equipment
External Funding:
Current Year Funding Total: \$522,271
Funding Sources: NE-DHHS, NIH

Investigator: Shashank Dravid, PhD
Position Title & Department: Professor, School of Medicine, Department of Pharmacology & Neuroscience
Project Title: School of Medicine Laboratory Equipment
External Funding:
Current Year Funding Total: \$979,624
Funding Sources: NE-DHHS, NIH

Investigator: Kristina Simeone, PhD
Position Title & Department: Associate Professor, School of Medicine, Department of Pharmacology & Neuroscience
Project Title: School of Medicine Laboratory Equipment
External Funding:
Current Year Funding Total: \$371,473
Funding Sources: NE-DHHS, NIH

Investigator: Holly Stessman, PhD
Position Title & Department: Assistant Professor, School of Medicine, Department of Pharmacology & Neuroscience
Project Title: School of Medicine Laboratory Equipment
External Funding:
Current Year Funding Total: \$319,493
Funding Sources: NE-DHHS, PCORI, Kicks for Cure, Inc.

Investigator: Yaping Tu, PhD
Position Title & Department: Professor, School of Medicine, Department of Pharmacology & Neuroscience
Project Title: School of Medicine Laboratory Equipment
External Funding:
Current Year Funding Total: \$170,340
Funding Sources: NE-DHHS, American Lung Association, Kicks for Cure, Inc.

Investigator: Alekha Dash, PhD
Position Title & Department: Associate Dean for Research and Professor, School of Pharmacy & Health Professions, Department of Pharmacy Sciences
Project Title: School of Pharmacy & Health Professions Laboratory Equipment
External Funding:
Current Year Funding Total: \$10,613
Funding Sources: NE-DHHS

Investigator: Michael Nichols, PhD
Position Title & Department: Professor, College of Arts & Sciences, Department of Physics
Project Title: IBIF Confocal Core Facility Manager Support
External Funding:
Current Year Funding Total: \$127,846
Funding Sources: NE-DHHS, NIH

Investigator: Julie Strauss-Soukup, PhD
Position Title & Department: Associate Vice Provost for Research & Scholarship & Professor, College of Arts & Sciences, Department of Chemistry & Biochemistry
Project Title: National Institute of Antimicrobial Resistance Research and Education Institutional Membership
External Funding:
Current Year Funding Total: \$343,894
Funding Sources: NE-DHHS, NIH

Investigator: Julie Strauss-Soukup, PhD
Position Title & Department: Associate Vice Provost for Research & Scholarship & Professor, College of Arts & Sciences, Department of Chemistry & Biochemistry
Project Title: New Initiative Program Grant Reviewers
External Funding:
Current Year Funding Total: \$343,894
Funding Sources: NE-DHHS, NIH

Investigator: Julie Strauss-Soukup, PhD

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

Project Title: Associate Vice Provost Research Lab Personnel Support

External Funding:

Current Year Funding Total: \$343,894

Funding Sources: NE-DHHS, NIH

Investigator: Jason Bartz, PhD

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

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

External Funding:

Current Year Funding Total: \$1,450,558

Funding Sources: NE-DHHS, NIH, State of Michigan, Creutzfeldt-Jakob Disease Foundation

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: \$522,271

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: \$248,374

Funding Sources: NE-DHHS, NSF

Investigator: Michael Belshan, PhD

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

Project Title: Connections between SARS-CoV-2 Evolution, Patient Comorbidities, and COVID-19 outcome

External Funding:

Current Year Funding Total: \$113,294

Funding Sources: NE-DHHS, NIH

Investigator: Travis Bourret, PhD

Position Title & Department: Associate Professor, School of Medicine, Department of Medical Microbiology, and Immunology

Project Title: Metabolic Sensing by the Global Gene Regulatory Protein DksA in the Lyme Disease spirochete *Borrelia burgdorferi*

External Funding:

Current Year Funding Total: \$75,000

Funding Sources: NE-DHHS

Investigator: John Cote, MD
Position Title & Department: Assistant Professor, School of Medicine, Department of Obstetrics & Gynecology
Project Title: Human Placental Lactogen (Human Chorionic Somatomammotropin) and Oxytocin during Pregnancy: Individual Patterns and Correlations with Maternal-Fetal Attachment, Anxiety, and Depression
External Funding:
Current Year Funding Total: \$110,000
Funding Sources: NE-DHHS

Investigator: Tejbeer Kaur, PhD
Position Title & Department: Assistant Professor, School of Medicine, Department of Biomedical Sciences
Project Title: Targeting Cochlear Inflammaging Via Fractalkine to Prevent Loss of Ribbon Synapses in Presbycusis
External Funding:
Current Year Funding Total: \$562,117
Funding Sources: NE-DHHS, NIH

Investigator: Julie Peterson, PhD
Position Title & Department: Associate Professor, School of Pharmacy & Health Professions, Department of Physical Therapy
Project Title: The Optimization of Postpartum Pelvic Health Support in Rural America
External Funding:
Current Year Funding Total: \$50,000
Funding Sources: NE-DHHS

Investigator: Annemarie Shibata, PhD
Position Title & Department: Professor, College of Arts & Sciences, Department of Biology
Project Title: Investigating the Mechanistic Role of Long Non-Coding RNA Expression in Ototoxicity
External Funding:
Current Year Funding Total: \$603,987
Funding Sources: NE-DHHS, NIH

Investigator: Kailey Snyder, PhD
Position Title & Department: Assistant Professor, School of Pharmacy & Health Professions, Department of Physical Therapy
Project Title: Application of the Multiphase Optimization Strategy (MOST): Targeting Pelvic Floor Dysfunctional in Rural Postpartum Mothers
External Funding:
Current Year Funding Total: \$1,394
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: Bridge Funding
External Funding:
Current Year Funding Total: \$343,894
Funding Sources: NE-DHHS, NIH

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 \$198,553 was awarded in 2022-2023 for minority health research.

Investigator: Sade Kosoko-Lasaki, MD

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

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

External Funding:

Current Year Funding Total: \$3,221,074

Funding Sources: NE-DHHS, HRSA

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

FY 2022-2023 Allocation for period July 1, 2022 – June 30, 2023

Summary Report of Services Provided

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

Strategic Faculty Recruitment & Retention

Introduction: Most entries in this category represent multiple-year start-up packages for new investigators. 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: Dominic Cosgrove, PhD

Position Title & Department: Director of the Gene Expression Laboratory

Expertise: Dr. Cosgrove's laboratory studies the molecular basis of genetic hearing loss in diseases such as Alport Syndrome.

Allocation: \$ 306,685

Description of Goals and Accomplishments: Funds are being used to fund pilot data for a new NIH grant proposal submitted in July 2023.

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: \$ 17,841

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: \$ 21,027

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: \$ 29,614

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: Yunxia Lundberg, PhD

Position Title & Department: Coordinator of the Vestibular Neurogenetics Laboratory, Center for Sensory Neuroscience.

Expertise: Expression of genes and characterization of proteins in the vestibular sense organ, genetics of benign paroxysmal positional vertigo (BPPV).

Allocation: \$ 64,715

Description of Goals and Accomplishments: Funds are being used to supplement support for an NIH grant proposal to develop a research program in human genetics by a long-term faculty member.

Investigator: Adam Bosen, PhD

Position Title & Department: Director of the Auditory Perceptual Encoding Laboratory

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

Allocation: \$ 39,224

Description of Goals and Accomplishments: Dr. Bosen is a promising early-career scientist who recently completed a COBRE-funded project on speech recognition and cognitive abilities. 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: \$ 14,894

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: 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: \$ 72,899

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: Gabrielle Merchant, PhD

Position Title & Department: Director of the Translational Auditory Physiology and Perception Laboratory

Expertise: Diagnosis and management of otitis media and middle ear problems in children

Allocation: \$ 75

Description of Goals and Accomplishments: Dr. Merchant initiated a new project to help improve the diagnosis of ear infections and middle ear problems in children in rural areas or with limited access to medical care.

Investigator: Chris Conway, PhD

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

Expertise: Statistical learning in children who are deaf and hard of hearing.

Allocation: \$ 123,006

Description of Goals and Accomplishments: Start-up package funds are being used to support purchase of laboratory equipment and collection of preliminary data for an NIH grant application.

Investigator: G. Chris Stecker, PhD

Position Title & Department: Director of the Spatial Hearing Laboratory

Expertise: Auditory scene awareness, augmented/virtual reality applications in hearing science, hearing in complex listening environments.

Allocation: \$ 2,431

Description of Goals and Accomplishments: Start-up funds are being provided to help Dr. Stecker transition his laboratory from Vanderbilt University to BTNRH.

Investigator: Anastasia Kerr-German, PhD

Position Title & Department: Director of the Brain, Executive Function, and Attention Research Laboratory

Expertise: Functional near-infrared spectroscopy (fNIRS), development of executive function

Allocation: \$ 73,273

Description of Goals and Accomplishments: Funds are being provided to supplement post-doctoral funding and transition Dr. Kerr-German from a post-doctoral position to an independent laboratory head.

Investigator: Sahil Bajaj, PhD

Position Title & Department: Director of the Multimodal Clinical Neuroimaging Laboratory

Expertise: Neural bases of suicidal ideation and adolescent mental health.

Allocation: \$ 144,273

Description of Goals and Accomplishments: Dr. Bajaj is an early-career scientist who is establishing a laboratory to examine neural and behavioral indicators of suicidal ideation and mental health problems in adolescents. These funds are being allocated to supplement neuroimaging scans for his research and support laboratory staff.

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: \$ 27,355

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: Gaelle Doucet, PhD

Position Title & Department: Director of the Brain Architecture, Imaging, and Cognition Laboratory

Expertise: Structural and functional Magnetic Resonance Imaging (MRI) and relations to behavior.

Allocation: \$ 1,105

Description of Goals and Accomplishments: Funds are being provided to establish a new laboratory focused on neuroimaging and behavioral neurosciences across the lifespan for an early-career scientist.

Investigator: Max Kurz, PhD

Position Title & Department: Director of the Physiology of Walking & Engineering Rehabilitation (PoWER) Laboratory

Expertise: Neuroscience of motor and sensory processes using MRI and magnetoencephalography.

Allocation: \$ 52,666

Description of Goals and Accomplishments: Funds are being provided to transition Dr. Kurz's laboratory to the Institute for Human Neuroscience at Boys Town. Funding provides support for the acquisition of a robotic exoskeleton to help people with movement disorders.

Investigator: Michael Anne Gratton, PhD

Position Title & Department: Scientist II, Gene Expression Laboratory

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

Allocation: \$ 39,511

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

Investigator: Zhao Ellen Peng, PhD

Position Title & Department: Director of the Functional Hearing Laboratory

Allocation: \$ 8,578

Description of Goals and Accomplishments: Funds are being used to establish Dr. Peng'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: \$ 14,185

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: 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: \$ 81,337

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: Appolinaire Olou, PhD

Position Title & Department: Scientist I, Molecular Diagnostic Laboratory

Allocation: \$ 14,024

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.

Research Program & Infrastructure Development

Project Title: Animal Care Facility Core

Principal Investigator: Barbara Morley, PhD

Amount of Funding: \$ 28,370

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: Hearing Research Center Core Support

Principal Investigator: Lori Leibold, PhD

Amount of Funding: \$ 14,424

Description of Goals and Accomplishments: Funds are being allocated to provide general support for hearing researchers who do behavioral studies of auditory perception in children and adults in the Center for Hearing Research

Project Title: Childhood Deafness Center Core Support

Principal Investigator: Karla McGregor, PhD

Amount of Funding: \$ 862

Description of Goals and Accomplishments: Funds are budgeted for supplemental support of programs and core functions in the Center for Childhood Deafness, Learning, and Language. The money is being used to fund laboratory facilities improvements and support remote data acquisition.

Project Title: New Projects Fund

Principal Investigator: Lori Leibold, PhD

Amount of Funding: \$ 54,550

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: \$ 12,880

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

Project Title: Visiting Scientist

Principal Investigator: Ryan McCreery, PhD

Amount of Funding: \$ 1,323

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: Postdoctoral Training

Principal Investigator: Monita Chatterjee, PhD

Amount of Funding: \$ 43,916

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

Project Title: Anechoic Chamber
Principal Investigator: G. Chris Stecker, PhD
Amount of Funding: \$ 12,952

Description of Goals and Accomplishments: Boys Town recently constructed a state-of-the-art anechoic chamber facility for studying spatial hearing and hearing aid processing. The funds are being used to provide equipment and computing support for the chamber.

Project Title: Boys Town Research Vehicle
Principal Investigator: Lori Leibold, PhD
Amount of Funding: \$22,642

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

Minority Health Research Grants

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

Project Title: Minority Recruitment
Investigator: Karla McGregor, PhD
Amount of Funding: \$ 24,335

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: \$ 48,801

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: Diversity Pilot Grants

Investigator: Patrick Tyler, Chanelle Gordon

Amount of Funding: \$24,489

Description of Goals and Accomplishments: Three 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. One of the diversity pilot grants started in June and will examine the effects of Attention-Deficit Hyperactivity Disorder in racial and ethnic minority students to help examine gaps in service provision.

Project Title: DEI Project: Language Diversity

Investigator: Krystal Werfel, PhD

Amount of Funding: \$4,982

Description of Goals and Accomplishments: Three 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.

Project Title: DEI Project: Bilingual Hearing Aid Use

Investigator: Kathryn Wisemen, Ph.D.

Amount of Funding: \$45

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