

Collaboration Initiative
Nebraska Research Initiative
Grants
July 1, 2023



Proposal Title	Researchers		Campus
Bacterial production of antibiotics through gene activation by plasma-activated water	Barry Cheung Liangcheng Du	PI	UNL UNL
Brain Molecular Network Using CEST MRI	Yutong Liu Dongming Peng Jane Meza Subodh Lele Jixin Dong Vimla Band	PI	UNMC UNL UNMC UNMC UNMC UNMC
Ceramic Coatings by Laser Sintering	Bai Cui Yongfeng Lu	PI	UNL UNL
Chemical Decontamination Hydrogel	Daniel Van Buren Martha Morton Scott Darveau Eric Markvicka Barry Cheung	PI	UNOP UNL UNK UNL UNL
Computational Modeling of Thrombosis In Calcified Peripheral Arteries	Alexey Kamenskiy Nitesh Nama Jason MacTaggart	PI	UNO UNL UNMC
Develop a One-Health Surveillance System on Antimicrobial Resistance	Xu Li Peter Iwen Dustin Loy Galen Erickson	PI	UNL UNMC UNL UNL

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Development of a social marketing intervention to improve screening rates for colorectal cancer among agricultural operators	Shinobu Watanabe-Galloway Aaron Yoder JY Kim Cheryl Beseler Roma Subramanian	PI	UNMC UNMC UNMC UNMC UNO
Development of postoperative peritoneal adhesion porcine model to evaluate the efficacy of novel multifunctional microgel-based cream hydrogels	Bin Duan Mark Carlson	PI	UNMC UNMC
Development of Target-Specific, Real-Time Sequencing and Genomic Characterization of PRRSV for Active Surveillance in Nebraskan Swine Herds.	Shaun Cross Hiep Vu	PI	UNMC UNL
Elucidation and co-targeting of two distinct mechano-adaptation modules in metastatic breast cancer	Hamid Band Jung Yul Lim	PI	UNMC UNL
Elucidation of the transport phenomena of insect wing circulation using in vitro models	Sangjin Ryu Mahboub Baccouch	PI	UNL UNO
Enhancing thermal insulation with nanofibrous materials	Yury Salkovskiy Aaron Likens Jingwei Xie	PI	UNO UNO UNMC
Exploring an interplay between hemodynamics and hemorheology during the no-reflow phenomenon in cerebral ischemia	Jae Sung Park Bin Duan Ruiguo Yang	PI	UNL UNMC UNL

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Exploring Neurodevelopmental Disorders as Risk Factors for Extremist Beliefs, Targeted Violence, and Terrorism	Melissa Hunter Samuel Hunter	PI	UNMC UNO
Exploring non-canonical adaptations across the domains of life in alkaline lakes systems in the Sandhills of Nebraska	Paul Ayayee Thomas Powers David Dunigan	PI	UNO UNL UNL
Femtosecond laser processed surfaces to enable strong direct bonding of low surface energy polymers to metals	Lucia Fernandez Ballester Craig Zuhlke	PI	UNL UNL
High fiber wheat for a healthier society	Devin Rose Katherine Frels Corri Hanson Amanda Ramer-Tait	PI	UNL UNL UNMC UNL
Identification of coagulation risks and correlation with disease severity and treatment response in patients with autoimmune blistering diseases	Erin Barrett Corey Georgesen Christopher Barrett Xiaoyue Zoe Cheng	PI	UNMC UNMC UNMC UNO
Improving walking in peripheral artery disease using oxygen-guided supervised exercise therapy	Farahnaz Fallah Tafti Iraklis Pipinos Sara Myers	PI	UNO UNMC UNO

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Intranasal oxytocin intervention for caregivers to persons with dementia	Soonjo Hwang David Warren Daniel Murman Janelle Beadle	PI	UNMC UNMC UNMC UNO
Laser Vibrational Resonance Excitation of Ammonia Molecules for High-Efficiency Surface Nitridation of Solid Materials	Bai Cui Wai-Ning Mei Yongfeng Lu	PI	UNL UNO UNL
Localized Electroporation to Generate Functional mRNA Loaded Exosomes for Enhancing Peripheral Nerve Regeneration	Bin Duan Ruiguo Yang	PI	UNMC UNL
A Machine-Learning Approach to API Usage Learning for Detecting API Misuse Errors	Myoungkyu Song Xin Zhong Kwangsung Oh Yeongjin Gwon Harvey Siy Madhu Srinivasan	PI	UNO UNO UNO UNMC UNO UNO
Maternal Dietary OFA Supplementation Impact in Oxycodone Exposed Pregnancies: Animal and Clinical Implications on Placental Ultrastructure and Function; Proteomics of Neurodevelopmental and Behavior Deficits and Clinical Acceptability of Supplementation	Ann Anderson Berry Ashley Blount Corri Hanson Gurudutt Pendyala	PI	UNMC UNO UNMC UNMC

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mHealth Effects for Addressing Socio-economic Inequities	Sajda Qureshi Melanie Cozad Martina Clarke Timi Barone John Windle	PI	UNO UNMC UNO UNO UNMC
Multi-Actor Risk Analysis Methodology	Deanna House Elsbeth Magilton Tyler White Lana Obradovic Michelle Black	PI	UNO UNL UNL UNO UNO
Myocardial cell death mechanisms due to TEVAR-induced aortic stiffening	Anastasia Desyatova Jason MacTaggart Paras Kumar Mishra	PI	UNO UNMC UNMC
Nebraska Healthcare By Design	Tyler Scherr Luther Mardock Carl Nelson Brian Knarr Harnoor Singh Emily Glenn Bethany Lowndes Kati Bravo Jen Kallio TJ Welniak	PI	UNMC UNMC UNL UNO UNO UNMC UNMC UNMC UNMC UNMC

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Nitrate transport in playa wetlands and their substratum soils of the Rainwater Basin and the implications for groundwater aquifer contamination	John Hribljan Kelly Deuerling Troy Gilmore Paul Ayayee	PI	UNO UNO UNL UNO
Optimizing prescribed fire management for forest diversity and ecosystem resilience	Sabrina Russo Thomas Bragg Daniel Uden Yufeng Ge Richard Wood	PI	UNL UNO UNL UNL UNL
Pilot and Assessment of Cyberinfrastructure for Image-based Environmental Monitoring and Education	Heather Akin Jenny Keshwani Mary Harner Troy Gilmore	PI	UNL UNL UNK UNL
Prototyping of a ruggedized powered air purifying respirator (PAPR) for healthcare use in austere conditions	Beth Beam Bethany Lowndes	PI	UNMC UNMC
Real-World Assessment of Knee Performance After Anterior Cruciate Ligament Injury	Liz Wellsandt Eric Markvicka Sandra Starkey Matthew McManigal Christopher Wichman Michael Rosenthal Matthew Tao Jong-Hoon Youn	PI	UNMC UNL UNL UNMC UNMC UNMC UNMC UNO

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Reducing Disease Burden after Acute Exacerbation Chronic Obstructive Pulmonary Disease (REBOUND)	Susan Barnason Kevin Kupzyk Julie Lanz Sue Schuelke Joseph Siu	PI	UNMC UNMC UNK UNMC UNMC
Role of Stabilin-1 in the development of colorectal liver metastasis	Edward Harris Paul W Denton Benita McVicker	PI	UNL UNO UNMC
The Roles of Wnt5a-TRPV1 Interactions in Modulating Chemotherapy Induced Neuropathic Pain	Yihe Huang Bin Duan	PI	UNL UNMC
Signatures of a polymer going to chaos	Li Tan Wai-Ning Mei Alexey Krasnoslobodtsev Renat Sabirianov Joseph Turner Mehrdad Negahban Yuris Dzenis Lucia Ballester	PI	UNL UNO UNO UNO UNL UNL UNL UNL
Social Defeat (bullying) during adolescence and opioid addiction: Novel markers and mechanisms	Gurudutt Pendyala Rick Bevins Sowmya Yelamanchili	PI	UNMC UNL UNMC

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Technique to Interrogate the Mechanical Crosstalk between the Cell-Cell and Cell-ECM Adhesions under Defined Mechanical Stimuli	Ruiguo Yang	PI	UNL
Therapeutic efficacy of mesenchymal stem cells derived extracellular vesicles to treat methamphetamine addiction	Sowmya Yelamanchili Rick Bevins Gurudutt Pendyala	PI	UNMC UNL UNMC
Therapeutic efficacy of STAT3 nanoparticle in pediatric brain tumor Medulloblastoma.	Sutapa Ray Forrest Kievit	PI	UNMC UNL
Transitioning from a Linear to a Circular Bioeconomy Opportunities within the Beef System	Tala Awada George Grispos Makki Khorchani Jason Hawkins Sruti Das Choudhury Ahmed Chennak Hongfeng Yu Andrea Watson Zhenghong Tang Andy Suyker Mark Riley Santosh Pitla Joe Luck Rumiko Handa	PI	UNL UNO UNL UNL UNL UNL UNL UNL UNL UNL UNL UNL UNL UNL

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Proposal Title	Researchers		Campus
Translational Effects of Language and Exercise Interventions on Cognitive Aging	Ladan Ghazi Saidi Alfred Fisher Cary Savage Douglas Schultz	PI	UNK UNMC UNL UNL
Using AI-powered chatbots to enhance health equity and patient-centered care for low socioeconomic status communities.	Chun-Hua Tsai Ann Anderson Berry	PI	UNO UNMC
Virus infection of macrophages and severity of motor neuron disease in a murine ALS model	Tom Petro James Van Etten Irina Agarkova Ahmed Esmael David Dunigan	PI	UNMC UNL UNL UNL UNL