WAYNE STATE
School of Medicine

SEPT 3, 2024

# THE RESEARCH REVIEW

*School of Medicine Quarterly Newsletter*

*Issue No. 8*


## RESEARCH-FOCUSED

*"Research is seeing what everybody else has seen and thinking what nobody else has thought."*

- Albert Szent-Györgyi

## IN THIS ISSUE



## *NEED MORE INFO?*

For more information on School of Medicine research opportunities and policies visit our web page HERE.

## NEW NIH AWARDS

**PI:** *Dr. Maik Huetteman -Center for Molecular Medicine and Genetics*

### Non-invasive infrared light therapy and medical device to treat spinal cord injury

Award Number: 1R01NS134695-01A1

This project will use an innovative, non-invasive technology, which is based on infrared light, to target the mitochondria, the so-called powerhouses of the cell, in the injured spinal cord. The treatment attenuates increase in reactive oxygen species production, which is detrimental to neuronal cell regeneration. This novel approach identifies and answers key gaps in spinal cord injury research that will help move the field forward.

**PI:** Dr. Marta Rodriguez-Garcia - Biochemistry, Microbiology and Immunology

### The impact of aging on neutrophil-mediated protection and inflammation in the female genital mucosa

Award Number: 1U01AG084766-01

To prevent morbidity and mortality in older women and enable medical advances, the defense mechanisms that protect the female genital tract (FGT) from infection and are impaired with aging need to be identified. This proposed research will investigate defense mechanisms that exist in neutrophils. The identification of targetable mechanisms that improve protection against infections in the FGT will open new pathways for the development of prevention strategies for all women as they age.

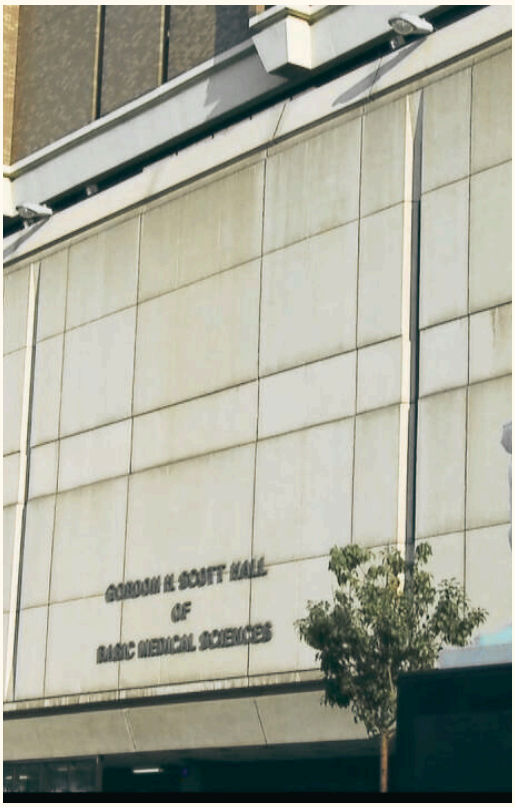
# NEW NIH AWARDS CONTINUED

**PI:** *Dr. Sokol Todi-Pharmacology*

## Common themes of the biology of disease in polyglutamine disorders

Award Number: 3R01NS086778-10A1S1

Age-dependent neurodegeneration is a major health and socioeconomic burden that will worsen as human lifespan steadily increases. The mechanisms of degeneration initiation and progression remain poorly understood. This proposal centers on identifying common and distinct themes of the biology of the disease of the family of polyglutamine disorders with the goals of: 1) treating them in the clinic and 2) continuing the scientific and professional development of Dr. Nuga, postdoctoral fellow in the Todi lab.

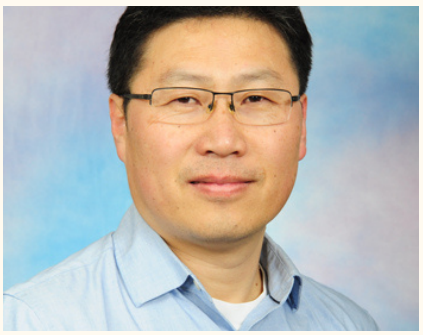



**PI:** Taylor Takla- *Psychiatry and Behavioral Neurosciences*

## Investigating Fear of Falling in Multiple Sclerosis: An Interplay of Neural, Motor, Cognitive, and Psychological Factors

Award Number: 1F31HD116491-01

Falls are a major public health concern in persons with Multiple Sclerosis (MS), resulting in expensive medical costs, serious injuries, reduced quality of life, and loss of independence. Fear of falling (FOF) is both a cause and consequence of falls that traps individuals in a vicious cycle of reduced balance confidence, avoidance behavior, physical deconditioning, increased fall risk, and subsequent greater FOF. This study aims to comprehensively examine neural, motor, cognitive, and psychological contributions to FOF and determine their long-term impact on future falls and physical activity, with an overarching goal of identifying targets for rehabilitation strategies to break the vicious FOF cycle and ultimately reduce falls in the MS community.

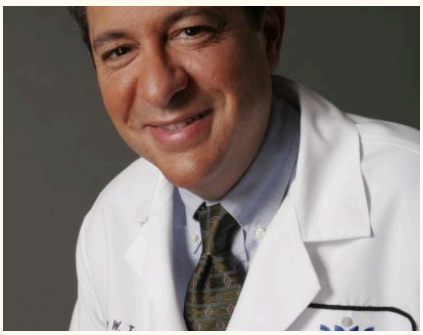


**PI:** *Dr. Yubin Ge- Oncology*

## Enhancing treatments for myeloid leukemia associated with Down syndrome

Award Number: 1R01CA290480-01

Down syndrome (DS) children have a significantly higher risk of developing acute leukemias compared to non- DS children. The goal of this proposal is to determine the role of the DS bone marrow microenvironment in myeloid leukemia associated with DS (ML-DS) therapy response, furthering our understanding of the mechanisms underlying the extremely high cure rates of children with ML-DS. This proposal will also identify a novel treatment strategy of enhancing cytarabine treatment to further improve treatment outcome and reduce relapse of ML-DS patients.



**PI:** *Dr. Jeffrey Taub- Pediatrics*


**PI:** *Dr. Richard Pilsner-Obstetrics & Gynecology*

## Seminal Plasma Metabolomic Signatures, Preconception Phthalates and Reproductive Outcomes

Award Number: 1R01ES036537-01

Phthalates, a class of endocrine disrupting compounds used in plastics and personal care products, are ubiquitous environmental contaminants resulting in widespread human exposure. In humans, male phthalate exposure is associated with low sperm quality, poor embryo development and longer time to pregnancy. We will conduct the following aims: 1) determine the associations of preconception urinary phthalate metabolite concentrations with seminal plasma metabolomics in SEEDS; 2) determine the relationships of seminal plasma metabolites and reproductive outcomes in SEEDS and 3) replicate and further characterize seminal plasma metabolomic findings in an independent set of participants from the LIFE Study.

## Redirected CaMKII for Restoring Deficits in Alzheimer's Disease Models

Award Number: 1R21AG083760-01A11

Alzheimer's disease is a progressive, degenerative brain disease. Converging lines of evidence have documented a significant alteration in the subcellular distribution of calcium/calmodulin- dependent protein kinase II alpha (CaMKII), which is a critical memory molecule, in many Alzheimer's disease models. Therefore, based on the complex formation and dynamics of CaMKII, we propose to evaluate our molecular intervention in reversing the CaMKII dysregulation, tau phosphorylation, dendritic spinopathy, and memory deficits in in vitro and in vivo models of Alzheimer's disease.

**PI:** *Dr. Joongkyu Park- Pharmacology*

# NEW NIH AWARDS CONTINUED

**PI:** *Dr. Zhibing Zhang-Physiology*

### The mechanisms of MEIG1 complex in mammalian spermiogenesis and fertilization

Award Number: 1R01HD114311-01A1

The proposed studies will elucidate the molecular mechanism of the MEIG1 complex in mammalian spermiogenesis and fertilization. The studies will for the first time dissect the functional relationships of a macromolecular complex in the manchette essential for spermiogenesis and establish an in vivo system to study IMT. In addition, the studies will also reveal a novel mechanism in spermatid chromatin remodeling for normal fertilization and embryogenesis.

**PI:** Joongkyu Park- *Pharmacology*

### Local Protein Synthesis in Tau Pathology Neurodegeneration

Award Number: 1R01AG089566-01

Brains with Alzheimer's disease display the presence of increased protein accumulations, such as intracellular tau inclusions (neurofibrillary tangles) and extracellular beta-amyloid deposits (senile plaques). Importantly, it is now widely accepted that local protein synthesis plays essential roles in neurons and, in particular, that key components of protein synthesis subserving synapses and synaptic plasticity take place in dendrites, in association with dendritic spines, the cellular site of synaptic plasticity. These observations lead us to hypothesize that pathogenic forms of tau specifically interfere with dendritic protein synthesis and that this effect contributes to the pathologic features seen in Alzheimer's disease.

# OTHER NEW AWARDS

**DETERMINING THE ROLE OF CPCDH ISOFORMS IN RETINAL AXON MORPOGENESIS AND CIRCUIT FORMATION - FELLOW SEOYOUNG SON**
**PI:** *Dr. Andrew Garrett -Department of Pharmacology-25X6A*

**COUPLES MOTIVATIONAL INTERVIEWING TO REDUCE DRUG USE & HIV RISK IN VULNERABLE MALE COUPLES**
**PI:** *Dr. Angulique Outlaw-Department of Family Medicine-25X7E*

**IMPROVING MENTAL HEALTHCARE FOR PATIENTS WITH HS**
**PI:** Dr. Steven Daveluy-Department of Dermatology-25X69

**CHARACTERIZING UPSTREAM ENVIRONMENTAL, SOCIAL, AND ECONOMIC DETERMINANTS OF HEALTH AND THEIR ASSOCIATION WITH CANCER**
**PI:** *Dr. Theresa Hastert- Department of Oncology-25X5K*

**CREATING A POPULATION-BASED UNCERTAINTY MODEL FOR GASTROINTESTINAL ORGANS AT RISK IN HEAD OF PANCREAS CANCER**
**PI:** *Dr. Jacob Burmeister-Department of Oncology-25X75*

**DECIPHERING IMMUNE CELL PHENOTYPES IN CHRONIC CHORIOAMNIONITIS TO DEVELOP BIOMARKERS FOR PRETERM BIRTH**
**PI:** *Dr. Roger Pique-Regi-Center for Molecular Genetics-25X7Q*

**REGULATION OF INTERFERON SIGNALING BY PD-L1 IN CANCER CELLS**
**PI:** *Dr. HyeonJoo Cheon-Department of Oncology-25X83*

**INTEGRATIVE ANALYSIS OF LUNG CANCER ETIOLOGY AND RISK**
**PI:** Dr. Ann Schwartz- Department of Oncology-25X85

**MULTILEVEL SOCIAL DETERMINANTS OF HEALTH, CELLULAR AGING AND OUTCOMES IN OLDER CANCER SURVIVORS: DISCOVERY AND TESTING OF NEW TRANSDISCIPLINARY PARADIGMS FOR IMPROVING HEALTH AND REDUCING DISPARITIES**
**PI:** *Dr. Ann Schwartz-Department of Oncology-25X8N*

**CLINICAL PSYCHOLOGY INTERNSHIP TRAINING IN BEHAVIORAL HEALTH CARE FOR HIGH NEED PEDIATRIC POPULATIONS**
**PI:** *Dr. Jill Meade-Department of Pediatrics-25X84*

**ADVANCING COMMUNITY-ENGAGED SCIENCE: UTERINE CANCER**
**PI:** *Dr. Michael Wilson-Department of Oncology-25X8D*

**DEEP LEARNING-DESIGNED PD-1 MIMETICS FOR ENHANCED IMMUNE CHECKPOINT INHIBITION**
**PI:** *Dr. Benjamin Kidder-Department of Oncology-25X8E*

**DHHS/NCI R01CA290480 ENHANCING TREATMENTS FOR MYELOID LEUKEMIA ASSOCIATED WITH DOWN SYNDROME**
**PI:** *Dr. Jeffrey Taub-Department of Pediatrics-2N77*

**REVERSING IMMUNE TOLERANCE IN OVARIAN CANCER**
**PI:** *Dr. Gil Mor-Department of Obstetrics & Gynecology-25X6N*

**BROAD-SPECTRUM THERAPEUTICS AGAINST SARS-COV-2 3CL PROTEASE**
**PI:** *Dr. Ladislau Kovari-Department of Biochemistry, Microbiology and Immunology-25X8H*

**ADMINISTRATIVE SUPPLEMENT TO DUAL FUNCTION OF HSP70 IN CYTOPROTECTION OF TUMOR CELLS AND GENERATION OF PERMISSIVE MICROENVIRONMENT**
**PI:** *Dr. Hasan Korkaya -Department of Oncology-2N78*

**INNATE LYMPHOID CELL CONTROL OF MUCOSAL HIV INFECTION**
**PI:** *Dr. Marta Rodriguez-Garcia-Department of Biochemistry, Microbiology and Immunology-25X87*

**LARGE-SCALE IMPLEMENTATION OF COMMUNITY CO-LED MATERNAL SEPSIS CARE PRACTICES TO REDUCE MORBIDITY AND MORTALITY FROM MATERNAL INFECTION**
**PI:** *Dr. Robert Sokol - Department of Department of Obstetrics & Gynecology-25X97*


# SOM RESEARCH FACTS

*The SoM award total at this point for 2024 is $108,092,416 and approximately 62% of the proposals submitted were awarded.*

*We also compared the number of proposals submitted and the number of awards received through August 2023 to this year, see below for the figures*

## Proposals

2023 $473,868,553/579 submitted
2024 $486,469,900/530 submitted**

## Awards

2023 $138,046,171/391 awarded
2024 $108,092,416/326 awarded**

**Please note that the August amounts for proposals and awards for August 2024 are being verified by OVPR and will increase after that process as this is award and proposal information as of 8/23/24.

## Note:

*We strive to include all new awards for the quarter in the newsletter. However, if you wish to guarantee the mention of your award, please don't hesitate to send the details to us at WSU-RAS@wayne.edu*


## OTHER NEW AWARDS

**IDENTIFYING FACTORS ASSOCIATED WITH PROSTATE CANCER PROGRESSION AND SURVIVAL IN AFRICAN AMERICAN MEN: THE RESPOND COHORT**
*PI: Dr. Jennifer Beebe-Dimmer-Department of Oncology-25X93*

**MATEC - MIDWEST AIDS TRAINING & EDUCATION CENTER - MICHIGAN**
*PI: Dr. Gretchen Newman-Department of Internal Medicine-25X6T*

**OCTOPAMINE CONTROLS ADAPTATION TO ENDURANCE EXERCISE IN DROSOPHILA**
*PI: Dr. Robert Wessells - Department of Physiology-2N73*

**SUPPORT FOR THE POISON CONTROL OUTREACH PROGRAM**
*PI: Dr. Varun Vohra- Department of Emergency Medicine-25X6U*

**DEVELOPMENT OF A TARGETED PROTEIN DEGRADER WITH LUTETIUM-177 FOR RADIONUCLIDE THERAPY FOR PROSTATE CANCER**
*PI: Dr. Sheryl Roberts - Department of Oncology-25X9E*

**SUPPORT FOR MIPDC EDUCATION OUTREACH PROGRAM**
*PI: Dr. Varun Vohra- Department of Emergency Medicine-25X9G*

**ROLE OF INTRACELLULAR PD-L1-REGULATED TYPE I INTERFERON IN CANCER**
*PI: Dr. HyeonJoo Cheon-Department of Oncology-25X9D*

**CFF CARE CENTER GRANT**
*PI: Dr. Zubin Mukadam-Department of Internal Medicine-25X86*

## NEW IN RESEARCH

- Effective 1/25/25 NIH is updating the Genomic Data Sharing Policy **NOT-OD-24-157**
- Effective for due dates after 5/25/25 changes are coming for the biographical sketch and Current and Pending support **NOT-OD-24-163**
- Effective immediately NINDS has instituted changes for R35 awards. **NOT-NS-24-124**
- Effective for all awards that end after 10/1/24 AHRQ is requiring the mandatory use of ERA's Grant Closeout Module. **NOT-HS-24-020**
- Effective 10/1/24 the eRA system-generated email regarding the submission of JIT information will be retired. **NOT-OD-24-165**