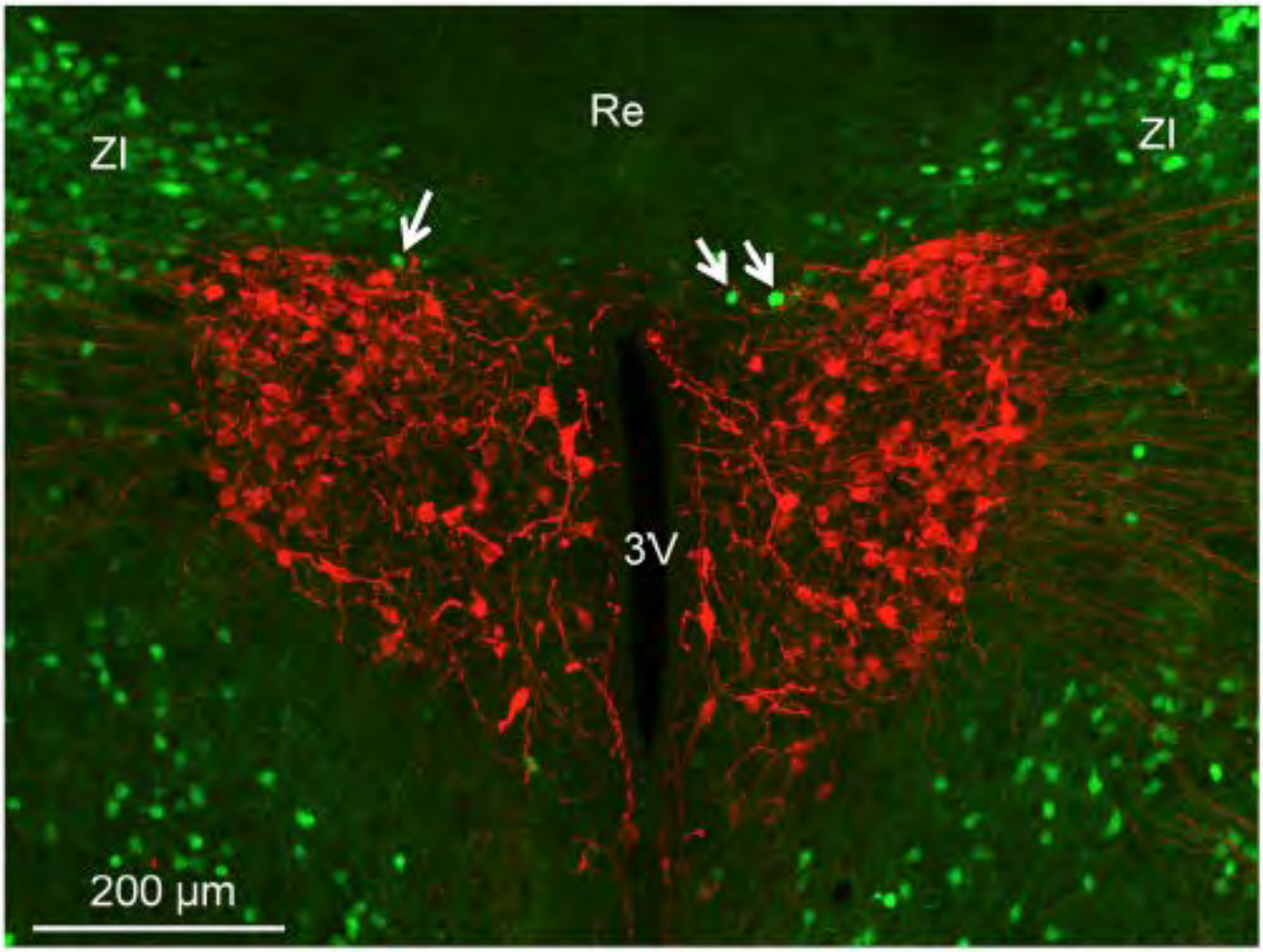
THE NEUROSCIENCE INSTITUTE
UNIVERSITY OF TENNESSEE HEALTH SCIENCE CENTER

Neuroscience Center of Excellence



Annual Report to the

Tennessee Higher Education Commission

Fiscal year 2016 (7/1/2015-6/30/2016)

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I. ADMINISTRATIVE STRUCTURE

Director:	Professor William E. Armstrong, PhD
	Department of Anatomy and Neurobiology
Co-Director:	Professor Tony Reiner, PhD
	Department of Anatomy and Neurobiology
Administrative Specialist:	Summer Hillman
Program Coordinator/	
IT Specialist:	Brandy Fleming, MS

Neuroscience Executive Committee:

Matthew Ennis, PhD, Professor and Chair, Department of Anatomy and Neurobiology

Mark LeDoux, M., PhD, Professor, Department of Neurology

Charles Leffler, PhD, Professor, Department of Physiology

Tony Reiner, PhD, Professor and NI Co-Director, Department of Anatomy and Neurobiology

Susan E. Senogles, PhD, Associate Professor, Department of Molecular Sciences

Jeff Steketee, PhD, Professor, Department of Pharmacology

Jim Wheless, MD, Professor, Chief of Pediatric Neurology and LeBonheur Chair, Le Bonheur Hospital/UTHSC

Center Address:

University of Tennessee Health Science Center
875 Monroe Ave., Suite 426, Wittenborg Building
Memphis TN 38163
(901) 448-5960
http://www.uthsc.edu/neuroscience

Organizational Structure:

The Neuroscience Center of Excellence comprises the administrative core and financial engine of the University of Tennessee Health Science Center's (UTHSC) Neuroscience Institute (NI), which is located within UTHSC's College of Medicine in Memphis, TN. Prof. William E. Armstrong is the Director, and Prof. Tony Reiner is the Co-Director. The Director reports to the Executive Dean of the College of Medicine at UTHSC, currently David Stern, M.D. Physically the NI is housed within twelve different departments in the College of Medicine and some other UT departments, with an administrative suite in Rm 426 Wittenborg Building at UTHSC. Affiliated members reside at UT Knoxville, Oak Ridge National Laboratory, St. Jude Children's

Hospital, LeBonheur Children's Hospital, Christian Brothers University, and at the University of Memphis.

Dr. Armstrong supervises Ms. Brandy Fleming, MS, who is our Program Coordinator and also functions as our IT specialist. Ms. Fleming and Dr. Armstrong supervise our administrative assistant Summer Hillman. Ms. Hillman organizes the seminar series including all travel arrangements, assists in ordering and billing, and handles NI official correspondence. The Neuroscience Imaging Center is managed by TJ Hollingsworth, PhD. Dr. Hollingsworth reports to Dr. Armstrong.

II. BUDGET (see Schedule 7, page 6)

A. FY 2016. The FY 2016 appropriated budget for the UTNI was $594,404. We carried forward $259,205 from the previous year for a total budget of $853,609. This carryover reflects amounts encumbered but unspent for Graduate Stipends that were picked up previously by NI and are now picked up by UTHSC for the student's first 18 months, and monies encumbered to support two new faculty hires for whom we still provide seed packages (Kaczorowski and Chizhikov).

This past FY, we expended $529,550 total personnel costs (including salaries and fringe). Personnel costs include administrative supplements for the NI Director (who also directs the NI Imaging Center), the NI Co-Director, a full-time Program Coordinator/ IT specialist, a full time Administrative Specialist, a full time Technical Manager of Imaging Center, 1 graduate student partially supported by startup funds, matching support for 6 graduate student stipends and 8 matching postdoctoral fellowships (see below).

Students: We awarded matching funds for 10 graduate stipends to PIs with Neuroscience track graduate students ($129,270). The mentors were located in the departments of Anatomy and Neurobiology, Ophthalmology, and Pharmacology.

Postdoctoral Support: We provided matching funds for 4 postdoctoral fellows, at ~$5,000 each and 2 at ~$39,000 each ($100,580). The NI Mentors are located in the departments of Anatomy and Neurobiology, Ophthalmology, and Pharmacology.

Neuroscience Imaging Center: Currently the NI Imaging Center is run by Dr. TJ Hollingsworth. We supplement our cost-recovery program to keep user fees low, helping to pay the service contracts on our JEOL 2000 Electron Microscope, the Zeiss 710 confocal microscope, and the Neurolucida workstation. This year our cost-recovery program took in $43,727, which is used against the fees needed to pay the service contracts on the Zeiss 710 ($22,689), the JEOL 2000 ($16,800) and the Neurolucida workstation ($4,490).

Neuroscience Behavioral Core: The procedures for use and available equipment can be viewed at: http://www.uthsc.edu/neuroscience/behavioral-core/index.php. Due to the generally low cost of maintenance (PIs provide their own technicians to use the equipment), NI has not yet instituted fee for service in this facility.

Neuroscience Microtomy Core: The equipment available for use can be viewed at: http://www.uthsc.edu/neuroscience/imaging-center/microtomy.php..

Seminars and Symposia: Additional funds went to support travel/lodging/meals ($20,136) and honoraria ($3,500) for the Neuroscience Seminar series, and for a joint symposium with the Urban Child Institute entitled: "Early Childhood Resilience"(**see Appendix 4**).

Research Projects: We continued to pay startup funds for our two new faculty, Drs. Chizhikov and Kaczorowski, each of whom is getting ~$200,000 from NI over a 5 year period, from FY 2013-2018. Their unspent funds are reflected in our carryover.

Undergraduate Fellowships: NI supported three undergraduate Neuroscience Merit Fellows (total, $12,000) for summer research.

Travel Awards: $3,500 in travel awards for graduate students and postdoctoral fellows were awarded.

B. <u>FY 2017</u>. We will carryover $265,311 to the coming fiscal year, and have been appropriated $584,788 for a total of $850,099. In addition to providing support for all the NI staff (Program Coordinator, Administrative Assistant, and Imaging Center Manager), here is a breakdown of the major anticipated projects for FY2016:

Students: For the coming year, we have awarded matching funds for 8 graduate stipends to PIs with Neuroscience track graduate students. Mentors are located in the departments of Anatomy and Neurobiology, Neurology, and Ophthalmology. The NI match is ~$14,500 each for 6 of these (~$87,000), and variable amounts for the remaining 2 student (~$7,600, $18,000), making an expected total of ~$113,000.

Postdoctoral Support: Due to budget cuts and our commitment to seed packages for faculty, this year we will provide limited funds for 3 postdoctoral fellows (~$5,000 each = $15,000 total) for the coming year. These will be given to postdoctoral awardees from last year since we typically fund 2 years. In addition, we have allotted another $30,000 for new postdoctoral fellows, bringing the total expected postdoctoral expenditures to $45,000 during FY 2017.

Neuroscience Imaging Center: We will pay the service contracts on the JEOL 2000 ($16,800), for the Zeiss 710 Confocal ($22,689). Our Microbrightfield contract for the Neurolucida workstation is already paid for 2017.

Neuroscience Behavioral Core: We will continue to support the Behavioral Core in FY2017, but expenditures are expected to be minimal. However, should a need arise for additional equipment, or for a part-time assistant to help run behavioral studies, NI would consider additional funding assuming a fee for service program were approved and initiated.

Neuroscience Microtomy Core: Currently we have no contracts for any of the Microtomy Core equipment, and will pay for repairs as needed. In the past, service has been on the order of $1500 for the cryostats.

NI Faculty: We will provide administrative supplements to Drs. Armstrong and Reiner. In 2013, NI committed $189,000 to Dr. Catherine Kaczorowski and $195,000 to Dr. Victor Chizhikov, to be spent over 4-5 years. During FY2016, these faculty spent ~$64,000 combined, and Dr. Chizhikov will have ~$80,00 to spend in over FYs 2017 and 2018.. Dr. Kaczorowski however, has announced that she is taking a new job at Jackson

Laboratories in Bar Harbor, ME. We intend to apply her remaining seed money (~$100,000) towards a newly approved position. We are currently interviewing candidates and should have a new faculty member sometime in 2017.

Research Projects and Bridge Funding: We can provide small amounts of bridge assistance, but this will be limited by our commitments to faculty seed packages. As mentioned above, we have been approved by Dean of the College of Medicine to hire a new Neuroscience faculty member in the area of neurodegenerative disesase, and may be asked to contribute some that seed package as well. Our current candidates have strengths in Alzheimer's Disease, traumatic brain injury, and stroke.

Seminar Series and Community Outreach: We will offer our weekly Neuroscience Seminar series and will also sponsor a Neuroscience Symposium in the spring of 2017 (topic to be determined). We will co-sponsor (with the National Insitute on Drug Abuse) a community outreach symposium for high school students and teachers on Oct. 1, 2016 entitled "Drugs Change the Brain, but not in a Good Way". We will continue to fund summer Undergraduate Neuroscience Merit Fellowships to Rhodes and Christian Brothers University students who are doing research projects in Neuroscience towards fulfilling their degree requirements (from 2-4 awards, depending on qualifications).

Schedule 7

CENTERS OF EXCELLENCE ACTUAL, PROPOSED, AND REQUESTED BUDGET

Institution: UT Health Science Center Center: Neuroscience

Total

	FY 2015-16 Actual			FY 2016-17 Proposed			FY 2017-18 Requested		
	Matching	Appropr.	Total	Matching	Appropr.	Total	Matching	Appropr.	Total
Expenditures		$588,298							
Salaries									
Faculty	$177,955	$5,000	$182,955	$183,293	$5,000	$188,293	$188,792	$5,000	$193,792
Other Professional	$218,605	$204,660	$423,265	$225,163	$211,064	$436,228	$231,918	$217,396	$449,314
Clerical/ Supporting	$0	$43,401	$43,401	$0	$45,891	$45,891	$0	$44,531	$44,531
Assistantships	$148,780	$171,942	$320,722	$153,243	$186,220	$339,463	$127,841	$156,780	$284,621
Total Salaries	$545,340	$425,003	$970,343	$561,700	$448,175	$1,009,875	$548,551	$423,707	$972,258
Longevity (Exclude from Salaries and include in Benefits)	$5,242	$2,481	$7,723	$5,399	$2,995	$8,394	$5,561	$3,085	$8,646
Fringe Benefits	$75,030	$102,066	$177,096	$77,281	$104,245	$181,526	$79,599	$104,746	$184,346
Total Personnel	$625,612	$529,550	$1,155,162	$644,380	$555,415	$1,199,796	$633,712	$531,539	$1,165,250
Non-Personnel									
Travel		$17,616	$17,616		$30,000	$30,000		$20,000	$20,000
Software		$336	$336		$500	$500		$500	$500
Books & Journals		$0	$0		$0	$0		$0	$0
Other Supplies		$37,534	$37,534		$194,583	$194,583		$26,790	$26,790
Equipment		$0	$0		$0	$0		$0	$0
Maintenance		$21,300	$21,300		$67,800	$67,800		$50,000	$50,000
Scholarships			$0			$0			$0
Consultants			$0			$0			$0
Renovation			$0			$0			$0
Other Services & Expenditures		-$43,727	-$43,727		-$30,000	-$30,000		-$30,000	-$30,000
Contractual & Special Services		$12,375	$12,375		$20,000	$20,000		$15,000	$15,000
Insurance & Interest		$8,107	$8,107		$8,200	$8,200		$9,000	$9,000
Media Processing		$1,812	$1,812		$300	$300		$500	$500
Communication		$1,165	$1,165		$450	$450		$500	$500
Professional Services & Memberships		$55	$55		$300	$300		$0	$0
Rentals & Insurance		$2,175	$2,175		$2,550	$2,550		$2,551	$2,551
			$0			$0			$0
			$0			$0			$0
			$0			$0			$0
Total Non-Personnel	$0	$58,748	$58,748	$0	$294,683	$294,683	$0	$94,841	$94,841
GRAND TOTAL	$625,612	$588,298	$1,213,910	$644,380	$850,099	$1,494,479	$633,712	$626,380	$1,260,091
Revenue									
New State Appropriation	$0	$594,404	$594,404		$584,788	$584,788		$626,380	$626,380
Carryover State Appropriation	$0	$259,205	$259,205		$265,311	$265,311		$0	$0
New Matching Funds	$625,612		$625,612	$644,380		$644,380	$633,712		$633,712
Carryover from Previous Matching Funds			$0			$0			$0
Total Revenue	$625,612	$853,609	$1,479,221	$644,380	$850,099	$1,494,479	$633,712	$626,380	$1,260,092

III. EXTRAMURAL FUNDING OF NEUROSCIENCE FACULTY

The UT Neuroscience Institute is a concentrated, interdepartmental Neuroscience program. For FY2015-2016, Anatomy and Neurobiology (10 funded Neuroscientists) was ranked ***14th in the category of Neuroscience departments among public university medical schools in NIH funding, and 23rd among public university Anatomy and Cell Biology Departments.*** Other participating NI departments that are well ranked include **Physiology** (6 funded NI members), which was ranked ***15th among public medical schools and 28th overall*** (of 82), and **Pharmacology** (6 funded members), ***ranked 25th in public universities, and 44th*** *overall* (of 94) (Statistics from Blue Ridge Institute for Medical Research). The total annual grant dollars (total costs) currently held by faculty associated with the NI at UTHSC (*i.e.*, excluding affiliate members, such as St. Jude, and excluding grants in no cost extensions) is **$14,386,319.** The research grants (current year total costs) currently held by individual faculty of the NI are listed by Principal Investigator in **Appendix 1**. These values are reported to us by Research Administration at UTHSC. Appendix 4 includes some examples of recently awarded faculty.

IV. HISTORY OF THE NEUROSCIENCE INSTITUTE

The Neuroscience Center of Excellence at UTHSC was established in 1985 and designated an accomplished Center of Excellence by the Tennessee Higher Education Commission in 1988. In 1998, the Neuroscience Center of Excellence was designated as the University of Tennessee Neuroscience Institute, with dedicated space in the Wittenborg, Link and Johnson buildings. The Neuroscience Center of Excellence award was designed to support graduate and postdoctoral education, to recruit and provide initial support to new neuroscience faculty, to renovate laboratory facilities, to purchase research equipment, to host symposia, a weekly seminar series, and to support community outreach programs such those associated with Brain Awareness Week. The Director from 1985-2002 was Dr. Steven T. Kitai. Dr. David Smith was named director from 2002-2006 (deceased, Sept. 2006), and Dr. William Armstrong has been director since 2006.

The program brings together neuroscience faculty members from the Departments of Anatomy and Neurobiology, Genetics, Genomics and Bioionformatics, Molecular Sciences, Neurology, Neurosurgery, Ophthalmology, Pathology, Pediatrics, Pharmaceutical Sciences, Pharmacology, Physiology, Psychiatry, and Surgery, and in the Department of Biochemistry and Cellular and Molecular Biology at the University of Tennessee, Knoxville. Strong affiliations exist with Methodist University Hospital, Le Bonheur Children's Hospital, St. Jude's Children Hospital, the University of Memphis, Rhodes College, Christian Brother's University and the Urban Child Institute. The interdepartmental nature of the program and the collaborations it fosters provide the cross-disciplinary environment necessary for high quality neuroscience research, training and patient care.

The Director and Co-Director frequently interact with Executive Committee members and consult with these members regarding NI membership, research, symposia, and postdoctoral awards. For funding awards, applications are solicited and each application is read and ranked by at least 3 members of the committee. Final rankings are compiled by the Director and Co-Director and passed back to the Executive Committee for approval before funding.

V. FACULTY OF THE NEUROSCIENCE INSTITUTE

The Neuroscience Institute is currently comprised of 88 faculty members in several different departments on the UTHSC campus, including those with primary appointments at St. Jude Children's Research Hospital and at the University of Memphis and Christian Brothers University, and one faculty member at UT Knoxville. Faculties are listed with each department; those with primary appointments outside UTHSC or UTK are so indicated. * indicates new member. We have added 7 new members this past FY.

Department of Anatomy and Neurobiology

William E. Armstrong, Ph.D., Professor and NI Director
John D. Boughter, Jr., Ph.D. Associate Professor
Joseph C. Callaway, Ph.D., Associate Professor
Angela Cantrell, Ph.D., Assistant Professor
Viktor Chizhikov, Ph.D., Assistant Professr
Alessandra d'Azzo, Ph.D., Affiliated Professor (St. Jude)
Hong Wei Dong, Ph.D., Assistant Professor
Michael A. Dyer, Ph.D., Affiliated Professor (St. Jude)
Matthew Ennis, Ph.D., Professor and Chair
Malinda E. C. Fitzgerald, Ph.D., Adjunct Professor (Christian Brothers Univ.)
Max Fletcher, Ph.D., Associate Professor
Robert C. Foehring, Ph.D., Professor
Kristin Hamre, Ph.D., Associate Professor
Detlef Heck, Ph.D., Associate Professor
Scott Heldt, Ph.D., Assistant Professor
Marcia G. Honig, Ph.D., Professor
Catherine Kaczorowski, Ph.D., Assistant Professor
Hitoshi Kita, Ph.D., Professor
Peter J. McKinnon, Ph.D., Affiliated Professor (St. Jude)
James I. Morgan, Ph.D., Affiliated Professor (St. Jude)

Randall J. Nelson, Ph.D., Professor

Anton J. Reiner, Ph.D., Professor and NI Co-Director

Reese S. Scroggs, Ph.D., Associate Professor

J. Paul Taylor, M.D., Ph.D., Affiliated Professor (St. Jude)

Robert S. Waters, Ph.D., Professor

Stanislav Zahkarenko, Ph.D. Affiliated Associte Professor (St. Jude)

Jian Zuo, Ph.D., Affiliated Professor (St. Jude)

Department of Biochemistry and Cellular and Molecular Biology, UT Knoxville

Rebecca A. Prosser, Ph.D., Professor

Department of Genetics, Genomics and Informatics

Robert W. Williams, Ph.D., UT-Oak Ridge National Laboratory Governor's Chair in Computational Genomics Professor, and Chair

Byron Jones, Ph.D., Professor

Lu Lu, Ph.D., Associate Professor

Department of Medicine/Cardiology

Syamal Bhattacharya, Ph.D., Professor

Department of Molecular Sciences

Susan E. Senogles, Ph.D., Professor

Department of Neurology

Annie Chan, Ph.D., Assistant Professor

Michael Jacewicz, M.D., Professor

Mark S. LeDoux, M.D., Ph.D., Professor

Michael C. Levin, M.D., Professor

Michael McDonald, Ph.D., Associate Professor

Thaddeus S. Nowak, Ph.D., Professor

Lawrence T. Reiter, Ph.D., Associate Professor

Jack Tsao, MD, PhD, Professor

Department of Neurosurgery

Frederick Boop, M.D., Professor and Chair

Department of Ophthalmology

Edward Chaum, M.D., Ph.D., Plough Foundation Professor

Rajashekhar Gangaraju, Ph.D., Assistant Professor

Monica M. Jablonski, Ph.D., Professor

Vanessa Marie Morales-Tirado, Ph.D., Assistant Professor

Department of Pediatrics, Pediatric Neurology and LeBonheur Children's Hospital

Abbas Babajani-Feremi, Ph.D., Assistant Professor, Pediatrics, Le Bonheur

Joan Han, M.D., Associate Professor, Pediatrics, LeBonheur

Masanori Igarashi, M.D., Associate Professor, Pediatric Neurology, Le Bonheur

Kathryn McVicar, M.D., Assistant Professor, Pediatric Neurology, Le Bonheur

Amy McGregor, M.D., Assistant Professor, Pediatric Neurology, Le Bonheur

Robin L. Morgan, M.D., Assistant Professor, Pediatric Neurology, Le Bonheur

Shalini Narayana, Ph.D., Associate Professor, Pediatric Neurology, Le Bonheur

Andrew Papanicolaou, Ph.D., Professor, Pediatrics, Le Bonheur

Massroor Pourcyrous, M.D., Professor, Pediatrics

James W. Wheless, M.D., Professor and Chief of Pediatric Neurology, Le Bonheur

Department of Pharmaceutical Sciences

Duane D. Miller, Ph.D., Van Vleet Professor and Chairman

Bob Moore, Ph.D., Professor

Department of Pharmacology

Suleiman W. Bahouth, Ph.D., Professor

Hao Chen, Ph.D., Assistant Professor

Alex M. Dopico, M.D., Ph.D., Professor

Francesca-Fang Liao, Ph.D., Professor

Kafait U. Malik, Ph.D., Professor

Kazuko Sakata, Ph.D., Associate Professor

Burt Sharp, M.D., Van Vleet Professor

Jeffery Steketee, Ph.D., Professor

Steven J. Tavalin, Ph.D., Associate Professor

Fu-Ming Zhou, M.D., Ph.D., Associate Professor

Department of Physiology

Julio Cordero-Morales, Ph.D., Assistant Professor

Ioannis Dragatsis, Ph.D., Associate Professor

Jonathan Jaggar, Ph.D., Professor

Charles W. Leffler, Ph.D., Professor

Kristen M.S. O'Connell, Ph.D., Associate Professor

Helena Parfevona, Ph.D., Professor

Valeria Vásquez, Ph.D. Assistant Professor

Paula Dietrich, Ph.D., Assistant Professor

Department of Preventive Medicine

*Khyobeni Mozhui, Ph.D., Assistant Professor

University of Memphis

Ramin Homayouni, Ph.D., Adjunct Professor, Neurology

St. Jude Children's Hospital (see Departments Above for Affiliated Appointments)

Michael Dyer, Ph.D., Professor

Alessandra D'Azzo, Professor

Peter McKinnon, Ph.D., Professor

James Morgan, Ph.D., Professor

J. Paul Taylor, M.D., Ph.D., Professor

Stanislav Zakharenko, Ph.D., Associate Professor

Jian Zuo, Ph.D., Professor

VI. AREAS OF NEUROSCIENCE RESEARCH

The research programs of the faculty of NI are diverse, representing most areas of modern neuroscience research. Within the program are several strong areas of research focus, where in many instances basic scientists and clinical investigators interact to investigate the mechanisms of diseases of the nervous system. We can be organized into the following groups based on collaborations and research interests:

Neurological and Neurodegenerative Disorders

Neurological diseases include disorders of the nervous system arising from nervous system malfunction or degeneration. Among these are the movement disorders (which include Parkinson's disease, essential tremor,

Huntington's disease, dystonia, myoclonus, Tourette's syndrome, paroxysmal dyskinesias, drug-induced dyskinesias, restless legs syndrome, spinocerebellar ataxias, spasticity, multiple system atrophy, and progressive supranuclear palsy), dementing diseases (notably Alzheimer's), primary motor diseases (such as amyotrophic lateral sclerosis and multiple sclerosis), and diseases of neurotransmission abnormality (such as epilepsy). The integration of genetic, cellular, and physiological information will be required to unravel the pathophysiology of each disorder and improve therapeutics. Due to aging of our population, movement disorders and dementing diseases will place an enormous and increasing financial burden on society. Investigations by this group will play an important role in the breakthroughs needed to understand and treat these diseases. Current areas of focus include: cellular and network physiology of basal ganglia in the context of Parkinson's disease, neurobiology of neuronal dysfunction and death in Huntington's disease, and molecular biology of synaptogenesis in dystonia. Researchers also study the potential protective effects of hypothermia on cerebral ischemic insults, Alzheimer's disease, and molecular mimicry in immune-mediated neurological disease. * Designates New Member

Faculty: A. Babajani-Feremi	*Ped. Neurology*	I. Dragatsis	*Physiology*
R. Homayouni	*U of Memphis*	D. Heck	*Anat. & Neurobiology*
M. Jacewicz	*Neurology*	B. Jones	*Genetics, Gen. Inform.*
C. Kaczorowski	*Anat. & Neurobiology*	H. Kita	*Anat. & Neurobiology*
M. LeDoux	*Neurology*	F-F. Liao	*Pharmacology*
S. Naryana	*Ped. Neurology*	T. Nowak	*Neurology*
A. Papanicolaou	*Ped. Neurology*	A. Reiner	*Anat. & Neurobiology*
L. Reiter	*Neurology*	J. Wheless	*Ped. Neurology*

Excitable Properties of Neurons

Behavior, mentation and physiological homeostasis are all a function of neuronal activity in the nervous system. This activity can be encoded by membrane polarity or in the rates and patterns of neuronal action potentials. Information is passed among neurons through synaptic transmission. Whether a neuron fires at any given moment is determined by the interaction of intrinsic membrane properties with synaptic inputs. Research in this group focuses on these properties from several viewpoints. At the molecular level, studies determine the genetic capacity for producing proteins related to specific ion channels and neurotransmitter receptors. Expression patterns of the proteins in classes of neurons impart a unique signature of ion channels and receptors. Electrophysiological recordings can reveal the properties of ionic currents underlying particular patterns of firing, the modulation of these currents by neurotransmitters, the precise properties of synaptic input, and the plasticity of neuronal activity. At a more global level, neuronal activity can be studied within an intact neuronal network and correlated with behavior. The common goal of this group is to understand how and why neuronal activity

occurs in both normal tissue and in neurological disorders. One of the members of this group, Kristen O'Connell, had a research article recently reviewed by the F1000 Prime Review group (**Appendix 4**).

Faculty:

R. Foehring	*Anat. & Neurobiology*	H. Kita	*Anat. & Neurobiology*
W. Armstrong	*Anat. & Neurobiology*	R. Nelson	*Anat. & Neurobiology*
J. Callaway	*Anat. & Neurobiology*	K. O'Connell	*Physiology*
J. Cordero-Morales	*Physiology*	R. Scroggs	*Anat. & Neurobiology*
A. Dopico	*Pharmacology*	S. Tavalin	*Pharmacology*
M. Ennis	*Anat. & Neurobiology*	R. Waters	*Anat. & Neurobiology*
C. Kaczorowski	*Anat. & Neurobiology*	V. Vásquez	*Physiology*
D. Heck	*Anat. & Neurobiology*		

Sensory Information Processing

Sensory systems extract information from the environment and provide the nervous system an interface with the outside world. Understanding the way in which this information is represented in neuronal activity is the focus of this research group. To understand sensory processing, we need to address the genetic basis of sensory function, the coding of information by individual sensory neurons at several levels of the nervous system, from peripheral receptors to cerebral cortex, and the role of the environment in shaping the responsiveness of these neurons through mechanisms of neuronal plasticity. Interactions between somatosensory and motor cortices, the effects of early alcohol exposure on sensory and motor processing, the control over gustatory information processing by descending influences from limbic forebrain, the genetics of taste processing, the processing of nociceptive (pain) information, and synaptic processing in the olfactory bulb are all areas of research addressed by this group.

Faculty:

M. Ennis	*Anat. & Neurobiology*	R. Nelson	*Anat. & Neurobiology*
J. Boughter	*Anat. & Neurobiology*	R. Scroggs	*Anat. & Neurobiology*
J. Cordero-Morales	*Physiology*	R. Waters	*Anat. & Neurobiology*
M. Fletcher	*Anat. & Neurobiology*	V. Vásquez	*Physiology*

Vision and Retina

We rely primarily on our sight to guide us through the world. Our eyes provide the major sensory input to the brain, accounting for one-third of the sensory axons entering the human nervous system. Understanding the normal function of the eye and the way this process is affected by disease is the primary interest of this group.

Researchers are addressing the normal development of the eye as well as the genetic basis of function and disease. The current program reflects a comprehensive and synergistic approach to important fundamental questions of eye genetics and development and the application of this new strategy to the treatment of disease. These investigators seek to understand normal and abnormal ocular development and how genes control these events. There is an active program in the application of molecular techniques to the modulation of retinal cell growth and cellular responses to injury using gene therapy. Current areas of focus include prevention and treatment of eye diseases and disorders, eye genetics in development and childhood diseases, retinal degenerative diseases, anterior segment disorders, response of the retina and optic nerve to injury, and genetic control of eye development. The primary goal of the vision and retina research group is to provide a framework for effective communications between research laboratories effecting eventually the translation of basic research to clinical applications.

Faculty:

E. Chaum	*Ophthalmology*	V. Morales-Tirado	*Ophthalmology*
M. Dyer	*Ophthalmology*	A. Reiner	*Anat. & Neurobiology*
M. Fitzgerald	*Anat. & Neurobiology/St. Jude*	R. Gangaraju	*Ophthalmology*
A. Iannaccone	*Anat. & Neurobiology/CBU*	R. Williams	*Gen., Genomics & Inform.*
M. Jablonski	*Ophthalmology*	J. Zuo	*Anat. & Neurobiology/St. Jude*

Neurogenetics and Development

This group is interested in gaining a deeper understanding of the origins of the impressive structural and functional complexity, diversity, and plasticity of the nervous system. Experimental and technical expertise of this group is broad, ranging from genetic and molecular analysis of the early stages of central and peripheral nervous system development to sophisticated functional assays of neuronal plasticity in response to environmental manipulations. The group is highly collaborative and includes a significant contingent of neuroscientists from St. Jude Children's Research Hospital (primarily the Departments of Developmental Neurobiology and Genetics). Current research tends to rely heavily on genetically defined lines of rodents. Topics of this research interest include: control of cell cycling and cell death in the brain, control of axon outgrowth and neurotrophic interactions during neural development, the formation, elimination and stabilization of synapses, functional maturation and environmental/drug sensitivity of the developing nervous system, genetics of disease vulnerability and outcome, and mechanisms of cell migration in the developing brain.

Faculty:

R. Williams	*Gen, Genomics, & Inform*	L. Lu	*Anat. & Neurobiology*

J. Boughter	*Anat. & Neurobiology*	P. McKinnon	*Anat. & Neurobiology/St. Jude*
V. Chizhikov	*Anat. & Neurobiology*	J. Morgan	*Anat. & Neurobiology/St. Jude*
A. d'Azzo	*Anat. & Neurobiology/St. Jude*	K. Mozui	*Preventive Medicine*
I. Dragatsis	*Physiology*	A. Reiner	*Anat. & Neurobiology*
K. Hamre	*Anat. & Neurobiology*	L. Reiter	*Neurology*
J. Han	*Pediatrics/Le Bonheur*	R. Smeyne	*Anat. & Neurobiology/St. Jude*
R. Homayouni	*Neurology/U Memphis*	R. Waters	*Anat. & Neurobiology*
M. Honig	*Anat. & Neurobiology*		

Mental and Addictive Disorders

Mental and addictive disorders are due to changes in normal brain function. This research group collaboratively explores changes in brain function that might explain mental disorders, such as depression and addiction, and drug-induced changes in brain function that may be responsible for relieving mental disorders or producing addiction. Research is currently being conducted using both *in vivo* and *in vitro* models. Molecular, cellular, neuroanatomical, neurophysiological, neurochemical, morphological and behavioral approaches are all being used to study the neuroscience of mental and addictive disorders. Research efforts are currently focused on depression and antidepressants and drugs of abuse, including cocaine, amphetamine, nicotine, ethanol and toluene. Several collaborative efforts currently exist within the group, including studies on drug effects on ion channels, drug-receptor adaptations, developmental neuroplasticity and interactions between stress and drugs.

Faculty:

H. Chen	*Pharmacology*	B. Sharp	*Pharmacology*
A. Dopico	*Pharmacology*	J. Steketee	*Pharmacology*
K. Hamre	*Anat. & Neurobiology*	S. Tavalin	*Pharmacology*
S. Heldt	*Anat. & Neurobiology*	F. Zhou	*Pharmacology*
K. Sakata	*Pharmacology*		

Neural Cell Signaling

The function, growth and survival of neural cells are regulated by extracellular and intracellular signals. One example is the release of neurotransmitter from a presynaptic neuron, which is sensed by the postsynaptic neuron via receptors that recognize specific neurotransmitter molecules. This information is relayed to the cell's interior by a series of elaborate and interdependent signaling intermediates and results in a change in the cell in response to its environment. This diverse group of researchers is investigating those processes that are collectively referred to as signal transduction using neural or neural-derived cell systems. Indeed, most drugs that are currently used in the management of neurological disorders, such as ADHD, depression, schizophrenia, Parkinson's disease and

others, exert their effects on signaling components. The goal of this group is to understand the involvement of signal transduction in both the normal functioning of neural cells and those pathological changes that are manifested in neurological disorders. Current areas of emphasis include: G-protein-coupled receptor signaling and regulation, growth factor receptor signaling, apoptosis, cellular migration, and mechanisms of neuronal injury and repair.

Faculty:

S. Senogles	*Molecular Sciences*	M. Jablonski	*Ophthalmology*
S. Bahouth	*Pharmacology*	J. Jaggers	*Physiology*
E. Chaum	*Ophthalmology*	M. LeDoux	*Neurology*
A. Dopico	*Pharmacology*	K. Malik	*Pharmacology*
R. Foehring	*Anat. & Neurobiology*	S. Tavalin	*Pharmacology*

VII. FACULTY PUBLICATIONS

The Neuroscience faculty at UTHSC is consistently productive, both in terms of peer-reviewed publications and participation in the national neuroscience community. Lists of peer-reviewed journal publications during the last academic year, as cited in PubMed are presented in **Appendix 2**. These PubMed-cited publications do not include the many chapters, reviews and other articles written by NI faculty. NI faculty members are indicated in **bold** in **Appendix 2.**

VIII. GRADUATE AND POSTDOCTORAL TRAINING

The Graduate education at UTHSC has moved away from department-based graduate programs to a single Integrated Biomedical Sciences Program (IBSP) for students in the health sciences. The students matriculate into this integrated program, but within the IBSP, each student chooses one of a number of tracks, of which Neuroscience is one. Students who enter the graduate program are eligible for predoctoral stipends and a waiver of tuition. NI funds matching level stipends for the third and fourth year for students in the Neuroscience Track. UTHSC has agreed to pay all IBS stipends prior to placement in labs, during which time they take coursework and do research rotations.

Students in the Neuroscience track take a sequence of several graduate core courses. In the first year, students enroll in Neuroscience Seminar, Neuroscience Student Symposium, Functional Neuroanatomy, and one of three courses offered in alternate years - students must take two of these three courses: Cellular Neuroscience, Behavioral Neuroscience or Developmental and Molecular Neurobiology. Students must also take a Statistics class, either at UTHSC or University of Memphis. A wide variety of additional courses are available to

Neuroscience graduate students on the UTHSC campus, including courses in biochemistry, physiology, pharmacology, histology, and genetics.

In addition to their coursework, graduate students register for 3-4 laboratory rotations during the first year of graduate study in order to help them choose a research mentor. They typically then enter a laboratory during their second year and begin to acquire the specialized training they will need to complete their doctoral dissertations. The Ph.D. degree is granted through the College of Graduate Health Sciences. The degree requires a minimum of six semesters of graduate work and normally requires from four-six years to complete.

During the past academic year, NI supported matching stipends for 10 students. In addition, 6 postdoctoral fellows were supported. Four graduate students previously supported by the NI were awarded their Ph.D. this past year, Bin Wang, Josh Douglas, Sumana Chintalapudi and Natalie Guley. The Neuroscience graduate track continues to see a trend in the number of excellent applications (judged by lab experience, GREs, and GPAs) among the entering students. (see Goals below and **Appendix 4**).

IX. NEUROSCIENCE SEMINARS AND SYMPOSIA

During the 2015-2016 academic year, the NI sponsored the weekly Neuroscience Seminar Series, hosting 24 seminars. Of these,18 neuroscientists from outside UTHSC and 6 within the NI presented their recent research findings to UT faculty and students. The NI seminar series serves as the basis for a graduate course, Neuroscience Seminar (ANAT 821), which is attended by all neuroscience track IPBS graduate students and within which they read papers by and meet with the visiting scientists. This seminar program is vital to the Neuroscience Track of the Graduate Program and to the entire UT neuroscience community, serving to keep our faculty and students abreast of recent developments and, perhaps even more important, to showcase our strengths to national and international leaders in neuroscience research visiting our campus. NI also assists in the Student Seminar course (course director William Armstrong), where students give seminars and receive critical feedback from their colleagues. A complete list of FY 2015-2016 seminar speakers and their topics are provided in **Appendix 3**.

NI continued its long-standing collaboration with the Urban Child Institute for a symposium on **"Early Childhood Resilience".** This symposium had ~100 attendees (primarily those involved with care of infants to preK children) and received news coverage in the Commercial Appeal and the University Record (**Appendix 4**). Speakers Pat Levitt Ph.D. from Children's Hospital, Los Angeles and Eraina Schauss, Ph.D. from University of Memphis. Dr. Levitt talked about how early life experiences influence social, emotional, and learning skills, and how these skills come together to help children succeed in the real world.. Dr. Schauss's talk about children can build resilience through play-based excercises.

X. GOALS OF THE INSTITUTE AND RECENT ACCOMPLISHMENTS

Four long-range goals of the UT Neuroscience Institute were established in 1985 and set to promote excellence in Neuroscience research, education and patient care at UTHSC. In the past several years we have made a concerted effort to promote Neuroscience at UTHSC, providing funds for numerous clinical and basic science research projects, funding postdocs in NI labs, and supporting the hiring of new Neuroscience faculty.

Goal 1. Augment our already strong research efforts in Neuroscience by a) recruitment of new faculty, b) renovation of facilities, c) acquisition of equipment, d) developing major programmatic activities, and e) creating a focal point to promote the exchange of information among our research faculty.

1a. Faculty recruitment. NI is providing $384,000 in seed money toward the seed packages for Dr. Catherine Kaczorowski and Dr. Victor Chizhikov. We are distributing these funds over 4-5 years. These investigators are entering their 4th year of support this Fall (2016). Dr. Chizhikov was awarded an R01 from NIH in July of 2016, and he will be recommended for promotion and tenure at the associate professor leve. Dr. Kaczorowski has been successful in getting private (Bright Focus, American Federation for Aging Research) and NIH funding. However, she has chosen to leave UTHSC and is moving to Jackson Labs Oct. 1, 2016. We are currently interviewing candidates for an NI-supported position in the department of Anatomy and Neurobiology to replace Dr. Kaczorowski.

1b. Acquisition of equipment for Cores. In the past, NI has contributed matching funds for multi-user equipment grants, including those obtained from NIH for an electron microscope, for two confocal microscopes, for a computerized light microscope for three-dimensional neuronal reconstructions, and a high resolution digital camera attachment for the electron microscope, all are located in the Neuroscience Imaging Core and are maintained and supervised by a dedicated Technical Manager (Dr. TJ Hollingsworth) provided by the NI. The web site for the Imaging Center is constantly refreshed: (http://www.uthsc.edu/neuroscience/imaging-center/index.php) and features on line scheduling.

1c. Developing major programmatic activities. Several areas of research focus exist within the NI and are consolidated into seven research groups. These areas include: 1) Neurological and Neurodegenerative Disorders, 2) Vision and Retina, 3) Neurogenetics, Development and Evolution, 4) Sensory Information Processing, 5) Excitable Properties of Neurons, 6) Mental and Addictive Disorders, and 7) Neural Cell Signaling. These areas of focus provide for interaction among faculty in different departments and promote collaborative research activities, focused journal clubs, and other programmatic interactions conducive to interdisciplinary neuroscience

research and training. The details of this organization are provided above.

NI has made a concerted effort to participate in faculty hires this year, which takes a substantial amount of funds to contribute to seed packages. NI supported faculty who have recently acquired new funding include Tony Reiner(NIH, DOD; also see http://www.uthsc.edu/neuroscience/tbi.php), Catherine Kaczorowski (NIH, Bright Focus, American Federation of Aging Research), Victor Chizhikov (NIH), Anna Bukiya (NIH), Edward Chaum (NIH), Max Fletcher, (NIH), Detlef Heck (NIH), Francesca Liao (NIH), Kafait Malik (NIH), Mike McDonald (NIH), Kristen O'Connell (NIH), and Fuming Zhou (NIH).

1d. Creating a focal point to promote the exchange of information among our research faculty. There are several avenues for the exchange of information:

1) Our interdisciplinary Graduate and Postdoctoral Program in Neuroscience attracts excellent undergraduate application from around the country (**See Appendix 4**).

2) The NI Neuroscience Seminar series is a major mechanism for interaction among neuroscience faculty and students and brings outstanding neuroscientists from around the world to the UTHSC campus. During the past year, there were 24 seminars: 18 by visiting neuroscientists and 6 by NI or local faculty. Announcements are mailed to all participating faculty and students and are posted at various points throughout the UTHSC campus and a list of speakers is shown in **Appendix 3**.

3) There are several web sites maintained by NI or by NI faculty. The main NI website provides information on the NI and is a recruitment tool to attract first-rate neuroscience students and faculty. This site, http://www.uthsc.edu/neuroscience/, now includes all of the services offered by the Neuroscience Imaging Core, the Behavioral Core, a list of NI supported research projects, recent external funding of NI members, the Neuroscience Undergraduate Merit Scholars, Neuroscience Track students, Research Groups, and many other items. Other servers are run by NI member and Governor's Chair, Rob Williams and offer Neuroscience faculty worldwide an avenue to present their research findings and search neurogenetic data, and is used daily by more than 100 scientists throughout the world. The servers may be found at: http://www.nervenet.org, http://www.genenetwork.org/, http://www.mbl.org/, http://www.complextrait.org/, and cover the GeneNetwork, Mouse Brain Library, Complex Trait Analysis, Virtual Microscopy, Web QTL Project, among others.

4) Ms. Fleming maintains 2 servers for NI members. One server is for file exchange for users of the Imaging Center. All images are digitally acquired from our confocal and electron microscopes, and these can be uploaded to this site by users, stored for a month, and downloaded at their convenience during that period. We also maintain a server for archiving all of our NI business.

5) NI maintains online scheduling calendars for the NI Imaging Center, Behavioral Core, and two conference rooms. In the case of the Imaging Center, these calendars also provide automated billing information to the administrative staff (PI, account numbers, hours used).

Goal 2. Promote education and research training in Neuroscience at the predoctoral (including undergraduate and graduate students, dental, medical and other professional students and minority students) and postdoctoral (including Ph.D.s, interns and residents) levels of students at UT and other Tennessee institutions.

2a. Training for underprivileged students continues to be active and supported by NI neuroscientists and their laboratories through funds from the state of Tennessee, the College of Pharmacy, and Rust College. NI involvement comes primarily under the **Prescience Program** (part of a Summer Research Scholars Program administered by UTHSC graduate college), which provides financial support for summer research internships, and is administered by NI member Prof. Emeritus E. J. Johnson (Dr. Johnson still works part-time for UTHSC), with the help of NI member Kristen O'Connell. The **Prescience Program** provides basic science career exposure (research laboratory apprentice-preceptorship) and basic science skills reinforcement activity for scholarly oriented high school and college minority students. Students are paired with an undergraduate apprentice with a Ph.D. or M.D. biomedical scientist preceptor in a one-to-one relationship. This association and environment are designed to inform the student of the undergraduate prerequisites and essential course work that are required to pursue doctoral studies and to inform them of the demands and relevance of communication skills, mathematics, and science to the conduct of biomedical research.

2b. This year marks our 11th year for awarding ***Undergraduate Neuroscience Merit Scholarships*** to outstanding undergraduates at Rhodes College, Christian Brothers University (CBU) and students at other undergraduate institutions with Neuroscience programs who return home to Memphis in the summertime. The Rhodes and CBU scholars work on independent projects for their undergraduate thesis. The scholars (and mentors) for 2015-206 were Jessica Baker, Rhodes College (Mentor: Drs. Kristen Hamre of Anatomy and Neurobiology), Chandler Martin, Christian Brothers Univ (Mentor Kristen O'Connell) and Jessica Rogoweic, Rhodes College (Mentor: Kathryn McVicar), In some years, we also use this program to place Memphians who attend college elsewhere but wish to do summer research in Memphis.

2c. In 2015-2016, NI supported the stipends of 10 students. ***We continue to support the recruitment of graduate students into the Neuroscience Track of Interdisciplinary Program for Biomedical Sciences.*** A copy of our flyer can be found in **Appendix 4.** We recently pledged matching
funds for another 8 Neuroscience Track students for FY 2016-2017. NI provides a conference room for many activities, including student classes. Students engage our outside speakers each week, both in scientific meetings as part of the Seminar Class, but socially as well. Students are included in faculty lunches with outside speakers, as are postdocs. Students are also encouraged to pick one of the outside speakers each year.

2d. In 2015-2016, NI supported matching funds for 6 postdoctoral students, and have committed to 6

postdocs for FY 2016-2017.

Goal 3: Hasten the application of the latest and most promising scientific information to the clinical treatment of neurological disorders (*e.g.*, Parkinson's disease, Alzheimer's disease, stroke, spinal cord injury, neurotrauma, brain tumors, cognitive disorders, drug addiction, and multiple sclerosis) by integrating educational and research programs.

3a. The Neuroscience Seminar series and Symposia encourage participation by the faculty, and collaborative research activities, especially those between basic scientists and clinical faculty. Several of the research focus areas of the NI are devoted primarily to study of the basic biology of human disease, including the groups for Neurological and Neurodegenerative Disorders, Neuro-oncology, Vision and Retina, and Mental and Addictive Disorders. This aim was addressed by our Neuroscience seminar series (**Appendix 3**) and the Urban Child annual symposia (**Appendix 4**), which are detailed above.

3b. Research Projects funded by NI. During 2015-2016, the NI did not solicit research proposals but instead continued to support two new faculty hires. Other support is listed below.

-**Postdoctoral Research Awards.** The NI provided matching funds on a competitive basis for 8 postdoctoral fellows or research associates for FY 2015-2016. These awards are $10,000-$15,000 each. We have committed funds for 3 postdocs in FY 2016-2017, and intend to support at least 2 more this year.

Goal 4: Interact with the faculty of other UT campuses and neighboring undergraduate institutions

Some NI faculty are involved in large multi-institutional grant programs, involving a number of universities (listed above). There is considerable collaboration between NI faculty on the UTHSC campus and investigators at St. Jude Children's Research Hospital and at the University of Memphis.

In addition to research collaborations, we continue to sponsor the Neuroscience Seminar Series on the UTHSC campus, which is often attended by faculty and students from other Memphis institutions, and our faculty are involved in workshops and seminars at other institutions and at national meetings. Our Neuroscience Symposia, such as the "**The Neurobiology of Appetite: Shedding Light on Obesity"** symposium in April of 2015, bring together clinical and basic research scientists from our various local sites and outside of UTHSC (**See Appendix 4**). Currently we are planning an outreach symposium for Fall of 2016 (Oct 1) on the effects recreational drug use and nicotine have on the brain.

As mentioned previously, the NI continues its community interaction with Urban Child Institute with a community forum during Brain Awareness Week at the Urban Child Institute. This past year's program, entitled "**Early Childhood Resilience",** was directed toward parents, teachers, and other professionals involved in the

care and early instruction of children (**Appendix 4**). The program was organized by NI by NI Director William E. Armstrong and Dan Goldowitz of the Urban Child Insitute. Two talks were featured, one Pat Levitt , Ph.D. of Children's Hospital in Los Angeles and the other by Eraina Schauss, Ph.D. from the University of Memphis.

APPENDIX 1

External Funding of Neuroscience Institute Faculty

FY 2015-2016

PI	AWARD TITLE	DEPARTMENT	SPONSOR	SPONSOR AWARD NO.	AWARD BEGIN DATE	AWARD END DATE	FY TOTAL COSTS
Dopico, Alejandro	Ethanol Actions on SLO Channels from Arteries vs. Brain	Pharmacology	HHS - NIH - NIAAA - National Institute on Alcohol Abuse and Alcoholism	5 R37 AA011560-18	7/1/2015	6/30/2016	$360,034
Dopico, Alejandro	Ethanol Actions on SLO Channels from Arteries vs. Brain	Pharmacology	HHS - NIH - NIAAA - National Institute on Alcohol Abuse and Alcoholism	5 R37 AA011560-18S1	9/1/2015	8/31/2016	$49,999
Williams, Robert	Robust Systems Genetric of Alcohol and Stress Effects on CNS	Genetics, Genomics & Informati	HHS - NIH - NIAAA - National Institute on Alcohol Abuse and Alcoholism	4U01 AA13499-15	2/1/2016	1/31/2017	$232,295
Jaggar, Jonathan	Calcium signaling in cerebral arteries	Physiology	HHS - NIH - NHLBI - National Heart, Lung, and Blood Institute	5R01HL067061-14	5/1/2016	4/30/2017	$375,000
Boughter, John	Sensory Coding in Taste	Anatomy and Neurobiology	HHS - NIH - NIDCD - National Institute on Deafness and Other Communication Disorders	5R01DC000353-30 REVISED	9/1/2015	8/31/2016	$0
Foehring, Robert	Slowly Inactivating K+ Channels in Neoxortical Pyramidal Cells	Anatomy and Neurobiology	HHS - NIH - NINDS - National Institute of Neurological Disorders and Stroke	5R01NS044163-12	7/1/2015	6/30/2016	$338,415
Kita, Hitoshi	Synaptic Transmissions in the Basal Ganglia	Anatomy and Neurobiology	HHS - NIH - NINDS - National Institute of Neurological Disorders and Stroke	5 R01 NS057236-08	5/1/2016	4/30/2017	$328,125
Dopico, Alejandro	Vasodilation via selective pharmacological targeting of BK channel beta1subunits	Pharmacology	HHS - NIH - NHLBI - National Heart, Lung, and Blood Institute	5 R01 HL104631-05 REVISED	12/1/2015	11/30/2016	$0
Jaggar, Jonathan	Arterial Smooth Muscle Chloride Channels	Physiology	HHS - NIH - NHLBI - National Heart, Lung, and Blood Institute	5 R01 HL110347-05	7/1/2015	6/30/2016	$414,604
Jaggar, Jonathan	Arterial Smooth Muscle Chloride Channels	Physiology	HHS - NIH - NHLBI - National Heart, Lung, and Blood Institute	5 R01 HL110347-05	7/1/2015	6/30/2017	$0
Williams, Robert	INIA: Bioinformatics Core	Genetics, Genomics & Informati	HHS - NIH - NIAAA - National Institute on Alcohol Abuse and Alcoholism	4U01AA016662-10	2/1/2016	1/31/2017	$196,254
Armstrong, William	Reproductive Plasticity in Oxytocin Neurons	Anatomy and Neurobiology	HHS - NIH - NICHD - Eunice Kennedy Shriver National Institute of Child Health and Human Development	5R01HD072056-04	1/1/2016	12/31/2016	$280,125
Liao, Francesca-Fang	Nuclear receptor signaling in BACE1 gene repression under neuroinflammation	Pharmacology	HHS - NIH - NINDS - National Institute of Neurological Disorders and Stroke	5R21NS083908-02 REVISED	7/1/2015	6/30/2016	$0
Williams, Robert	Translational Systems Genetics of Mitochondria, Metabolism and Aging	Genetics, Genomics & Informati	HHS - NIH - NIA - National Institute on Aging	5R01AG043930-04	6/1/2016	5/31/2017	$505,811
Ledoux, Mark	Genetics and Biology of CIZ1 in Cervical Dystonia	Neurology	HHS - NIH - NINDS - National Institute of Neurological Disorders and Stroke	5R01NS082296-03	7/1/2015	6/30/2016	$328,125
Reiner, Anton	A Mouse Model for Emotional Disorder Caused by Mild Traumatic Brain Injury	Anatomy and Neurobiology	HHS - NIH - NINDS - National Institute of Neurological Disorders and Stroke	5R21NS081370-02 REVISED	9/1/2015	8/31/2016	$0
Wheless, James	Cognitive AED Outcomes in Pediatric Localization Related Epilepsy (COPE).	Pediatrics	Emory University	Purchase Order No. T069573Mod 1	9/1/2015	10/23/2015	$19,000
Lu, Lu	Modulators of Retinal Injury	Genetics, Genomics & Informati	Emory University	T28910 5R01EY017641 Am2	5/1/2016	4/30/2017	$34,146
Sakata, Kazuko	Antidepressive Effects and Gene Mechanisms of Early-Life Enriched Environment	Pharmacology	HHS - NIH - NIMH - National Institute of Mental Health	5R03MH102445-02	7/1/2015	6/30/2016	$75,000
Sakata, Kazuko	fy16	Pharmacology	HHS - NIH - NIMH - National Institute of Mental Health	5R03MH102445-02	7/1/2015	6/30/2017	$0
O'Connell, Kristen	Modulation of AgRP neuronal excitability: role of diet and body weight	Physiology	HHS - NIH - NIDDK - National Institute of Diabetes and Digestive and Kidney Diseases	5R01DK102918-03	6/1/2016	5/31/2017	$326,250

PI	AWARD TITLE	DEPARTMENT	SPONSOR	SPONSOR AWARD NO.	AWARD BEGIN DATE	AWARD END DATE	FY TOTAL COSTS
Ledoux, Mark	SD-809-C-18 A Randomized, Double-Blind, Placebo-Controlled Study of SD-809 (Dutetrabenazine) for the Treatment of Moderate to Severe Tardive Dyskinesia; SD-809-C-20 An Open-Label, Long-Term Safety Study of SD-809 (Dutetrabenazine) for the Treatment of Mod	Neurology	Auspex Pharmaceuticals	SD-809-C20 Amendment 2	2/17/2016	2/3/2017	$63,750
Sakata, Kazuko	Neural Mechanisms of Inflexible Learning Caused by BDNF Deficiency	Pharmacology	HHS - NIH - NIMH - National Institute of Mental Health	5R21MH105567-02	8/1/2015	7/31/2016	$150,000
Sakata, Kazuko	Neural Mechanisms of Inflexible Learning Caused by BDNF Deficiency	Pharmacology	HHS - NIH - NIMH - National Institute of Mental Health	5R21MH105567-02	8/1/2015	7/31/2017	$0
Jones, Byron	Genetics of Chronic Mild Stress and Alcohol Consumption	Genetics, Genomics & Informati	HHS - NIH - NIAAA - National Institute on Alcohol Abuse and Alcoholism	5R01AA021951-02	9/1/2015	8/31/2016	$363,905
*Lu, Lu	Genetics of Chronic Mild Stress and Alcohol Consumption	Genetics, Genomics & Informati	HHS - NIH - NIAAA - National Institute on Alcohol Abuse and Alcoholism	5R01AA021951-02	9/1/2015	8/31/2016	
Jaggar, Jonathan	Grant from Arbor Pharmaceuticals , LLC for the E. Eric Muirhead Hypertension Research Day	Physiology	Arbor Pharmaceuticals, LLC		########	11/18/2015	$2,500
Fletcher, Max	Cholinergic modulation of olfactory bulb glomerular sensitivity	Anatomy and Neurobiology	HHS - NIH - NIDCD - National Institute on Deafness and Other Communication Disorders	5R01DC013779-02	3/1/2016	2/28/2017	$371,749
Williams, Robert	Research to Prevent Blindness Stein Innovation Award	Genetics, Genomics & Informati	Research to Prevent Blindness		2/28/2016	12/31/2017	$150,000
Dragatsis, Ioannis	Restoration of IKAP expression in an FD mouse model: Implications for therapeutics	Physiology	Dysautonomia Foundation, Inc.		2/1/2016	1/31/2017	$75,000
Jones, Byron	Neural Toxicity of Paraquat is Related to Iron Regulation in Midbrain	Genetics, Genomics & Informati	HHS - NIH - NIEHS - National Institute of Environmental Health Sciences	5R01ES022614-04	5/1/2016	4/30/2017	$584,923
*Lu, Lu	Neural Toxicity of Paraquat is Related to Iron Regulation in Midbrain	Genetics, Genomics & Informati	HHS - NIH - NIEHS - National Institute of Environmental Health Sciences	5R01ES022614-04	5/1/2016	4/30/2017	
Chaum, Edward	Nanoplatform and Modeling of the Subretinal and RPE Microenvironment in AMD	Ophthalmology	HHS - NIH - NEI - National Eye Institute	5R01EY024063-02	5/1/2016	4/30/2017	$580,066
Bukiya, Anna	Cholesterol control of alcohol-induced cerebral artery constriction	Pharmacology	HHS - NIH - NIAAA - National Institute on Alcohol Abuse and Alcoholism	1R01AA023764-02	5/1/2016	4/30/2017	$337,500
Liao, Francesca-Fang	Is HSF1 the key in mediating Hsp90 inhibitor effect in AD?	Pharmacology	HHS - NIH - NIA - National Institute on Aging	5R01AG049772-02	6/1/2016	4/30/2017	$280,440
Jablonski, Monica	Insights into AMD derived from the genetic mechanisms in Late Onset Retinal Macular Degeneration (L-ORMD)	Ophthalmology	University of California, San Diego (UCSD)	58090191 Amendment 1 PO#S9000968 20150688-AYYAGARI	########	12/30/2016	$13,000
Gangaraju, Raja Shekhar	Vascular and Neuronal Repair with Adipose Stromal Cells in Retinopathy	Ophthalmology	HHS - NIH - NEI - National Eye Institute	7R01EY023427-03	7/1/2015	3/31/2016	$316,823
Ledoux, Mark	A Double-Blind, Placebo-Controlled, Parallel-Group Study to Evaluate the Efficacy and Safety of Two Dose Strengths of Dalfampridine Extended Release Tablets for Treatment of Stable Walking Deficits in Post-Ischemic Stroke (MILESTONE)	Neurology	Acorda Therapeutics	DALF-PS-1016 MILESTONE	7/31/2015	9/30/2016	$100,979
Ledoux, Mark	A Phase 3, Long-Term, Open-Label and Single-Arm Study of MYOBLOC® in the Treatment of Troublesome Sialorrhea in Adult Subjects	Neurology	US WorldMeds, LLC	SN-SIAL-351 OPTIMYST	11/3/2015	5/1/2017	$128,325
Jablonski, Monica	Evaluation and inhibition of efflux pumps expressed on the blood ocular barrier.	Ophthalmology	University of Mississippi (UM)	15-03-031Mod1 1R01EY022120-01A1	3/1/2016	2/28/2017	$100,002
Cordero-Morales, Julio	ELUCIDATING THE MECHANISM OF TRPV4 ACTIVATION AND ITS ROLE IN VASCULARFUNCTION 15SDG25700146	Physiology	American Heart Association - Greater Southeast Affiliate	15SDG25700146	7/1/2015	6/30/2018	$231,000
Jablonski, Monica	Loading of diazoxide into chitosan nanoparticles and testing in mice and rats	Ophthalmology	Radikal Therapeutics, Inc.		7/15/2015	1/15/2016	$17,209

PI	AWARD TITLE	DEPARTMENT	SPONSOR	SPONSOR AWARD NO.	AWARD BEGIN DATE	AWARD END DATE	FY TOTAL COSTS
Jablonski, Monica	Loading of diazoxide into chitosan nanoparticles and testing in mice and rats	Ophthalmology	Radikal Therapeutics, Inc.	Amendment 1	1/16/2016	7/15/2016	$38,723
Reiter, Lawrence	Gene Expression Analysis in PWS Subject Derived Dental Pulp Stem Cell Neurons.	Neurology	Foundation for Prader -Willi Research		9/1/2015	8/31/2016	$108,000
Heck, Detlef	Effects of traumatic brain injury on temporal dynamics of brain activity and learning	Anatomy and Neurobiology	HHS - NIH - NINDS - National Institute of Neurological Disorders and Stroke	1R21NS091752-01A1	9/1/2015	8/31/2016	$228,000
Kaczorowski, Catherine	Mapping AD Memory Failure: Molecules to Connectivity of Brain Network	Anatomy and Neurobiology	HHS - NIH - NIA - National Institute on Aging	1R21AG048446-01A1	8/15/2015	3/31/2016	$228,000
Kaczorowski, Catherine	Mapping AD Memory Failure: Molecules to Connectivity of Brain Network	Anatomy and Neurobiology	HHS - NIH - NIA - National Institute on Aging	5R21AG048446-02	4/1/2016	3/31/2017	$190,000
Liao, Francesca-Fang	Endothelial eNOS-deficient mice as chronic cerebral hypoperfusion model	Pharmacology	HHS - NIH - NINDS - National Institute of Neurological Disorders and Stroke	1R21NS091593-01A1	9/20/2015	8/31/2016	$228,000
*Dopico, Alejandro	Endothelial eNOS-deficient mice as chronic cerebral hypoperfusion model	Pharmacology	HHS - NIH - NINDS - National Institute of Neurological Disorders and Stroke	1R21NS091593-01A1	9/20/2015	8/31/2016	
Youngentob, Steven	Developmental Exposure Alcohol Research Center	Anatomy and Neurobiology	Binghamton University State Univeristy of New York (SUNY)	5P50AA17823 Fdn Award # 72291	9/1/2015	8/31/2016	$226,174
Boughter, John	Taste responses in defined cell types in gustatory cortex	Anatomy and Neurobiology	HHS - NIH - NIDCD - National Institute on Deafness and Other Communication Disorders	1R21DC015202-01	12/1/2015	11/30/2016	$228,000
*Fletcher, Max	Taste responses in defined cell types in gustatory cortex	Anatomy and Neurobiology	HHS - NIH - NIDCD - National Institute on Deafness and Other Communication Disorders	1R21DC015202-01	12/1/2015	11/30/2016	
Morales-Tirado, Vanessa	Generation of an Immortalized Retinal Ganglion Cell Line by Transduction of the Murine Telomerase Catalytic Subunit (mTert)	Ophthalmology	University of Tennessee Research Foundation (UTRF)		1/4/2016	10/7/2016	$15,000
Vasquez, Valeria	Understanding the Role of Piezo1 Channels in Vascular Physiology	Physiology	American Heart Association - National	AHA 16SDG26700010	1/1/2016	12/31/2019	$308,000
Jablonski, Monica	A Novel Therapy to Treat Age-Related Macular Degeneration: Mechanisms of Action	Ophthalmology	William and Ella Owens Medical Research Foundation		1/1/2016	12/31/2016	$141,556
Chaum, Edward	Phenotype Modeling and Therapeutic Approaches to MELAS	Ophthalmology	The Shulsky Foundation		11/1/2015	10/31/2016	$399,817
Ledoux, Mark	An Extension Study to Evaluate the Long-Term Safety, Tolerability and Efficacy of Dalfampridine Extended-Release Tablets for the Treatment of Chronic Post-Ischemic Stroke Walking Deficits in Subjects Who Participated in the DALFPS- 1016 Study (MILESTONE)	Neurology	Acorda Therapeutics	DALF-PS-1029 CTA	########	10/31/2017	$102,840
Reiner, Anton	CB2 Receptor Therapy Using the FDA-approved Drug Raloxifene to Mitigate Visual Deficits after Mild TBI and/or Ocular Trauma	Anatomy and Neurobiology	DOD - Department of Defense	W81XWH-16-1-0076	3/15/2016	3/14/2019	$1,346,882
Hamre, Kristin	Maternal genotype, choline intervention, & epigenetics in Fetal Alcohol Syndrome	Anatomy and Neurobiology	HHS - NIH - NIAAA - National Institute on Alcohol Abuse and Alcoholism	1R01AA023508-01A1	3/10/2016	2/28/2017	$307,866
Liao, Francesca-Fang	Is dysfunctional eNOS a major contributing factor for sporadic alzheimer's?	Pharmacology	Alzheimer's Association	ZEN-16-362441	3/1/2016	2/28/2019	$150,000
Morales-Tirado, Vanessa	The Role of PKC-Delta in Retinal Ganglion Cell (RGC) Death and Survival in Glaucoma	Ophthalmology	Alcon Research Institute, Alcon Research Ltd.	2015 Research Grant	4/7/2016	4/6/2017	$50,000
Ledoux, Mark	A randomized, double-blind, placebo-controlled trial of urate-elevating inosine treatment to slow clinical decline in early Parkinson's disease	Neurology	Massachusetts General Hospital	Prot No. INO-PD-P3-2014	9/1/2015	6/30/2016	$105,265
Reiner, Anton	Development of DNAzyme Gene Therapy for Huntington's Disease	Anatomy and Neurobiology	HHS - NIH - National Institutes of Health	1R21NS098137-01	6/1/2016	5/31/2017	$190,000

PI	AWARD TITLE	DEPARTMENT	SPONSOR	SPONSOR AWARD NO.	AWARD BEGIN DATE	AWARD END DATE	FY TOTAL COSTS
Moore, Bob	Modulation of microglia cannabinoid receptor 2 to ameliorate neuroinflammation in Parkinson's disease.	Pharmaceutical Sciences	Michael J. Fox Foundation for Parkinson's Research	Grant ID: 11485	6/2/2016	6/1/2017	$11,370
Chen, Hao	Integrated GWAS of Complex Behavioral and Gene Expression Traits in Outbred Rats	Pharmacology	University of California, San Diego (UCSD)	73257613 S9001369 7P50DA037844-03	1/1/2016	4/30/2016	$118,316
Chen, Hao	Integrated GWAS of Complex Behavioral and Gene Expression Traits in Outbred Rats	Pharmacology	University of California, San Diego (UCSD)	73257613 S9001369 5P50DA037844 Am1	1/1/2016	4/30/2017	$340,081
Leffler, Charles	Studies of the Control of Neonatal Circulation	Physiology	HHS - NIH - NHLBI - National Heart, Lung, and Blood Institute	5R01HL034059-31	6/1/2016	5/31/2017	$409,356
Malik, Kafait	Angiotensins, Prostaglandins, Adrenergic Interactions	Pharmacology	HHS - NIH - NHLBI - National Heart, Lung, and Blood Institute	5 R01 HL19134-41	4/1/2016	3/31/2017	$565,592
Leffler, Charles	Newborn Cerebral Hemorrhage and Arachidonate Metabolites	Physiology	HHS - NIH - NHLBI - National Heart, Lung, and Blood Institute	5 R01 HL042851-24 REVISED	8/1/2015	12/31/2015	$0
Leffler, Charles	Newborn Cerebral Hemorrhage and Arachidonate Metabolites	Physiology	HHS - NIH - NHLBI - National Heart, Lung, and Blood Institute	2 R01 HL042851-25	1/1/2016	12/31/2016	$391,127
*Ledoux, Mark	The Role of UBTF in Undiagnosed Neurodevelopmental Disorders	Microbiology, Immunology & Bio	HHS - NIH - NIGMS - National Institute of General Medical Sciences	1R21GM118962-01	5/6/2016	4/30/2017	$228,000
TOTAL							**$14,386,319**

* indicates Co-PI
$0 indicates no-cost extension

APPENDIX 2

Faculty Publications and Society for Neuroscience Presentations

FY 2015-2016

Peer-reviewed publications for 2015-2016 (cited in PubMed):

Ahmed, M., Machado, P. M., Miller, A., Spicer, C., Herbelin, L., He, J., Noel, J., Wang, Y., McVey, A. L., Pasnoor, M., Gallagher, P., Statland, J., Lu, C. H., Kalmar, B., Brady, S., Sethi, H., Samandouras, G., Parton, M., Holton, J. L., Weston, A., Collinson, L., **Taylor, J. P.**, Schiavo, G., Hanna, M. G., Barohn, R. J., Dimachkie, M. M., & Greensmith, L. (2016). Targeting protein homeostasis in sporadic inclusion body myositis. *Sci Transl Med, 8*(331), 331ra341. doi:10.1126/scitranslmed.aad4583

Akos Szabo, C., Salinas, F. S., Li, K., Franklin, C., Leland, M. M., Fox, P. T., Laird, A. R., & **Narayana, S.** (2016). Modeling the effective connectivity of the visual network in healthy and photosensitive, epileptic baboons. *Brain Struct Funct, 221*(4), 2023-2033. doi:10.1007/s00429-015-1022-y

Al-Khalaf, M. H., Blake, L. E., Larsen, B. D., Bell, R. A., Brunette, S., Parks, R. J., Rudnicki, M. A., **McKinnon, P. J.**, Jeffrey Dilworth, F., & Megeney, L. A. (2016). Temporal activation of XRCC1-mediated DNA repair is essential for muscle differentiation. *Cell Discov, 2*, 15041. doi:10.1038/celldisc.2015.41

Alam, G., Miller, D. B., O'Callaghan, J. P., **Lu, L.**, **Williams, R. W.**, & **Jones, B. C.** (2016). MPTP neurotoxicity is highly concordant between the sexes among BXD recombinant inbred mouse strains. *Neurotoxicology, 55*, 40-47. doi:10.1016/j.neuro.2016.04.008

Aldiri, I., Ajioka, I., Xu, B., Zhang, J., Chen, X., Benavente, C., Finkelstein, D., Johnson, D., Akiyama, J., Pennacchio, L. A., & **Dyer, M. A.** (2015). Brg1 coordinates multiple processes during retinogenesis and is a tumor suppressor in retinoblastoma. *Development, 142*(23), 4092-4106. doi:10.1242/dev.124800

Alford, E. L., **Wheless, J. W.**, & Phelps, S. J. (2015). Treatment of Generalized Convulsive Status Epilepticus in Pediatric Patients. *J Pediatr Pharmacol Ther, 20*(4), 260-289. doi:10.5863/1551-6776-20.4.260

Annunziata, I., Patterson, A., & **d'Azzo, A.** (2015). Isolation of mitochondria-associated ER membranes (MAMs) and glycosphingolipid-enriched microdomains (GEMs) from brain tissues and neuronal cells. *Methods Mol Biol, 1264*, 25-33. doi:10.1007/978-1-4939-2257-4_3

Antonakakis, M., Dimitriadis, S. I., Zervakis, M., Micheloyannis, S., Rezaie, R., **Babajani-Feremi, A.**, Zouridakis, G., & **Papanicolaou, A. C.** (2016). Altered cross-frequency coupling in resting-state MEG after mild traumatic brain injury. *Int J Psychophysiol, 102*, 1-11. doi:10.1016/j.ijpsycho.2016.02.002

Antonakakis, M., Dimitriadis, S. I., Zervakis, M., Rezaie, R., **Babajani-Feremi, A.**, Micheloyannis, S., Zouridakis, G., & **Papanicolaou, A. C.** (2015). Comparison of brain network models using cross-frequency coupling and attack strategies. *Conf Proc IEEE Eng Med Biol Soc, 2015*, 7426-7429. doi:10.1109/EMBC.2015.7320108

Ashbrook, D. G., **Williams, R. W.**, **Lu, L.**, & Hager, R. (2015). A cross-species genetic analysis identifies candidate genes for mouse anxiety and human bipolar disorder. *Front Behav Neurosci, 9*, 171. doi:10.3389/fnbeh.2015.00171

Babajani-Feremi, A., **Narayana, S.**, Rezaie, R., Choudhri, A. F., Fulton, S. P., **Boop, F. A.**, **Wheless, J. W.**, & **Papanicolaou, A. C.** (2016). Language mapping using high gamma electrocorticography, fMRI, and TMS versus electrocortical stimulation. *Clin Neurophysiol, 127*(3), 1822-1836. doi:10.1016/j.clinph.2015.11.017

Banerjee, S., Wang, J., Pfeffer, S., Ma, D., Pfeffer, L. M., Patil, S. A., Li, W., & **Miller, D. D.** (2015). Design, Synthesis and Biological Evaluation of Novel 5H-Chromenopyridines as Potential Anti-Cancer Agents. *Molecules, 20*(9), 17152-17165. doi:10.3390/molecules200917152

Bannister, J. P., Bulley, S., Leo, M. D., Kidd, M. W., & **Jaggar, J. H.** (2016). Rab25 influences functional Cav1.2 channel surface expression in arterial smooth muscle cells. *Am J Physiol Cell Physiol, 310*(11), C885-893. doi:10.1152/ajpcell.00345.2015

Benavente, C. A., & **Dyer, M. A.** (2015). Genetically engineered mouse and orthotopic human tumor xenograft models of retinoblastoma. *Methods Mol Biol, 1267*, 307-317. doi:10.1007/978-1-4939-2297-0_15

Benavente, C. A., & **Dyer, M. A.** (2015). Genetics and epigenetics of human retinoblastoma. *Annu Rev Pathol, 10*, 547-562. doi:10.1146/annurev-pathol-012414-040259

Bendahmane, M., Ogg, M. C., **Ennis, M.**, & **Fletcher, M. L.** (2016). Increased olfactory bulb acetylcholine bi-directionally modulates glomerular odor sensitivity. *Sci Rep, 6*, 25808. doi:10.1038/srep25808

Bishop, H. I., Guan, D., Bocksteins, E., Parajuli, L. K., Murray, K. D., Cobb, M. M., Misonou, H., Zito, K.,

Foehring, R. C., & Trimmer, J. S. (2015). Distinct Cell- and Layer-Specific Expression Patterns and Independent Regulation of Kv2 Channel Subtypes in Cortical Pyramidal Neurons. *J Neurosci, 35*(44), 14922-14942. doi:10.1523/JNEUROSCI.1897-15.2015

Bogard, A. S., & **Tavalin, S. J.** (2015). Protein Kinase C (PKC)zeta Pseudosubstrate Inhibitor Peptide Promiscuously Binds PKC Family Isoforms and Disrupts Conventional PKC Targeting and Translocation. *Mol Pharmacol, 88*(4), 728-735. doi:10.1124/mol.115.099457

Bott, L. C., Badders, N. M., Chen, K. L., Harmison, G. G., Bautista, E., Shih, C. C., Katsuno, M., Sobue, G., **Taylor, J. P.**, Dantuma, N. P., Fischbeck, K. H., & Rinaldi, C. (2016). A small-molecule Nrf1 and Nrf2 activator mitigates polyglutamine toxicity in spinal and bulbar muscular atrophy. *Hum Mol Genet*. doi:10.1093/hmg/ddw073

Brittain, S. T., & **Wheless, J. W.** (2015). Pharmacokinetic simulations of topiramate plasma concentrations following dosing irregularities with extended-release vs. immediate-release formulations. *Epilepsy Behav, 52*(Pt A), 31-36. doi:10.1016/j.yebeh.2015.08.029

Broussard, J. I., Yang, K., Levine, A. T., Tsetsenis, T., Jenson, D., Cao, F., Garcia, I., Arenkiel, B. R., **Zhou, F. M.**, De Biasi, M., & Dani, J. A. (2016). Dopamine Regulates Aversive Contextual Learning and Associated In Vivo Synaptic Plasticity in the Hippocampus. *Cell Rep, 14*(8), 1930-1939. doi:10.1016/j.celrep.2016.01.070

Bukiya, A. N., Osborn, C. V., Kuntamallappanavar, G., Toth, P. T., Baki, L., Kowalsky, G., Oh, M. J., **Dopico, A. M.**, Levitan, I., & Rosenhouse-Dantsker, A. (2015). Cholesterol increases the open probability of cardiac KACh currents. *Biochim Biophys Acta, 1848*(10 Pt A), 2406-2413. doi:10.1016/j.bbamem.2015.07.007

Campos, Y., Qiu, X., Gomero, E., Wakefield, R., Horner, L., Brutkowski, W., Han, Y. G., Solecki, D., Frase, S., Bongiovanni, A., & **d'Azzo, A.** (2016). Alix-mediated assembly of the actomyosin-tight junction polarity complex preserves epithelial polarity and epithelial barrier. *Nat Commun, 7*, 11876. doi:10.1038/ncomms11876

Caron, E., Wheless, C. E., Patters, A. B., & **Wheless, J. W.** (2015). The charges for seizures in the pediatric emergency room: a single center study. *Pediatr Neurol, 52*(5), 517-520. doi:10.1016/j.pediatrneurol.2015.02.010

Carroll, J., Page, T. K., Chiang, S. C., Kalmar, B., Bode, D., Greensmith, L., **McKinnon, P. J.**, Thorpe, J. R., Hafezparast, M., & El-Khamisy, S. F. (2015). Expression of a pathogenic mutation of SOD1 sensitizes aprataxin-deficient cells and mice to oxidative stress and triggers hallmarks of premature ageing. *Hum Mol Genet, 24*(3), 828-840. doi:10.1093/hmg/ddu500

Chandaka, G. K., Wang, L., **Senogles, S.**, & **Armstrong, W. E.** (2016). Late Pregnancy is a Critical Period for Changes in Phosphorylated Mitogen-Activated Protein Kinase/Extracellular Signal-Regulated Kinase 1/2 in Oxytocin Neurones. *J Neuroendocrinol, 28*(9). doi:10.1111/jne.12398

Chang, J., Fedinec, A. L., Kuntamallappanavar, G., **Leffler, C. W.**, **Bukiya, A. N.**, & **Dopico, A. M.** (2016). Endothelial Nitric Oxide Mediates Caffeine Antagonism of Alcohol-Induced Cerebral Artery Constriction. *J Pharmacol Exp Ther, 356*(1), 106-115. doi:10.1124/jpet.115.229054

Chaudhry, K. K., Samak, G., Shukla, P. K., Mir, H., Gangwar, R., Manda, B., Isse, T., Kawamoto, T., Salaspuro, M., Kaihovaara, P., **Dietrich, P.**, **Dragatsis, I.**, Nagy, L. E., & Rao, R. K. (2015). ALDH2 Deficiency Promotes Ethanol-Induced Gut Barrier Dysfunction and Fatty Liver in Mice. *Alcohol Clin Exp Res, 39*(8), 1465-1475. doi:10.1111/acer.12777

Chaum, E., Huddleston, S., & Mastellone, J. (2016). Nasal Hemiretinal Vein Occlusion. *Ophthalmology, 123*(2), 399. doi:10.1016/j.ophtha.2015.12.013

Chaum, E., Winborn, C. S., & **Bhattacharya, S.** (2015). Genomic regulation of senescence and innate immunity signaling in the retinal pigment epithelium. *Mamm Genome, 26*(5-6), 210-221. doi:10.1007/s00335-015-9568-9

Chen, X., Pappo, A., & **Dyer, M. A.** (2015). Pediatric solid tumor genomics and developmental pliancy. *Oncogene, 34*(41), 5207-5215. doi:10.1038/onc.2014.474

Chen, Y., Zhang, D. Q., Liao, Z., Wang, B., Gong, S., Wang, C., Zhang, M. Z., Wang, G. H., Cai, H., **Liao, F. F.**, & Xu, J. P. (2015). Anti-oxidant polydatin (piceid) protects against substantia nigral motor degeneration in multiple rodent models of Parkinson's disease. *Mol Neurodegener, 10*, 4.

doi:10.1186/1750-1326-10-4

Chintalapudi, S. R., Djenderedjian, L., Stiemke, A. B., Steinle, J. J., **Jablonski, M. M.**, & **Morales-Tirado, V. M.** (2016). Isolation and Molecular Profiling of Primary Mouse Retinal Ganglion Cells: Comparison of Phenotypes from Healthy and Glaucomatous Retinas. *Front Aging Neurosci, 8*, 93. doi:10.3389/fnagi.2016.00093

Chintalapudi, S. R., **Morales-Tirado, V. M.**, **Williams, R. W.**, & **Jablonski, M. M.** (2016). Multipronged approach to identify and validate a novel upstream regulator of Sncg in mouse retinal ganglion cells. *FEBS J, 283*(4), 678-693. doi:10.1111/febs.13620

Choudhri, A. F., Patel, R. M., Siddiqui, A., Whitehead, M. T., & **Wheless, J. W.** (2015). Cortical Activation Through Passive-Motion Functional MRI. *AJNR Am J Neuroradiol, 36*(9), 1675-1681. doi:10.3174/ajnr.A4345

Clayton, T., Poe, M. M., Rallapalli, S., Biawat, P., Savic, M. M., Rowlett, J. K., Gallos, G., Emala, C. W., **Kaczorowski, C. C.**, Stafford, D. C., Arnold, L. A., & Cook, J. M. (2015). A Review of the Updated Pharmacophore for the Alpha 5 GABA(A) Benzodiazepine Receptor Model. *Int J Med Chem, 2015*, 430248. doi:10.1155/2015/430248

Conklin, H. M., Ashford, J. M., Clark, K. N., Martin-Elbahesh, K., Hardy, K. K., Merchant, T. E., **Ogg, R. J.**, Jeha, S., Huang, L., & Zhang, H. (2016). Long-Term Efficacy of Computerized Cognitive Training Among Survivors of Childhood Cancer: A Single-Blind Randomized Controlled Trial. *J Pediatr Psychol*. doi:10.1093/jpepsy/jsw057

Conklin, H. M., **Ogg, R. J.**, Ashford, J. M., Scoggins, M. A., Zou, P., Clark, K. N., Martin-Elbahesh, K., Hardy, K. K., Merchant, T. E., Jeha, S., Huang, L., & Zhang, H. (2015). Computerized Cognitive Training for Amelioration of Cognitive Late Effects Among Childhood Cancer Survivors: A Randomized Controlled Trial. *J Clin Oncol, 33*(33), 3894-3902. doi:10.1200/JCO.2015.61.6672

Cook, M. N., Baker, J. A., **Heldt, S. A.**, **Williams, R. W.**, **Hamre, K. M.**, & **Lu, L.** (2015). Identification of candidate genes that underlie the QTL on chromosome 1 that mediates genetic differences in stress-ethanol interactions. *Physiol Genomics, 47*(8), 308-317. doi:10.1152/physiolgenomics.00114.2014

Cormenzana Mendez, I., Martin, A., Charmichael, T. L., Jacob, M. M., Lacerda, E. M., Gomes, B. D., **Fitzgerald, M. E.**, Ventura, D. F., Silveira, L. C., O'Donell, B. M., & Souza, G. S. (2016). Color Discrimination Is Affected by Modulation of Luminance Noise in Pseudoisochromatic Stimuli. *Front Psychol, 7*, 1006. doi:10.3389/fpsyg.2016.01006

Coyne, A. N., Yamada, S. B., Siddegowda, B. B., Estes, P. S., Zaepfel, B. L., Johannesmeyer, J. S., Lockwood, D. B., Pham, L. T., Hart, M. P., Cassel, J. A., Freibaum, B., Boehringer, A. V., **Taylor, J. P.**, Reitz, A. B., Gitler, A. D., & Zarnescu, D. C. (2015). Fragile X protein mitigates TDP-43 toxicity by remodeling RNA granules and restoring translation. *Hum Mol Genet, 24*(24), 6886-6898. doi:10.1093/hmg/ddv389

d'Azzo, A., Machado, E., & Annunziata, I. (2015). Pathogenesis, Emerging therapeutic targets and Treatment in Sialidosis. *Expert Opin Orphan Drugs, 3*(5), 491-504. doi:10.1517/21678707.2015.1025746

Decosta-Fortune, T. M., Li, C. X., de Jongh Curry, A. L., & **Waters, R. S.** (2015). Differential Pattern of Interhemispheric Connections Between Homotopic Layer V Regions in the Forelimb Representation in Rat Barrel Field Cortex. *Anat Rec (Hoboken), 298*(11), 1885-1902. doi:10.1002/ar.23262

DeCuypere, M., Muhlbauer, M. S., **Boop, F. A.**, & Klimo, P., Jr. (2016). Pediatric intracranial gunshot wounds: the Memphis experience. *J Neurosurg Pediatr, 17*(5), 595-601. doi:10.3171/2015.7.PEDS15285

del Mar, N., von Buttlar, X., Yu, A. S., Guley, N. H., **Reiner, A.**, & **Honig, M. G.** (2015). A novel closed-body model of spinal cord injury caused by high-pressure air blasts produces extensive axonal injury and motor impairments. *Exp Neurol, 271*, 53-71. doi:10.1016/j.expneurol.2015.04.023

Delprato, A., Bonheur, B., Algeo, M. P., Rosay, P., **Lu, L.**, **Williams, R. W.**, & Crusio, W. E. (2015). Systems genetic analysis of hippocampal neuroanatomy and spatial learning in mice. *Genes Brain Behav, 14*(8), 591-606. doi:10.1111/gbb.12259

Deng, W., Kimura, Y., Gududuru, V., Wu, W., Balogh, A., Szabo, E., Thompson, K. E., Yates, C. R., Balazs, L., Johnson, L. R., **Miller, D. D.**, Strobos, J., McCool, W. S., & Tigyi, G. J. (2015). Mitigation of the hematopoietic and gastrointestinal acute radiation syndrome by octadecenyl thiophosphate, a small molecule mimic of lysophosphatidic acid. *Radiat Res, 183*(4), 465-475. doi:10.1667/RR13830.1

Deng, Y. P., & **Reiner, A.** (2016). Cholinergic interneurons in the Q140 knock-in mouse model of Huntington's

disease: Reductions in dendritic branching and thalamostriatal input. *J Comp Neurol*. doi:10.1002/cne.24013

Devaraju, P., Yu, J., Eddins, D., Mellado-Lagarde, M. M., Earls, L. R., Westmoreland, J. J., Quarato, G., Green, D. R., & **Zakharenko, S. S.** (2016). Haploinsufficiency of the 22q11.2 microdeletion gene Mrpl40 disrupts short-term synaptic plasticity and working memory through dysregulation of mitochondrial calcium. *Mol Psychiatry*. doi:10.1038/mp.2016.75

Dimitriadis, S. I., Zouridakis, G., Rezaie, R., **Babajani-Feremi, A.**, & **Papanicolaou, A. C.** (2015). Functional connectivity changes detected with magnetoencephalography after mild traumatic brain injury. *Neuroimage Clin, 9*, 519-531. doi:10.1016/j.nicl.2015.09.011

Diouf, B., Devaraju, P., Janke, L. J., Fan, Y., Frase, S., Eddins, D., Peters, J. L., Kim, J., Pei, D., Cheng, C., **Zakharenko, S. S.**, & Evans, W. E. (2016). Msh2 deficiency leads to dysmyelination of the corpus callosum, impaired locomotion, and altered sensory function in mice. *Sci Rep, 6*, 30757. doi:10.1038/srep30757

DiStefano, C., Gulsrud, A., Huberty, S., Kasari, C., Cook, E., **Reiter, L. T.**, Thibert, R., & Jeste, S. S. (2016). Identification of a distinct developmental and behavioral profile in children with Dup15q syndrome. *J Neurodev Disord, 8*, 19. doi:10.1186/s11689-016-9152-y

Dopico, A. M., **Bukiya, A. N.**, Kuntamallappanavar, G., & Liu, J. (2016). Modulation of BK Channels by Ethanol. *Int Rev Neurobiol, 128*, 239-279. doi:10.1016/bs.irn.2016.03.019

Douglas, J. N., Gardner, L. A., Salapa, H. E., Lalor, S. J., Lee, S., Segal, B. M., Sawchenko, P. E., & **Levin, M. C.** (2016). Antibodies to the RNA-binding protein hnRNP A1 contribute to neurodegeneration in a model of central nervous system autoimmune inflammatory disease. *J Neuroinflammation, 13*(1), 178. doi:10.1186/s12974-016-0647-y

Douglas, J. N., Gardner, L. A., Salapa, H. E., & **Levin, M. C.** (2016). Antibodies to the RNA Binding Protein Heterogeneous Nuclear Ribonucleoprotein A1 Colocalize to Stress Granules Resulting in Altered RNA and Protein Levels in a Model of Neurodegeneration in Multiple Sclerosis. *J Clin Cell Immunol, 7*(2), 402. doi:10.4172/2155-9899.1000402

Dumitrache, L. C., & **McKinnon, P. J.** (2016). Polynucleotide kinase-phosphatase (PNKP) mutations and neurologic disease. *Mech Ageing Dev*. doi:10.1016/j.mad.2016.04.009

Dyer, M. A. (2016). Stem Cells Expand Insights into Human Brain Evolution. *Cell Stem Cell, 18*(4), 425-426. doi:10.1016/j.stem.2016.03.017

Eade, A. M., Youngentob, L. M., & **Youngentob, S. L.** (2016). The Interaction of Ethanol Ingestion and Social Interaction with an Intoxicated Peer on the Odor-Mediated Response to the Drug in Adolescent Rats. *Alcohol Clin Exp Res, 40*(4), 734-742. doi:10.1111/acer.13009

Eaton, W. W., Chen, L. Y., **Dohan, F. C., Jr.**, Kelly, D. L., & Cascella, N. (2015). Response to Dell'Osso and Elli. *Am J Psychiatry, 172*(7), 686. doi:10.1176/appi.ajp.2015.15030361r

Engin, E., Smith, K. S., Gao, Y., Nagy, D., Foster, R. A., Tsvetkov, E., Keist, R., Crestani, F., Fritschy, J. M., Bolshakov, V. Y., Hajos, M., **Heldt, S. A.**, & Rudolph, U. (2016). Modulation of anxiety and fear via distinct intrahippocampal circuits. *Elife, 5*, e14120. doi:10.7554/eLife.14120

Fajol, A., **Chen, H.**, Umbach, A. T., Quarles, L. D., Lang, F., & Foller, M. (2016). Enhanced FGF23 production in mice expressing PI3K-insensitive GSK3 is normalized by beta-blocker treatment. *FASEB J, 30*(2), 994-1001. doi:10.1096/fj.15-279943

Fiorella, D., Mocco, J., Athur, A., Siddiqui, A., **Heck, D.**, Albuquerque, F., & Turk, A. (2015). Randomized controlled trials for everything? *J Neurointerv Surg, 7*(12), 861-863. doi:10.1136/neurintsurg-2015-012110

Freibaum, B. D., Lu, Y., Lopez-Gonzalez, R., Kim, N. C., Almeida, S., Lee, K. H., Badders, N., Valentine, M., Miller, B. L., Wong, P. C., Petrucelli, L., Kim, H. J., Gao, F. B., & **Taylor, J. P.** (2015). GGGGCC repeat expansion in C9orf72 compromises nucleocytoplasmic transport. *Nature, 525*(7567), 129-133. doi:10.1038/nature14974

Gao, B. T., Lee, R. P., Jiang, Y., Steinle, J. J., & **Morales-Tirado, V. M.** (2015). Pioglitazone alters monocyte populations and stimulates recent thymic emigrants in the BBDZR/Wor type 2 diabetes rat model. *Diabetol Metab Syndr, 7*, 72. doi:10.1186/s13098-015-0068-6

Gao, Y., & **Heldt, S. A.** (2016). Enrichment of GABAA Receptor alpha-Subunits on the Axonal Initial Segment

Shows Regional Differences. *Front Cell Neurosci, 10*, 39. doi:10.3389/fncel.2016.00039

Gardner, L. A., & **Levin, M. C.** (2015). Importance of Apolipoprotein A-I in Multiple Sclerosis. *Front Pharmacol, 6*, 278. doi:10.3389/fphar.2015.00278

Gennarino, V. A., Alcott, C. E., Chen, C. A., Chaudhury, A., Gillentine, M. A., Rosenfeld, J. A., Parikh, S., **Wheless, J. W.**, Roeder, E. R., Horovitz, D. D., Roney, E. K., Smith, J. L., Cheung, S. W., Li, W., Neilson, J. R., Schaaf, C. P., & Zoghbi, H. Y. (2015). NUDT21-spanning CNVs lead to neuropsychiatric disease and altered MeCP2 abundance via alternative polyadenylation. *Elife, 4*. doi:10.7554/eLife.10782

Gingras, S., Earls, L. R., Howell, S., Smeyne, R. J., **Zakharenko, S. S.**, & Pelletier, S. (2015). SCYL2 Protects CA3 Pyramidal Neurons from Excitotoxicity during Functional Maturation of the Mouse Hippocampus. *J Neurosci, 35*(29), 10510-10522. doi:10.1523/JNEUROSCI.2056-14.2015

Grace, C. R., Ban, D., Min, J., Mayasundari, A., Min, L., Finch, K. E., Griffiths, L., Bharatham, N., Bashford, D., Kiplin Guy, R., **Dyer, M. A.**, & Kriwacki, R. W. (2016). Monitoring Ligand-Induced Protein Ordering in Drug Discovery. *J Mol Biol, 428*(6), 1290-1303. doi:10.1016/j.jmb.2016.01.016

Grigaravicius, P., Kaminska, E., Hubner, C. A., **McKinnon, P. J.**, von Deimling, A., & Frappart, P. O. (2016). Rint1 inactivation triggers genomic instability, ER stress and autophagy inhibition in the brain. *Cell Death Differ, 23*(3), 454-468. doi:10.1038/cdd.2015.113

Guley, N. H., Rogers, J. T., Del Mar, N. A., Deng, Y., Islam, R. M., D'Surney, L., Ferrell, J., Deng, B., Hines-Beard, J., Bu, W., Ren, H., **Elberger, A. J.**, Marchetta, J. G., Rex, T. S., **Honig, M. G.**, & **Reiner, A.** (2016). A Novel Closed-Head Model of Mild Traumatic Brain Injury Using Focal Primary Overpressure Blast to the Cranium in Mice. *J Neurotrauma, 33*(4), 403-422. doi:10.1089/neu.2015.3886

Gupte, A., Baker, E. K., Wan, S. S., Stewart, E., Loh, A., Shelat, A. A., Gould, C. M., Chalk, A. M., Taylor, S., Lackovic, K., Karlstrom, A., Mutsaers, A. J., Desai, J., Madhamshettiwar, P. B., Zannettino, A. C., Burns, C., Huang, D. C., **Dyer, M. A.**, Simpson, K. J., & Walkley, C. R. (2015). Systematic Screening Identifies Dual PI3K and mTOR Inhibition as a Conserved Therapeutic Vulnerability in Osteosarcoma. *Clin Cancer Res, 21*(14), 3216-3229. doi:10.1158/1078-0432.CCR-14-3026

Ha, T., Swanson, D., Larouche, M., Glenn, R., Weeden, D., Zhang, P., **Hamre, K.**, Langston, M., Phillips, C., Song, M., Ouyang, Z., Chesler, E., Duvvurru, S., Yordanova, R., Cui, Y., Campbell, K., Ricker, G., Phillips, C., **Homayouni, R.**, & Goldowitz, D. (2015). CbGRiTS: cerebellar gene regulation in time and space. *Dev Biol, 397*(1), 18-30. doi:10.1016/j.ydbio.2014.09.032

Han, J. C. (2016). Rare Syndromes and Common Variants of the Brain-Derived Neurotrophic Factor Gene in Human Obesity. *Prog Mol Biol Transl Sci, 140*, 75-95. doi:10.1016/bs.pmbts.2015.12.002

Harsono, M., & **Pourcyrous, M.** (2016). Perineal Groove: A Rare Congenital Midline Defect of Perineum. *AJP Rep, 6*(1), e30-32. doi:10.1055/s-0035-1566311

Hatfield, I., Harvey, I., Yates, E. R., Redd, J. R., **Reiter, L. T.**, & Bridges, D. (2015). The role of TORC1 in muscle development in Drosophila. *Sci Rep, 5*, 9676. doi:10.1038/srep09676

Heimel, J. A., Overall, R. W., & **Williams, R. W.** (2015). Workshop report: INCF short course on neuroinformatics, neurogenomics, and brain disease, 14-21 September 2013. *Front Neurosci, 9*, 31. doi:10.3389/fnins.2015.00031

Heinecke, K. A., Luoma, A., **d'Azzo, A.**, Kirschner, D. A., & Seyfried, T. N. (2015). Myelin abnormalities in the optic and sciatic nerves in mice with GM1-gangliosidosis. *ASN Neuro, 7*(1). doi:10.1177/1759091415568913

Heo, J., Li, J., Summerlin, M., Hays, A., Katyal, S., **McKinnon, P. J.**, Nitiss, K. C., Nitiss, J. L., & Hanakahi, L. A. (2015). TDP1 promotes assembly of non-homologous end joining protein complexes on DNA. *DNA Repair (Amst), 30*, 28-37. doi:10.1016/j.dnarep.2015.03.003

Hibar, D. P., Stein, J. L., Renteria, M. E., **Lu, L.**, McMahon, F. J., Morris, D. W. … **Williams, R. W.** (2015). Common genetic variants influence human subcortical brain structures. *Nature, 520*(7546), 224-229. doi:10.1038/nature14101

Hiler, D., Chen, X., Hazen, J., Kupriyanov, S., Carroll, P. A., Qu, C., Xu, B., Johnson, D., Griffiths, L., Frase, S., Rodriguez, A. R., Martin, G., Zhang, J., Jeon, J., Fan, Y., Finkelstein, D., Eisenman, R. N., Baldwin, K., & **Dyer, M. A.** (2015). Quantification of Retinogenesis in 3D Cultures Reveals Epigenetic Memory and Higher Efficiency in iPSCs Derived from Rod Photoreceptors. *Cell Stem Cell, 17*(1), 101-115. doi:10.1016/j.stem.2015.05.015

Hwang, D. J., Wang, J., Li, W., & **Miller, D. D.** (2015). Structural Optimization of Indole Derivatives Acting at Colchicine Binding Site as Potential Anticancer Agents. *ACS Med Chem Lett, 6*(9), 993-997. doi:10.1021/acsmedchemlett.5b00208

Iconaru, L. I., Ban, D., Bharatham, K., Ramanathan, A., Zhang, W., Shelat, A. A., **Zuo, J.**, & Kriwacki, R. W. (2015). Discovery of Small Molecules that Inhibit the Disordered Protein, p27(Kip1). *Sci Rep, 5*, 15686. doi:10.1038/srep15686

Ikbale el, A., Goorha, S., **Reiter, L. T.**, & Miranda-Carboni, G. A. (2016). Effects of hTERT immortalization on osteogenic and adipogenic differentiation of dental pulp stem cells. *Data Brief, 6*, 696-699. doi:10.1016/j.dib.2016.01.009

Iskusnykh, I. Y., Steshina, E. Y., & **Chen, H. V.** (2016). Loss of Ptf1a Leads to a Widespread Cell-Fate Misspecification in the Brainstem, Affecting the Development of Somatosensory and Viscerosensory Nuclei. *J Neurosci, 36*(9), 2691-2710. doi:10.1523/JNEUROSCI.2526-15.2016

Jennings, B. L., Moore, J. A., Pingili, A. K., Estes, A. M., Fang, X. R., Kanu, A., Gonzalez, F. J., & **Malik, K. U.** (2015). Disruption of the cytochrome P-450 1B1 gene exacerbates renal dysfunction and damage associated with angiotensin II-induced hypertension in female mice. *Am J Physiol Renal Physiol, 308*(9), F981-992. doi:10.1152/ajprenal.00597.2014

Jiao, Y., **Chen, H.**, Gu, T., Wang, L., Postlethwaite, A., & Gu, W. (2015). Molecular network of important genes for systemic sclerosis-related progressive lung fibrosis. *BMC Res Notes, 8*, 544. doi:10.1186/s13104-015-1510-4

Katorcha, E., Klimova, N., Makarava, N., Savtchenko, R., Pan, X., Annunziata, I., Takahashi, K., Miyagi, T., Pshezhetsky, A. V., **d'Azzo, A.**, & Baskakov, I. V. (2015). Loss of Cellular Sialidases Does Not Affect the Sialylation Status of the Prion Protein but Increases the Amounts of Its Proteolytic Fragment C1. *PLoS One, 10*(11), e0143218. doi:10.1371/journal.pone.0143218

Khan, N. S., Song, C. Y., Thirunavukkarasu, S., Fang, X. R., Bonventre, J. V., & **Malik, K. U.** (2016). Cytosolic Phospholipase A2alpha Is Essential for Renal Dysfunction and End-Organ Damage Associated With Angiotensin II-Induced Hypertension. *Am J Hypertens, 29*(2), 258-265. doi:10.1093/ajh/hpv083

Khazaee, A., Ebrahimzadeh, A., & **Babajani-Feremi, A.** (2015). Identifying patients with Alzheimer's disease using resting-state fMRI and graph theory. *Clin Neurophysiol, 126*(11), 2132-2141. doi:10.1016/j.clinph.2015.02.060

Khazaee, A., Ebrahimzadeh, A., **Babajani-Feremi, A.**, & Alzheimer's Disease Neuroimaging, I. (2016). Classification of patients with MCI and AD from healthy controls using directed graph measures of resting-state fMRI. *Behav Brain Res*. doi:10.1016/j.bbr.2016.06.043

Kidd, M. W., Leo, M. D., Bannister, J. P., & **Jaggar, J. H.** (2015). Intravascular pressure enhances the abundance of functional Kv1.5 channels at the surface of arterial smooth muscle cells. *Sci Signal, 8*(390), ra83. doi:10.1126/scisignal.aac5128

Kilintari, M., **Narayana, S.**, **Babajani-Feremi, A.**, Rezaie, R., & **Papanicolaou, A. C.** (2016). Brain activation profiles during kinesthetic and visual imagery: An fMRI study. *Brain Res, 1646*, 249-261. doi:10.1016/j.brainres.2016.06.009

Kim, D. K., Lee, J., Kim, S. R., Choi, D. S., Yoon, Y. J., Kim, J. H., Go, G., Nhung, D., Hong, K., Jang, S. C. … **Desiderio, D. M.** (2015). EVpedia: a community web portal for extracellular vesicles research. *Bioinformatics, 31*(6), 933-939. doi:10.1093/bioinformatics/btu741

Kim, E., Wang, B., Sastry, N., Masliah, E., Nelson, P. T., Cai, H., & **Liao, F. F.** (2016). NEDD4-mediated HSF1 degradation underlies alpha-synucleinopathy. *Hum Mol Genet, 25*(2), 211-222. doi:10.1093/hmg/ddv445

Kim, J., & **Kita, H.** (2015). Posttetanic enhancement of striato-pallidal synaptic transmission. *J Neurophysiol, 114*(1), 447-454. doi:10.1152/jn.00241.2015

King, B. A., Parra, C., Li, Y., Helton, K. J., Qaddoumi, I., Wilson, M. W., & **Ogg, R. J.** (2015). Spatiotemporal Patterns of Tumor Occurrence in Children with Intraocular Retinoblastoma. *PLoS One, 10*(7), e0132932. doi:10.1371/journal.pone.0132932

King, R., **Lu, L.**, **Williams, R. W.**, & **Geisert, E. E.** (2015). Transcriptome networks in the mouse retina: An exon level BXD RI database. *Mol Vis, 21*, 1235-1251.

Kivlehan, F., **Chaum, E.**, & Lindner, E. (2015). Propofol detection and quantification in human blood: the promise of feedback controlled, closed-loop anesthesia. *Analyst, 140*(1), 98-106.

doi:10.1039/c4an01483a

Knowlden, S. A., Hillman, S. E., Chapman, T. J., Patil, R., **Miller, D. D.**, Tigyi, G., & Georas, S. N. (2016). Novel Inhibitory Effect of a Lysophosphatidic Acid 2 Agonist on Allergen-Driven Airway Inflammation. *Am J Respir Cell Mol Biol, 54*(3), 402-409. doi:10.1165/rcmb.2015-0124OC

Konstantinou, N., Pettemeridou, E., Seimenis, I., Eracleous, E., Papacostas, S. S., **Papanicolaou, A. C.**, & Constantinidou, F. (2016). Assessing the Relationship between Neurocognitive Performance and Brain Volume in Chronic Moderate-Severe Traumatic Brain Injury. *Front Neurol, 7*, 29. doi:10.3389/fneur.2016.00029

Kratochvill, F., Neale, G., Haverkamp, J. M., Van de Velde, L. A., Smith, A. M., Kawauchi, D., McEvoy, J., Roussel, M. F., **Dyer, M. A.**, Qualls, J. E., & Murray, P. J. (2015). TNF Counterbalances the Emergence of M2 Tumor Macrophages. *Cell Rep, 12*(11), 1902-1914. doi:10.1016/j.celrep.2015.08.033

Kudo, K., Zhao, L., & **Nowak, T. S., Jr.** (2016). Peri-infarct depolarizations during focal ischemia in the awake Spontaneously Hypertensive Rat. Minimizing anesthesia confounds in experimental stroke. *Neuroscience, 325*, 142-152. doi:10.1016/j.neuroscience.2016.03.049

Kuo, B. R., Baldwin, E. M., Layman, W. S., Taketo, M. M., & **Zuo, J.** (2015). In Vivo Cochlear Hair Cell Generation and Survival by Coactivation of beta-Catenin and Atoh1. *J Neurosci, 35*(30), 10786-10798. doi:10.1523/JNEUROSCI.0967-15.2015

Lang, E. J., Apps, R., Bengtsson, F., Cerminara, N. L., De Zeeuw, C. I., Ebner, T. J., **Heck, D. H.**, Jaeger, D., Jorntell, H., Kawato, M., Otis, T. S., Ozyildirim, O., Popa, L. S., Reeves, A. M., Schweighofer, N., Sugihara, I., & Xiao, J. (2016). The Roles of the Olivocerebellar Pathway in Motor Learning and Motor Control. A Consensus Paper. *Cerebellum*. doi:10.1007/s12311-016-0787-8

Langenau, D. M., Sweet-Cordero, A., Wechsler-Reya, R. J., & **Dyer, M. A.** (2015). Preclinical Models Provide Scientific Justification and Translational Relevance for Moving Novel Therapeutics into Clinical Trials for Pediatric Cancer. *Cancer Res, 75*(24), 5176-5186. doi:10.1158/0008-5472.CAN-15-1308

LaSalle, J. M., **Reiter, L. T.**, & Chamberlain, S. J. (2015). Epigenetic regulation of UBE3A and roles in human neurodevelopmental disorders. *Epigenomics, 7*(7), 1213-1228. doi:10.2217/epi.15.70

Layman, W. S., Williams, D. M., Dearman, J. A., Sauceda, M. A., & **Zuo, J.** (2015). Histone deacetylase inhibition protects hearing against acute ototoxicity by activating the Nf-kappaB pathway. *Cell Death Discov, 1*. doi:10.1038/cddiscovery.2015.12

Layman, W. S., & **Zuo, J.** (2015). Preventing ototoxic hearing loss by inhibiting histone deacetylases. *Cell Death Dis, 6*, e1882. doi:10.1038/cddis.2015.252

LeDoux, M. S., Vemula, S. R., Xiao, J., Thompson, M. M., Perlmutter, J. S., Wright, L. J., Jinnah, H. A., Rosen, A. R., Hedera, P., Comella, C. L., Weissbach, A., Junker, J., Jankovic, J., Barbano, R. L., Reich, S. G., Rodriguez, R. L., Berman, B. D., Chouinard, S., Severt, L., Agarwal, P., & Stover, N. P. (2016). Clinical and genetic features of cervical dystonia in a large multicenter cohort. *Neurol Genet, 2*(3), e69. doi:10.1212/NXG.0000000000000069

Lee, S. C., Fujiwara, Y., Liu, J., Yue, J., Shimizu, Y., Norman, D. D., Wang, Y., Tsukahara, R., Szabo, E., Patil, R., Banerjee, S., **Miller, D. D.**, Balazs, L., Ghosh, M. C., Waters, C. M., Oravecz, T., & Tigyi, G. J. (2015). Autotaxin and LPA1 and LPA5 receptors exert disparate functions in tumor cells versus the host tissue microenvironment in melanoma invasion and metastasis. *Mol Cancer Res, 13*(1), 174-185. doi:10.1158/1541-7786.MCR-14-0263

Leo, M. D., Bulley, S., Bannister, J. P., Kuruvilla, K. P., Narayanan, D., & **Jaggar, J. H.** (2015). Angiotensin II stimulates internalization and degradation of arterial myocyte plasma membrane BK channels to induce vasoconstriction. *Am J Physiol Cell Physiol, 309*(6), C392-402. doi:10.1152/ajpcell.00127.2015

Li, B., Li, H., Bai, Y., Kirschner-Schwabe, R., Yang, J. J., Chen, Y., Lu, G., Tzoneva, G., Ma, X., Wu, T., Li, W., Lu, H., Ding, L., Liang, H., Huang, X., Yang, M., Jin, L., Kang, H., Chen, S., Du, A., Shen, S., Ding, J., **Chen, H.**, Chen, J., von Stackelberg, A., Gu, L., Zhang, J., Ferrando, A., Tang, J., Wang, S., & Zhou, B. B. (2015). Negative feedback-defective PRPS1 mutants drive thiopurine resistance in relapsed childhood ALL. *Nat Med, 21*(6), 563-571. doi:10.1038/nm.3840

Li, L., Sagot, B., & **Zhou, F. M.** (2015). Similar L-dopa-stimulated motor activity in mice with adult-onset 6-hydroxydopamine-induced symmetric dopamine denervation and in transcription factor Pitx3 null mice with perinatal-onset symmetric dopamine denervation. *Brain Res, 1615*, 12-21.

doi:10.1016/j.brainres.2015.04.011

Li, S., Zhang, P., Freibaum, B. D., Kim, N. C., Kolaitis, R. M., Molliex, A., Kanagaraj, A. P., Yabe, I., Tanino, M., Tanaka, S., Sasaki, H., Ross, E. D., **Taylor, J. P.**, & Kim, H. J. (2016). Genetic interaction of hnRNPA2B1 and DNAJB6 in a Drosophila model of multisystem proteinopathy. *Hum Mol Genet, 25*(5), 936-950. doi:10.1093/hmg/ddv627

Lin, C. Y., Erkek, S., Tong, Y., Yin, L., Federation, A. J., Zapatka, M., Haldipur, P., Kawauchi, D., Risch, T., Warnatz, H. J., Worst, B. C., Ju, B., Orr, B. A., Zeid, R., Polaski, D. R., Segura-Wang, M., Waszak, S. M., Jones, D. T., Kool, M., Hovestadt, V., Buchhalter, I., Sieber, L., Johann, P., Chavez, L., Groschel, S., Ryzhova, M., Korshunov, A., Chen, W., **Chizhikov, V. V.**, Millen, K. J., Amstislavskiy, V., Lehrach, H., Yaspo, M. L., Eils, R., Lichter, P., Korbel, J. O., Pfister, S. M., Bradner, J. E., & Northcott, P. A. (2016). Active medulloblastoma enhancers reveal subgroup-specific cellular origins. *Nature, 530*(7588), 57-62. doi:10.1038/nature16546

Lin, Z., Marepally, S. R., Kim, T. K., Janjetovic, Z., Oak, A. S., Postlethwaite, A. E., Myers, L. K., Tuckey, R. C., Slominski, A. T., **Miller, D. D.**, & Li, W. (2016). Design, Synthesis and Biological Activities of Novel Gemini 20S-Hydroxyvitamin D3 Analogs. *Anticancer Res, 36*(3), 877-886.

Lin, Z., Marepally, S. R., Ma, D., Kim, T. K., Oak, A. S., Myers, L. K., Tuckey, R. C., Slominski, A. T., **Miller, D. D.**, & Li, W. (2016). Synthesis and Biological Evaluation of Vitamin D3 Metabolite 20S,23S-Dihydroxyvitamin D3 and Its 23R Epimer. *J Med Chem, 59*(10), 5102-5108. doi:10.1021/acs.jmedchem.6b00182

Lin, Z., Marepally, S. R., Ma, D., Myers, L. K., Postlethwaite, A. E., Tuckey, R. C., Cheng, C. Y., Kim, T. K., Yue, J., Slominski, A. T., **Miller, D. D.**, & Li, W. (2015). Chemical Synthesis and Biological Activities of 20S,24S/R-Dihydroxyvitamin D3 Epimers and Their 1alpha-Hydroxyl Derivatives. *J Med Chem, 58*(19), 7881-7887. doi:10.1021/acs.jmedchem.5b00881

Lindsey, J. C., Kawauchi, D., Schwalbe, E. C., Solecki, D. J., Selby, M. P., **McKinnon, P. J.**, Olson, J. M., Hayden, J. T., Grundy, R. G., Ellison, D. W., Williamson, D., Bailey, S., Roussel, M. F., & Clifford, S. C. (2015). Cross-species epigenetics identifies a critical role for VAV1 in SHH subgroup medulloblastoma maintenance. *Oncogene, 34*(36), 4746-4757. doi:10.1038/onc.2014.405

Liu, K., & **Steketee, J. D.** (2016). The role of adenylyl cyclase in the medial prefrontal cortex in cocaine-induced behavioral sensitization in rats. *Neuropharmacology, 111*, 70-77. doi:10.1016/j.neuropharm.2016.03.040

Liu, X., **Chen, H.**, Bo, Q. G., Fan, F., & Jia, C. X. (2016). Poor sleep quality and nightmares are associated with non-suicidal self-injury in adolescents. *Eur Child Adolesc Psychiatry*. doi:10.1007/s00787-016-0885-7

Liu, X., Yamashita, T., Chen, Q., Belevych, N., McKim, D. B., Tarr, A. J., Coppola, V., Nath, N., Nemeth, D. P., Syed, Z. W., Sheridan, J. F., Godbout, J. P., **Zuo, J.**, & Quan, N. (2015). Interleukin 1 type 1 receptor restore: a genetic mouse model for studying interleukin 1 receptor-mediated effects in specific cell types. *J Neurosci, 35*(7), 2860-2870. doi:10.1523/JNEUROSCI.3199-14.2015

Loos, M., Li, K. W., van der Schors, R., Gouwenberg, Y., van der Loo, R., **Williams, R. W.**, Smit, A. B., & Spijker, S. (2016). Impact of genetic variation on synaptic protein levels in genetically diverse mice. *Proteomics, 16*(7), 1123-1130. doi:10.1002/pmic.201500154

Lu, H., **Lu, L.**, **Williams, R. W.**, & **Jablonski, M. M.** (2016). Iris transillumination defect and its gene modulators do not correlate with intraocular pressure in the BXD family of mice. *Mol Vis, 22*, 224-233.

Lu, L., Pandey, A. K., Houseal, M. T., & Mulligan, M. K. (2016). The Genetic Architecture of Murine Glutathione Transferases. *PLoS One, 11*(2), e0148230. doi:10.1371/journal.pone.0148230

Machado, E., White-Gilbertson, S., van de Vlekkert, D., Janke, L., Moshiach, S., Campos, Y., Finkelstein, D., Gomero, E., Mosca, R., Qiu, X., Morton, C. L., Annunziata, I., & **d'Azzo, A.** (2015). Regulated lysosomal exocytosis mediates cancer progression. *Sci Adv, 1*(11), e1500603. doi:10.1126/sciadv.1500603

Maiti, P., Gregg, L. C., & **McDonald, M. P.** (2016). MPTP-induced executive dysfunction is associated with altered prefrontal serotonergic function. *Behav Brain Res, 298*(Pt B), 192-201. doi:10.1016/j.bbr.2015.09.014

Maiti, P., Manna, J., & **McDonald, M. P.** (2015). Merging advanced technologies with classical methods to uncover dendritic spine dynamics: A hot spot of synaptic plasticity. *Neurosci Res, 96*, 1-13. doi:10.1016/j.neures.2015.02.007

Mantilla, C., Jacobo, A. M., Jones, T., Clayton, M., Decker, K., Sotheimer, S., Mirro, M., & **Han, J. C.** (2016). Diabetes Prevention Program (Insulin Superheroes Club): Metabolic Parameters and Physical Fitness Improvements Among Latino Youth.: 3397 June 3 3: 45 PM - 4: 00 PM. *Med Sci Sports Exerc, 48*(5 Suppl 1), 958. doi:10.1249/01.mss.0000487869.51106.f3

Marjanovic, M., Sanchez-Huertas, C., Terre, B., Gomez, R., Scheel, J. F., Pacheco, S., Knobel, P. A., Martinez-Marchal, A., Aivio, S., Palenzuela, L., Wolfrum, U., **McKinnon, P. J.**, Suja, J. A., Roig, I., Costanzo, V., Luders, J., & Stracker, T. H. (2015). CEP63 deficiency promotes p53-dependent microcephaly and reveals a role for the centrosome in meiotic recombination. *Nat Commun, 6*, 7676. doi:10.1038/ncomms8676

Marzahn, M. R., Marada, S., Lee, J., Nourse, A., Kenrick, S., Zhao, H., Ben-Nissan, G., Kolaitis, R. M., Peters, J. L., Pounds, S., Errington, W. J., Prive, G. G., **Taylor, J. P.**, Sharon, M., Schuck, P., Ogden, S. K., & Mittag, T. (2016). Higher-order oligomerization promotes localization of SPOP to liquid nuclear speckles. *EMBO J, 35*(12), 1254-1275. doi:10.15252/embj.201593169

McAfee, S. S., Ogg, M. C., Ross, J. M., Liu, Y., **Fletcher, M. L.**, & **Heck, D. H.** (2016). Minimally invasive highly precise monitoring of respiratory rhythm in the mouse using an epithelial temperature probe. *J Neurosci Methods, 263*, 89-94. doi:10.1016/j.jneumeth.2016.02.007

McEvoy, J. D., & **Dyer, M. A.** (2015). Genetic and Epigenetic Discoveries in Human Retinoblastoma. *Crit Rev Oncog, 20*(3-4), 217-225.

Mir, H., Meena, A. S., Chaudhry, K. K., Shukla, P. K., Gangwar, R., Manda, B., Padala, M. K., Shen, L., Turner, J. R., **Dietrich, P.**, **Dragatsis, I.**, & Rao, R. (2016). Occludin deficiency promotes ethanol-induced disruption of colonic epithelial junctions, gut barrier dysfunction and liver damage in mice. *Biochim Biophys Acta, 1860*(4), 765-774. doi:10.1016/j.bbagen.2015.12.013

Molliex, A., Temirov, J., Lee, J., Coughlin, M., Kanagaraj, A. P., Kim, H. J., Mittag, T., & **Taylor, J. P.** (2015). Phase separation by low complexity domains promotes stress granule assembly and drives pathological fibrillization. *Cell, 163*(1), 123-133. doi:10.1016/j.cell.2015.09.015

Morini, E., **Dietrich, P.**, Salani, M., Downs, H. M., Wojtkiewicz, G. R., Alli, S., Brenner, A., Nilbratt, M., LeClair, J. W., Oaklander, A. L., Slaugenhaupt, S. A., & **Dragatsis, I.** (2016). Sensory and autonomic deficits in a new humanized mouse model of familial dysautonomia. *Hum Mol Genet, 25*(6), 1116-1128. doi:10.1093/hmg/ddv634

Mou, Z., Hyde, T. M., Lipska, B. K., Martinowich, K., Wei, P., Ong, C. J., Hunter, L. A., Palaguachi, G. I., Morgun, E., Teng, R., Lai, C., Condarco, T. A., Demidowich, A. P., Krause, A. J., Marshall, L. J., Haack, K., Voruganti, V. S., Cole, S. A., Butte, N. F., Comuzzie, A. G., Nalls, M. A., Zonderman, A. B., Singleton, A. B., Evans, M. K., Martin, B., Maudsley, S., **Tsao, J. W.**, Kleinman, J. E., Yanovski, J. A., & **Han, J. C.** (2015). Human Obesity Associated with an Intronic SNP in the Brain-Derived Neurotrophic Factor Locus. *Cell Rep, 13*(6), 1073-1080. doi:10.1016/j.celrep.2015.09.065

Mudigoudar, B., Weatherspoon, S., & **Wheless, J. W.** (2016). Emerging Antiepileptic Drugs for Severe Pediatric Epilepsies. *Semin Pediatr Neurol, 23*(2), 167-179. doi:10.1016/j.spen.2016.06.003

Murgai, A. A., & **LeDoux, M. S.** (2015). Memantine-induced Myoclonus in a Patient with Alzheimer Disease. *Tremor Other Hyperkinet Mov (N Y), 5*, 337. doi:10.7916/D8ZG6RD9

Myers, M. H., Li, Y., Kivlehan, F., Lindner, E., & **Chaum, E.** (2016). A Feedback Control Approach to Organic Drug Infusions Using Electrochemical Measurement. *IEEE Trans Biomed Eng, 63*(3), 506-511. doi:10.1109/TBME.2015.2464771

Mylonas, D. S., Siettos, C. I., Evdokimidis, I., **Papanicolaou, A. C.**, & Smyrnis, N. (2016). Modular Patterns of Phase Desynchronization Networks During a Simple Visuomotor Task. *Brain Topogr, 29*(1), 118-129. doi:10.1007/s10548-015-0451-5

Nagahawatte, P., Willis, E., Sakauye, M., Jose, R., **Chen, H.**, & Davis, R. L. (2016). Featured Article: Genotation: Actionable knowledge for the scientific reader. *Exp Biol Med (Maywood), 241*(11), 1202-1209. doi:10.1177/1535370216633795

Narayana, S., **Papanicolaou, A. C.**, **McGregor, A.**, **Boop, F. A.**, & **Wheless, J. W.** (2015). Clinical Applications of Transcranial Magnetic Stimulation in Pediatric Neurology. *J Child Neurol, 30*(9), 1111-1124. doi:10.1177/0883073814553274

Narayana, S., Rezaie, R., McAfee, S. S., Choudhri, A. F., **Babajani-Feremi, A.**, Fulton, S., **Boop, F. A.**,

Wheless, J. W., & **Papanicolaou, A. C.** (2015). Assessing motor function in young children with transcranial magnetic stimulation. *Pediatr Neurol, 52*(1), 94-103. doi:10.1016/j.pediatrneurol.2014.08.031

Narenthiran, G., & **Boop, F.** (2016). Print and electronic books and journals. *Childs Nerv Syst, 32*(1), 3-6. doi:10.1007/s00381-015-2696-4

Ness, R. A., **Miller, D. D.**, & Li, W. (2015). The role of vitamin D in cancer prevention. *Chin J Nat Med, 13*(7), 481-497. doi:10.1016/S1875-5364(15)30043-1

Neuner, S. M., Garfinkel, B. P., Wilmott, L. A., Ignatowska-Jankowska, B. M., Citri, A., Orly, J., **Lu, L.**, Overall, R. W., Mulligan, M. K., Kempermann, G., **Williams, R. W.**, **O'Connell, K. M.**, & **Kaczorowski, C. C.** (2016). Systems genetics identifies Hp1bp3 as a novel modulator of cognitive aging. *Neurobiol Aging, 46*, 58-67. doi:10.1016/j.neurobiolaging.2016.06.008

Neuner, S. M., Wilmott, L. A., Hoffmann, B. R., **Mozhui, K.**, & **Kaczorowski, C. C.** (2016). Hippocampal proteomics defines pathways associated with memory decline and resilience in normal aging and Alzheimer's disease mouse models. *Behav Brain Res*. doi:10.1016/j.bbr.2016.06.002

Neves Jde, C., Rizzato, V. R., Fappi, A., Garcia, M. M., Chadi, G., van de Vlekkert, D., **d'Azzo, A.**, & Zanoteli, E. (2015). Neuraminidase-1 mediates skeletal muscle regeneration. *Biochim Biophys Acta, 1852*(9), 1755-1764. doi:10.1016/j.bbadis.2015.05.006

Ogg, M. C., Bendahamane, M., & **Fletcher, M. L.** (2015). Habituation of glomerular responses in the olfactory bulb following prolonged odor stimulation reflects reduced peripheral input. *Front Mol Neurosci, 8*, 53. doi:10.3389/fnmol.2015.00053

Oh, S. Y., He, F., Krans, A., Frazer, M., **Taylor, J. P.**, Paulson, H. L., & Todd, P. K. (2015). RAN translation at CGG repeats induces ubiquitin proteasome system impairment in models of fragile X-associated tremor ataxia syndrome. *Hum Mol Genet, 24*(15), 4317-4326. doi:10.1093/hmg/ddv165

Opris, I., Lebedev, M. A., & **Nelson, R. J.** (2016). Neostriatal Neuronal Activity Correlates Better with Movement Kinematics under Certain Rewards. *Front Neurosci, 10*, 336. doi:10.3389/fnins.2016.00336

Pasquina, P. F., Perry, B. N., Alphonso, A. L., Finn, S., Fitzpatrick, K. F., & **Tsao, J. W.** (2016). Residual Limb Hyperhidrosis and RimabotulinumtoxinB: A Randomized Placebo-Controlled Study. *Arch Phys Med Rehabil, 97*(5), 659-664 e652. doi:10.1016/j.apmr.2015.12.027

Pathak, D., Guan, D., & **Foehring, R. C.** (2016). Roles of specific Kv channel types in repolarization of the action potential in genetically identified subclasses of pyramidal neurons in mouse neocortex. *J Neurophysiol, 115*(5), 2317-2329. doi:10.1152/jn.01028.2015

Patil, R., Szabo, E., Fells, J. I., Balogh, A., Lim, K. G., Fujiwara, Y., Norman, D. D., Lee, S. C., Balazs, L., Thomas, F., Patil, S., Emmons-Thompson, K., Boler, A., Strobos, J., McCool, S. W., Yates, C. R., Stabenow, J., Byrne, G. I., **Miller, D. D.**, & Tigyi, G. J. (2015). Combined mitigation of the gastrointestinal and hematopoietic acute radiation syndromes by an LPA2 receptor-specific nonlipid agonist. *Chem Biol, 22*(2), 206-216. doi:10.1016/j.chembiol.2014.12.009

Patil, S. A., Pfeffer, S. R., Seibel, W. L., Pfeffer, L. M., & **Miller, D. D.** (2015). Identification of imidazoquinoline derivatives as potent antiglioma agents. *Med Chem, 11*(4), 400-406.

Patterson, A. L., Mudigoudar, B., Fulton, S., **McGregor, A.**, Poppel, K. V., Wheless, M. C., Brooks, L., & **Wheless, J. W.** (2015). SmartWatch by SmartMonitor: Assessment of Seizure Detection Efficacy for Various Seizure Types in Children, a Large Prospective Single-Center Study. *Pediatr Neurol, 53*(4), 309-311. doi:10.1016/j.pediatrneurol.2015.07.002

Peixoto-Neves, D., Wang, Q., Leal-Cardoso, J. H., Rossoni, L. V., & **Jaggar, J. H.** (2015). Eugenol dilates mesenteric arteries and reduces systemic BP by activating endothelial cell TRPV4 channels. *Br J Pharmacol, 172*(14), 3484-3494. doi:10.1111/bph.13156

Peng, F., Li, J., Guo, T., Yang, H., Li, M., Sang, S., Li, X., **Desiderio, D. M.**, & Zhan, X. (2015). Nitroproteins in Human Astrocytomas Discovered by Gel Electrophoresis and Tandem Mass Spectrometry. *J Am Soc Mass Spectrom, 26*(12), 2062-2076. doi:10.1007/s13361-015-1270-3

Pi, M., Kapoor, K., Wu, Y., Ye, R., **Senogles, S. E.**, Nishimoto, S. K., Hwang, D. J., **Miller, D. D.**, Narayanan, R., Smith, J. C., Baudry, J., & Quarles, L. D. (2015). Structural and Functional Evidence for Testosterone Activation of GPRC6A in Peripheral Tissues. *Mol Endocrinol, 29*(12), 1759-1773. doi:10.1210/me.2015-1161

Pingili, A. K., Thirunavukkarasu, S., Kara, M., Brand, D. D., Katsurada, A., Majid, D. S., Navar, L. G., Gonzalez, F. J., & **Malik, K. U.** (2016). 6beta-Hydroxytestosterone, a Cytochrome P450 1B1-Testosterone-Metabolite, Mediates Angiotensin II-Induced Renal Dysfunction in Male Mice. *Hypertension, 67*(5), 916-926. doi:10.1161/HYPERTENSIONAHA.115.06936

Presley, C., Abidi, A., Suryawanshi, S., Mustafa, S., Meibohm, B., & **Moore, B. M.** (2015). Preclinical evaluation of SMM-189, a cannabinoid receptor 2-specific inverse agonist. *Pharmacol Res Perspect, 3*(4), e00159. doi:10.1002/prp2.159

Presley, C. S., Abidi, A. H., & **Moore, B. M.**, 2nd. (2016). Cannabinoid receptor 1 ligands revisited: Pharmacological assessment in the ACTOne system. *Anal Biochem, 498*, 8-28. doi:10.1016/j.ab.2015.12.019

Presley, C. S., Mustafa, S. M., Abidi, A. H., & **Moore, B. M.**, 2nd. (2015). Synthesis and biological evaluation of (3',5'-dichloro-2,6-dihydroxy-biphenyl-4-yl)-aryl/alkyl-methanone selective CB2 inverse agonist. *Bioorg Med Chem, 23*(17), 5390-5401. doi:10.1016/j.bmc.2015.07.057

Prisco, A. R., Hoffmann, B. R., **Kaczorowski, C. C.**, McDermott-Roe, C., Stodola, T. J., Exner, E. C., & Greene, A. S. (2016). Tumor Necrosis Factor alpha Regulates Endothelial Progenitor Cell Migration via CADM1 and NF-kB. *Stem Cells, 34*(7), 1922-1933. doi:10.1002/stem.2339

Qaddoumi, I., Orisme, W., Wen, J., Santiago, T., Gupta, K., Dalton, J. D., Tang, B., Haupfear, K., Punchihewa, C., Easton, J., Mulder, H., Boggs, K., Shao, Y., Rusch, M., Becksfort, J., Gupta, P., Wang, S., Lee, R. P., Brat, D., Peter Collins, V., Dahiya, S., George, D., Konomos, W., Kurian, K. M., McFadden, K., Serafini, L. N., Nickols, H., Perry, A., Shurtleff, S., Gajjar, A., **Boop, F. A.**, Klimo, P. D., Jr., Mardis, E. R., Wilson, R. K., Baker, S. J., Zhang, J., Wu, G., Downing, J. R., Tatevossian, R. G., & Ellison, D. W. (2016). Genetic alterations in uncommon low-grade neuroepithelial tumors: BRAF, FGFR1, and MYB mutations occur at high frequency and align with morphology. *Acta Neuropathol, 131*(6), 833-845. doi:10.1007/s00401-016-1539-z

Rana, P., Sharma, A. K., Jain, S., Deshmukh, P., **Bhattacharya, S. K.**, Banerjee, B. D., & Mediratta, P. K. (2016). Comparison of fluoxetine and 1-methyl-L-tryptophan in treatment of depression-like illness in Bacillus Calmette-Guerin-induced inflammatory model of depression in mice. *J Basic Clin Physiol Pharmacol*. doi:10.1515/jbcpp-2015-0120

Rao, P. S., Midde, N. M., **Miller, D. D.**, Chauhan, S., Kumar, A., & Kumar, S. (2015). Diallyl Sulfide: Potential Use in Novel Therapeutic Interventions in Alcohol, Drugs, and Disease Mediated Cellular Toxicity by Targeting Cytochrome P450 2E1. *Curr Drug Metab, 16*(6), 486-503.

Rebecca Glatt, A., St John, S. J., **Lu, L.**, & **Boughter, J. D., Jr.** (2016). Temporal and qualitative dynamics of conditioned taste aversions in C57BL/6J and DBA/2J mice self-administering LiCl. *Physiol Behav, 153*, 97-108. doi:10.1016/j.physbeh.2015.10.033

Regier, D. S., Proia, R. L., **D'Azzo, A.**, & Tifft, C. J. (2016). The GM1 and GM2 Gangliosidoses: Natural History and Progress toward Therapy. *Pediatr Endocrinol Rev, 13 Suppl 1*, 663-673.

Reiner, A., Wong, T. T., Nazor, C. C., Del Mar, N., & **Fitzgerald, M. E.** (2016). Type-specific photoreceptor loss in pigeons after disruption of parasympathetic control of choroidal blood flow by the medial subdivision of the nucleus of Edinger-Westphal. *Vis Neurosci, 33*, E008. doi:10.1017/S0952523816000043

Rentz, A. M., Skalicky, A. M., Pashos, C. L., Liu, Z., Magestro, M., Pelletier, C. L., Prestifilippo, J. A., Nakagawa, J., Frost, M. D., Dunn, D. W., & **Wheless, J. W.** (2015). Caring for Children With Tuberous Sclerosis Complex: What Is the Physical and Mental Health Impact on Caregivers? *J Child Neurol, 30*(12), 1574-1581. doi:10.1177/0883073815575364

Rinker, J. A., Fulmer, D. B., Trantham-Davidson, H., Smith, M. L., **Williams, R. W.**, Lopez, M. F., Randall, P. K., Chandler, L. J., Miles, M. F., Becker, H. C., & Mulholland, P. J. (2016). Differential potassium channel gene regulation in BXD mice reveals novel targets for pharmacogenetic therapies to reduce heavy alcohol drinking. *Alcohol*. doi:10.1016/j.alcohol.2016.05.007

Rivas-Coppola, M. S., Shah, N., Choudhri, A. F., Morgan, R., & **Wheless, J. W.** (2016). Chronological Evolution of Magnetic Resonance Imaging Findings in Children With Febrile Infection-Related Epilepsy Syndrome. *Pediatr Neurol, 55*, 22-29. doi:10.1016/j.pediatrneurol.2015.09.003

Sabin, N. D., Merchant, T. E., Li, X., Li, Y., Klimo, P., Jr., **Boop, F. A.**, Ellison, D. W., & **Ogg, R. J.** (2016).

Quantitative imaging analysis of posterior fossa ependymoma location in children. *Childs Nerv Syst, 32*(8), 1441-1447. doi:10.1007/s00381-016-3092-4

Saites, L. N., Goldsmith, Z., Densky, J., Guedes, V. A., & **Boughter, J. D., Jr.** (2015). Mice perceive synergistic umami mixtures as tasting sweet. *Chem Senses, 40*(5), 295-303. doi:10.1093/chemse/bjv010

Salami, F., Qiao, S., & **Homayouni, R.** (2015). Expression of mouse Dab2ip transcript variants and gene methylation during brain development. *Gene, 568*(1), 19-24. doi:10.1016/j.gene.2015.05.012

Salinas, F. S., Franklin, C., **Narayana, S.**, Szabo, C. A., & Fox, P. T. (2016). Repetitive Transcranial Magnetic Stimulation Educes Frequency-Specific Causal Relationships in the Motor Network. *Brain Stimul, 9*(3), 406-414. doi:10.1016/j.brs.2016.02.006

Sanhueza, M., Chai, A., Smith, C., McCray, B. A., Simpson, T. I., **Taylor, J. P.**, & Pennetta, G. (2015). Network analyses reveal novel aspects of ALS pathogenesis. *PLoS Genet, 11*(3), e1005107. doi:10.1371/journal.pgen.1005107

Schultz, N. G., Ingels, J., Hillhouse, A., Wardwell, K., Chang, P. L., Cheverud, J. M., Lutz, C., **Lu, L.**, **Williams, R. W.**, & Dean, M. D. (2016). The Genetic Basis of Baculum Size and Shape Variation in Mice. *G3 (Bethesda), 6*(5), 1141-1151. doi:10.1534/g3.116.027888

Senol, S. P., Temiz, M., Guden, D. S., Cecen, P., Sari, A. N., Sahan-Firat, S., Falck, J. R., Dakarapu, R., **Malik, K. U.**, & Tunctan, B. (2016). Contribution of PPARalpha/beta/gamma, AP-1, importin-alpha3, and RXRalpha to the protective effect of 5,14-HEDGE, a 20-HETE mimetic, against hypotension, tachycardia, and inflammation in a rat model of septic shock. *Inflamm Res, 65*(5), 367-387. doi:10.1007/s00011-016-0922-5

Shi, X., Walter, N. A., Harkness, J. H., Neve, K. A., **Williams, R. W.**, **Lu, L.**, Belknap, J. K., Eshleman, A. J., Phillips, T. J., & Janowsky, A. (2016). Genetic Polymorphisms Affect Mouse and Human Trace Amine-Associated Receptor 1 Function. *PLoS One, 11*(3), e0152581. doi:10.1371/journal.pone.0152581

Shimada, M., Dumitrache, L. C., Russell, H. R., & **McKinnon, P. J.** (2015). Polynucleotide kinase-phosphatase enables neurogenesis via multiple DNA repair pathways to maintain genome stability. *EMBO J, 34*(19), 2465-2480. doi:10.15252/embj.201591363

Slomka, T., Lennon, E. S., Akbar, H., Gosmanova, E. O., **Bhattacharya, S. K.**, Oliphant, C. S., & Khouzam, R. N. (2016). Effects of Renin-Angiotensin-Aldosterone System Blockade in Patients with End-Stage Renal Disease. *Am J Med Sci, 351*(3), 309-316. doi:10.1016/j.amjms.2015.12.021

Song, C. Y., Ghafoor, K., Ghafoor, H. U., Khan, N. S., Thirunavukkarasu, S., Jennings, B. L., Estes, A. M., Zaidi, S., Bridges, D., Tso, P., Gonzalez, F. J., & **Malik, K. U.** (2016). Cytochrome P450 1B1 Contributes to the Development of Atherosclerosis and Hypertension in Apolipoprotein E-Deficient Mice. *Hypertension, 67*(1), 206-213. doi:10.1161/HYPERTENSIONAHA.115.06427

Stanfill, A., Hathaway, D., Cashion, A., **Homayouni, R.**, Cowan, P., Thompson, C., Madahian, B., & Conley, Y. (2015). A Pilot Study of Demographic and Dopaminergic Genetic Contributions to Weight Change in Kidney Transplant Recipients. *PLoS One, 10*(9), e0138885. doi:10.1371/journal.pone.0138885

Stanfill, A. G., Conley, Y., Cashion, A., Thompson, C., **Homayouni, R.**, Cowan, P., & Hathaway, D. (2015). Neurogenetic and Neuroimaging Evidence for a Conceptual Model of Dopaminergic Contributions to Obesity. *Biol Res Nurs, 17*(4), 413-421. doi:10.1177/1099800414565170

Stephenson, E. J., Ragauskas, A., Jaligama, S., Redd, J. R., Parvathareddy, J., Peloquin, M. J., Saravia, J., **Han, J. C.**, Cormier, S. A., & Bridges, D. (2016). Exposure to environmentally persistent free radicals during gestation lowers energy expenditure and impairs skeletal muscle mitochondrial function in adult mice. *Am J Physiol Endocrinol Metab, 310*(11), E1003-1015. doi:10.1152/ajpendo.00521.2015

Stewart, E., Federico, S., Karlstrom, A., Shelat, A., Sablauer, A., Pappo, A., & **Dyer, M. A.** (2016). The Childhood Solid Tumor Network: A new resource for the developmental biology and oncology research communities. *Dev Biol, 411*(2), 287-293. doi:10.1016/j.ydbio.2015.03.001

Stewart, E., Shelat, A., Bradley, C., Chen, X., Federico, S., Thiagarajan, S., Shirinifard, A., Bahrami, A., Pappo, A., Qu, C., Finkelstein, D., Sablauer, A., & **Dyer, M. A.** (2015). Development and characterization of a human orthotopic neuroblastoma xenograft. *Dev Biol, 407*(2), 344-355. doi:10.1016/j.ydbio.2015.02.002

Taylor, J. P. (2015). Multisystem proteinopathy: intersecting genetics in muscle, bone, and brain degeneration. *Neurology, 85*(8), 658-660. doi:10.1212/WNL.0000000000001862

Teitz, T., Goktug, A. N., Chen, T., & **Zuo, J.** (2016). Development of Cell-Based High-Throughput Chemical

Screens for Protection Against Cisplatin-Induced Ototoxicity. *Methods Mol Biol, 1427*, 419-430. doi:10.1007/978-1-4939-3615-1_22

Thirunavukkarasu, S., Khan, N. S., Song, C. Y., Ghafoor, H. U., Brand, D. D., Gonzalez, F. J., & **Malik, K. U.** (2016). Cytochrome P450 1B1 Contributes to the Development of Angiotensin II-Induced Aortic Aneurysm in Male Apoe(-/-) Mice. *Am J Pathol, 186*(8), 2204-2219. doi:10.1016/j.ajpath.2016.04.005

Tokita, K., & **Boughter, J. D., Jr.** (2016). Topographic organizations of taste-responsive neurons in the parabrachial nucleus of C57BL/6J mice: An electrophysiological mapping study. *Neuroscience, 316*, 151-166. doi:10.1016/j.neuroscience.2015.12.030

Uh, J., Merchant, T. E., Li, Y., Li, X., Sabin, N. D., Indelicato, D. J., **Ogg, R. J.**, **Boop, F. A.**, Jane, J. A., Jr., & Hua, C. (2015). Effects of Surgery and Proton Therapy on Cerebral White Matter of Craniopharyngioma Patients. *Int J Radiat Oncol Biol Phys, 93*(1), 64-71. doi:10.1016/j.ijrobp.2015.05.017

Upadhyay, K., **Pourcyrous, M.**, Dhanireddy, R., & Talati, A. J. (2015). Outcomes of neonates with birth weight500 g: a 20-year experience. *J Perinatol, 35*(9), 768-772. doi:10.1038/jp.2015.44

Urquhart, K. R., Zhao, Y., Baker, J. A., Lu, Y., Yan, L., Cook, M. N., **Jones, B. C.**, **Hamre, K. M.**, & **Lu, L.** (2016). A novel heat shock protein alpha 8 (Hspa8) molecular network mediating responses to stress- and ethanol-related behaviors. *Neurogenetics, 17*(2), 91-105. doi:10.1007/s10048-015-0470-0

Urraca, N., Memon, R., El-Iyachi, I., Goorha, S., Valdez, C., Tran, Q. T., **Scroggs, R.**, Miranda-Carboni, G. A., Donaldson, M., Bridges, D., & **Reiter, L. T.** (2015). Characterization of neurons from immortalized dental pulp stem cells for the study of neurogenetic disorders. *Stem Cell Res, 15*(3), 722-730. doi:10.1016/j.scr.2015.11.004

Valentin- Vega, Y. A., Wang, Y. D., Parker, M., Patmore, D. M., Kanagaraj, A., Moore, J., Rusch, M., Finkelstein, D., Ellison, D. W., Gilbertson, R. J., Zhang, J., Kim, H. J., & **Taylor, J. P.** (2016). Cancer-associated DDX3X mutations drive stress granule assembly and impair global translation. *Sci Rep, 6*, 25996. doi:10.1038/srep25996

Valle-Garcia, D., Qadeer, Z. A., McHugh, D. S., Ghiraldini, F. G., Chowdhury, A. H., Hasson, D., **Dyer, M. A.**, Recillas-Targa, F., & Bernstein, E. (2016). ATRX binds to atypical chromatin domains at the 3' exons of zinc finger genes to preserve H3K9me3 enrichment. *Epigenetics, 11*(6), 398-414. doi:10.1080/15592294.2016.1169351

Walters, B. J., Diao, S., Zheng, F., Walters, B. J., Layman, W. S., & **Zuo, J.** (2015). Pseudo-immortalization of postnatal cochlear progenitor cells yields a scalable cell line capable of transcriptionally regulating mature hair cell genes. *Sci Rep, 5*, 17792. doi:10.1038/srep17792

Wang, B., Liu, Y., Huang, L., Chen, J., Li, J. J., Wang, R., Kim, E., Chen, Y., Justicia, C., **Sakata, K.**, **Chen, H.**, Planas, A., Ostrom, R. S., Li, W., Yang, G., **McDonald, M. P.**, Chen, R., **Heck, D. H.**, & **Liao, F. F.** (2016). A CNS-permeable Hsp90 inhibitor rescues synaptic dysfunction and memory loss in APP-overexpressing Alzheimer's mouse model via an HSF1-mediated mechanism. *Mol Psychiatry*. doi:10.1038/mp.2016.104

Wang, D., Fang, L., Shi, Y., Zhang, H., Gao, L., Peng, G., **Chen, H.**, Li, K., & Xiao, S. (2016). Porcine Epidemic Diarrhea Virus 3C-Like Protease Regulates Its Interferon Antagonism by Cleaving NEMO. *J Virol, 90*(4), 2090-2101. doi:10.1128/JVI.02514-15

Wang, L., Liu, H., Jiao, Y., Wang, E., Clark, S. H., Postlethwaite, A. E., Gu, W., & **Chen, H.** (2015). Differences between Mice and Humans in Regulation and the Molecular Network of Collagen, Type III, Alpha-1 at the Gene Expression Level: Obstacles that Translational Research Must Overcome. *Int J Mol Sci, 16*(7), 15031-15056. doi:10.3390/ijms160715031

Wang, L., Xiao, J., Gu, W., & **Chen, H.** (2016). Sex Difference of Egfr Expression and Molecular Pathway in the Liver: Impact on Drug Design and Cancer Treatments? *J Cancer, 7*(6), 671-680. doi:10.7150/jca.13684

Wang, Q., Leo, M. D., Narayanan, D., Kuruvilla, K. P., & **Jaggar, J. H.** (2016). Local coupling of TRPC6 to ANO1/TMEM16A channels in smooth muscle cells amplifies vasoconstriction in cerebral arteries. *Am J Physiol Cell Physiol, 310*(11), C1001-1009. doi:10.1152/ajpcell.00092.2016

Wang, Q., Lin, Z., Kim, T. K., Slominski, A. T., **Miller, D. D.**, & Li, W. (2015). Total synthesis of biologically active 20S-hydroxyvitamin D3. *Steroids, 104*, 153-162. doi:10.1016/j.steroids.2015.09.009

Wang, R., Chen, S., Liu, Y., Diao, S., Xue, Y., You, X., Park, E. A., & **Liao, F. F.** (2015). All-trans-retinoic acid

reduces BACE1 expression under inflammatory conditions via modulation of nuclear factor kappaB (NFkappaB) signaling. *J Biol Chem, 290*(37), 22532-22542. doi:10.1074/jbc.M115.662908

Wang, T., Han, W., & **Chen, H.** (2016). Socially acquired nicotine self-administration with an aversive flavor cue in adolescent female rats. *Psychopharmacology (Berl), 233*(10), 1837-1844. doi:10.1007/s00213-016-4249-2

Wang, X., Pandey, A. K., Mulligan, M. K., Williams, E. G., **Mozhui, K.**, Li, Z., Jovaisaite, V., Quarles, L. D., Xiao, Z., Huang, J., Capra, J. A., Chen, Z., Taylor, W. L., Bastarache, L., Niu, X., Pollard, K. S., Ciobanu, D. C., Reznik, A. O., Tishkov, A. V., Zhulin, I. B., Peng, J., Nelson, S. F., Denny, J. C., Auwerx, J., **Lu, L.**, & **Williams, R. W.** (2016). Joint mouse-human phenome-wide association to test gene function and disease risk. *Nat Commun, 7*, 10464. doi:10.1038/ncomms10464

Wei, D., Li, N. L., Zeng, Y., Liu, B., Kumthip, K., Wang, T. T., Huo, D., Ingels, J. F., **Lu, L.**, Shang, J., & Li, K. (2016). The Molecular Chaperone GRP78 Contributes to Toll-like Receptor 3-mediated Innate Immune Response to Hepatitis C Virus in Hepatocytes. *J Biol Chem, 291*(23), 12294-12309. doi:10.1074/jbc.M115.711598

Wei, W., Pham, K., Gammons, J. W., Sutherland, D., Liu, Y., Smith, A., **Kaczorowski, C. C.**, & **O'Connell, K. M.** (2015). Diet composition, not calorie intake, rapidly alters intrinsic excitability of hypothalamic AgRP/NPY neurons in mice. *Sci Rep, 5*, 16810. doi:10.1038/srep16810

Wheless, J. W. (2015). Use of the mTOR inhibitor everolimus in a patient with multiple manifestations of tuberous sclerosis complex including epilepsy. *Epilepsy Behav Case Rep, 4*, 63-66. doi:10.1016/j.ebcr.2015.06.008

Wilson, R., Urraca, N., Skobowiat, C., Hope, K. A., Miravalle, L., Chamberlin, R., Donaldson, M., Seagroves, T. N., & **Reiter, L. T.** (2015). Assessment of the Tumorigenic Potential of Spontaneously Immortalized and hTERT-Immortalized Cultured Dental Pulp Stem Cells. *Stem Cells Transl Med, 4*(8), 905-912. doi:10.5966/sctm.2014-0196

Xiao, J., Thompson, M. M., Vemula, S. R., & **LeDoux, M. S.** (2016). Blepharospasm in a multiplex African-American pedigree. *J Neurol Sci, 362*, 299-303. doi:10.1016/j.jns.2016.02.003

Xue, Y., Li, J., Yan, L., **Lu, L.**, & **Liao, F. F.** (2015). Genetic variability to diet-induced hippocampal dysfunction in BXD recombinant inbred (RI) mouse strains. *Behav Brain Res, 292*, 83-94. doi:10.1016/j.bbr.2015.06.023

Yamashita, T., Hakizimana, P., Wu, S., Hassan, A., Jacob, S., Temirov, J., Fang, J., Mellado-Lagarde, M., Gursky, R., Horner, L., Leibiger, B., Leijon, S., Centonze, V. E., Berggren, P. O., Frase, S., Auer, M., Brownell, W. E., Fridberger, A., & **Zuo, J.** (2015). Outer Hair Cell Lateral Wall Structure Constrains the Mobility of Plasma Membrane Proteins. *PLoS Genet, 11*(9), e1005500. doi:10.1371/journal.pgen.1005500

Yang, H., Brackett, C. M., **Morales-Tirado, V. M.**, Li, Z., Zhang, Q., Wilson, M. W., Benjamin, C., Harris, W., Waller, E. K., Gudkov, A. V., Burdelya, L. G., & Grossniklaus, H. E. (2016). The Toll-like receptor 5 agonist entolimod suppresses hepatic metastases in a murine model of ocular melanoma via an NK cell-dependent mechanism. *Oncotarget, 7*(3), 2936-2950. doi:10.18632/oncotarget.6500

Yu, G., & **Sharp, B. M.** (2015). Basolateral amygdala and ventral hippocampus in stress-induced amplification of nicotine self-administration during reacquisition in rat. *Psychopharmacology (Berl), 232*(15), 2741-2749. doi:10.1007/s00213-015-3911-4

Yu, K. E., Murphy, J. M., & **Tsao, J. W.** (2016). Blast From the Past: A Retrospective Analysis of Blast-induced Head Injury. *Neurologist, 21*(2), 17-18. doi:10.1097/NRL.0000000000000077

Zhan, H., Aizawa, K., Sun, J., Tomida, S., Otsu, K., Conway, S. J., **McKinnon, P. J.**, Manabe, I., Komuro, I., Miyagawa, K., Nagai, R., & Suzuki, T. (2016). Ataxia telangiectasia mutated in cardiac fibroblasts regulates doxorubicin-induced cardiotoxicity. *Cardiovasc Res, 110*(1), 85-95. doi:10.1093/cvr/cvw032

Zhan, X., & **Desiderio, D. M.** (2016). Editorial: Systems Biological Aspects of Pituitary Tumors. *Front Endocrinol (Lausanne), 7*, 86. doi:10.3389/fendo.2016.00086

Zhan, X., Wang, X., & **Desiderio, D. M.** (2015). Mass spectrometry analysis of nitrotyrosine-containing proteins. *Mass Spectrom Rev, 34*(4), 423-448. doi:10.1002/mas.21413

Zhao, L., & **Nowak, T. S., Jr.** (2015). Preconditioning cortical lesions reduce the incidence of peri-infarct depolarizations during focal ischemia in the Spontaneously Hypertensive Rat: interaction with prior

anesthesia and the impact of hyperglycemia. *J Cereb Blood Flow Metab, 35*(7), 1181-1190. doi:10.1038/jcbfm.2015.37

Zhao, T., Zhao, W., Meng, W., Liu, C., Chen, Y., **Bhattacharya, S. K.**, & Sun, Y. (2016). Vascular endothelial growth factor-D mediates fibrogenic response in myofibroblasts. *Mol Cell Biochem, 413*(1-2), 127-135. doi:10.1007/s11010-015-2646-1

Zhao, T., Zhao, W., Meng, W., Liu, C., Chen, Y., Gerling, I. C., Weber, K. T., **Bhattacharya, S. K.**, Kumar, R., & Sun, Y. (2015). VEGF-C/VEGFR-3 pathway promotes myocyte hypertrophy and survival in the infarcted myocardium. *Am J Transl Res, 7*(4), 697-709.

Zhao, W., Zhao, T., Chen, Y., Zhao, F., Gu, Q., **Williams, R. W.**, **Bhattacharya, S. K.**, **Lu, L.**, & Sun, Y. (2015). A Murine Hypertrophic Cardiomyopathy Model: The DBA/2J Strain. *PLoS One, 10*(8), e0133132. doi:10.1371/journal.pone.0133132

Zou, P., Conklin, H. M., Scoggins, M. A., Li, Y., Li, X., Jones, M. M., Palmer, S. L., Gajjar, A., & **Ogg, R. J.** (2016). Functional MRI in medulloblastoma survivors supports prophylactic reading intervention during tumor treatment. *Brain Imaging Behav, 10*(1), 258-271. doi:10.1007/s11682-015-9390-8

APPENDIX 3

Neuroscience Seminar Speakers

FY 2015-2016

THE NEUROSCIENCE INSTITUTE
UNIVERSITY OF TENNESSEE HEALTH SCIENCE CENTER

NEUROSCIENCE SEMINAR SERIES SCHEDULE

FALL 2015

Shalini Narayana, M.S., Ph.D. — September 15, 2015
Assistant Professor
Division of Clinical Neurosciences
Department of Pediatrics
UTHSC
Le Bonheur Children's Hospital

Title: "Neural Correlates of Motor Learning – Evidence from Neuroimaging Studies of Behavioral therapy and Brain Stimulation"

Christine MacDonald, Ph.D. — September 22, 2015
Host: Jack Tsao, Ph.D.
Assistant Professor
Department of Neurological Surgery
University of Washington

Title: "Brain Injury and Psychological Health Following Combat Deployment: The Invisible Wounds of War"

Gareth Howell, Ph.D. — September 29, 2015
Host: Monica Jablonski, Ph.D., FARVO
Assistant Professor
The Jackson Laboratory

Title: "The Complement Cascade – the Key Driver of Aging, Glaucoma, and Alzheimer's Disease!"

Stas Zakharenko, M.D., Ph.D. October 6, 2015
Associate Professor
Department of Anatomy and Neurobiology
UTHSC
Department of Development Neurobiology
St. Jude Children's Research Hospital

Title: TBA

Mark Tommerdahl, Ph.D. October 13, 2015
Host: Robert Waters, Ph.D.
Associate Professor
University of North Carolina

Title: "Assessing Brain Health via Sensory Percept"

Bob Ledeen Ph.D. October 27, 2015
Host: Michael McDonald, Ph.D.
Professor
Department of Pharmacology, Physiology & Neuroscience
Rutgers New Jersey Medical School

Title: "New Thinking on Parkinson's Disease in Relation to GM1 Ganglioside"

Steven Thomas, Ph.D. November 3, 2015
Host: Fu-Ming Zhou, Ph.D.
Associate Professor
Department of Pharmacology
University of Pennsylvania

Title: "Neuromodulatory Signaling in Cognition & Stress: Relevance for PTSD"

Leslie Kay, Ph.D. November 10, 2015
Host: Detlef Heck, Ph.D.
Associate Professor of Psychology
University of Chicago

Title: "Using Behavioral Context to Dissect the Olfactory Circuit"

C. Savio Chan, Ph.D. November 17, 2015
Host: Hitoshi Kita, Ph.D.
Assistant Professor
Department of Physiology
Northwestern University Interdepartmental Neuroscience

Title: TBA

C. Shawn Dotson, Ph.D. December 1, 2015
Host: John Boughter, Ph.D.
Assistant Professor
Departments of Neuroscience and Psychiatry, Division of Addiction Medicine
University of Florida College of Medicine and Center for Smell and Taste
McKnight Brain Institute

Title: "Modulation of Gustatory Functioning by Molecular Mediators of Appetite and Satiety"

David M. Miller, Ph.D. December 8, 2015
Host: Valeria Vasquez, Ph.D.
Professor of Cell and Developmental Biology & Biological Sciences
Vanderbilt University Medical Center

Title: "Decoding Genetic Programs for Building and Remodeling Neurons"

THE NEUROSCIENCE INSTITUTE
UNIVERSITY OF TENNESSEE HEALTH SCIENCE CENTER

NEUROSCIENCE SEMINAR SERIES SCHEDULE

SPRING 2016

Annie Chan, Ph.D. — January 26, 2016
Assistant Professor
Department of Neurology
UTHSC

Title: "A Functional MRI Survey: Investigating the Functions, Topographies, and Organizational Principles in the Human Brain"

Steven Youngentob, Ph.D. — February 2, 2016
Vice Chancellor for Research
Professor
Department of Anatomy and Neurobiology
Department of Psychiatry
UTHSC

Title: "Does mother nature always know best? The contribution of chemosensory fetal programming on adolescent alcohol and nicotine acceptance as a consequence of prenatal alcohol exposure"

Michael Geschwind, M.D., Ph.D. — February 9, 2016
Host: Jack Tsao
Associate Professor
Department of Neurology
University of California, San Francisco

Title: "The Spectrum of Human Prion Diseases"

Abbas Babajani-Feremi, Ph.D. February 16, 2016
Assistant Professor
Department of Pediatrics
UTHSC

Title: "Application of Neuroimaging Techniques in Epilepsy: a Multi-modal Approach using fMRI, MEG, TMS, and ECoG"

Walter Freeman, Ph.D. (CANCELLED) February 23, 2016
Host: Detlef Heck
Professor
The Freeman Laboratory for Nonlinear Neurodynamics
Department of Molecular & Cell Biology
Division of Neurobiology
University of California at Berkeley

Title: "Quantitative models for field dynamics of cerebral cortex based in ECoG/EEG"

Karolina Abreg, Ph.D. March 1, 2016
Host: Khyobeni Mozhui
Assistant Professor & Associate Director
Center for Biomarker Research and Precision Medicine
Virginia Commonwealth University

Title: "Large scale methylome-wide investigations"

Steve Maren, Ph.D. March 8, 2016
Host: Catherine Kaczorowki
Professor
Department of Psychology
Texas A&M University

Title: "Stabilizing fear extinction under stress"

Hugo Bellen, DVM, Ph.D. — March 15, 2016
Host: Larry Reiter
Investigator, Howard Hughes Medical Institute
Director, Program in Developmental Biology
Baylor College of Medicine

Title: "Mitochondria and Neurodegeneration"

Chris Lemon, Ph.D. — March 29, 2016
Host: John Boughter
Assistant Professor
Department of Biology
University of Oklahoma

Title: "The neural code for taste – filling in the gaps"

Kazuko Sakata, Ph.D. — April 5, 2016
Associate Professor
Department of Pharmacology
UTHSC

Title: TBA

Lazlo Zaborsky, Ph.D. — April 12, 2016
Host: William Armstrong
Distinguished Professor
Center for Molecular and Behavioral Neuroscience
Rutgers University - Newark

Title: "Basal Forebrain Cholinergic System: Anatomy to Function"

Lisa Savage, Ph.D. — April 19, 2016
Host: Michael McDonald
Professor
Department of Psychology and Behavioral Neuroscience
SUNY Binghamton University

Title: "Neuroadaptions in the septohippocampal pathway following exercise"

Rodrigo Andrade, Ph.D. April 26, 2016
Host: Robert Foehring
Professor
Department of Pharmacology
Wayne State University, School of Medicine

Title: "Using optogenetics to understand serotonergic synaptic transmission in the brain"

Bernardo Rudy, Ph.D. May 3, 2016
Host: Fuming Zhou
Professor
Department of Neuroscience & Physiology
Smillow Neuroscience
New York University

Title: TBA

Mark Bevan, Ph.D. May 10, 2016
Host: William Armstrong
Professor
Department of Physiology
Feinberg School of Medicine
Northwestern University

Title: "Abnormal activity of the sub thalamic nucleus in movement disorders: Underlying mechanisms and therapeutic interventions"

APPENDIX 4

Neuroscience News, Events and Graduate Training Flyer

FY 2015-2016

Brain Awareness Night

Early Childhood Resilience

Resilience in early childhood is important for success in school and throughout life. Join us to learn how parents and caregivers can improve young children's resilience.

03/15/2016
6:00PM-8:00PM
FREE Registration
The Urban Child Institute
600 Jefferson Ave

Dr. Pat Levitt: Why Early Matters for Healthy Brain and Child Development

Ph.D., Simms/Mann Chair in Developmental Neurogenetics, Institute for the Developing Mind, Children's Hospital Los Angeles

We will discuss the research showing that early life experiences influence social, emotional and learning skills, and how these skills come together to help children succeed in the real world and how healthy brain architecture provides the resilience to deal with adversity experienced during the first years of life.

Dr. Eraina Schauss: Combating Adverse Childhood Experiences through Resilience Based Interventions

Ph.D., Assistant Professor of Clinical Mental Health Counseling at the University of Memphis

This presentation will instruct parents, clinicians and the greater community on the ways in which they can help build resilience in children through attachment and play-based exercises, and address how these exercises and interventions help build adaptive and integrated brain architecture in young children.

Professional training hours (CEUs) will be provided by the UT Neuroscience Institute.

DETAILS AND REGISTRATION AT:
http://urbanchildinstitute.org/brain-awareness

THE UNIVERSITY of TENNESSEE HEALTH SCIENCE CENTER
The Neuroscience Institute

THE URBAN CHILD INSTITUTE®

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Brain Awareness Night Highlights Importance of Childhood Resilience

MARCH 30, 2016

On March 15, more than 100 people from around the Memphis community gathered for Brain Awareness Night, hosted annually by the Urban Child Institute and the University of Tennessee Health Science Center's Neuroscience Institute. This year's event, featuring speakers Dr. Pat Levitt and Dr. Eraina Schauss, focused on the topic of childhood resilience.

Resilience is defined by the American Psychological Association as the ability to adapt

Innovation & Job News

Brain Awareness Night highlights importance of childhood resilience

ANNA MULLINS | FRIDAY, APRIL 08, 2016

In March, more than 100 people from around the Memphis community gathered for Brain Awareness Night, hosted annually by the Urban Child Institute and the University of Tennessee Health Science Center's Neuroscience Institute. This year's event, featuring speakers Dr. Pat Levitt and Dr. Eraina Schauss, focused on the topic of childhood resilience.

Resilience is defined as "the ability to adapt well to adversity, trauma, tragedy, threats or even significant sources of stress." Resilient children manage to thrive despite being exposed to risk factors like poverty or problematic home environments. The speakers reiterated that resilience is not a trait that an individual either has or does not have, but is rather a skill that can be developed.

As the brain develops, neurons form strong circuits for various functions, such as motor skills, emotions, and language; the more a skill is used, the stronger and

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MENU

Assistant Professor Rajashekhar Gangaraju of UTHSC Receives $1 Million Grant to Continue Diabetic Retinopathy Research

Written by **Communications and Marketing, (mailto:communications@uthsc.edu)**August 5th, 2015

Rajashekhar Gangaraju, PhD, an assistant professor in the Hamilton Eye Institute at the University of Tennessee Health Science Center (UTHSC), has long been interested in the causes and effects of diabetic retinopathy – his father and grandfather suffered from diabetes and resulting vision loss.

A more than $1 million grant from the National Eye Institute will allow Dr. Rajashekhar Gangaraju and his research team to continue investigating eye disease in relation to diabetes.

As a result, Dr. Gangaraju, who came to UTHSC in 2014 from Glick Eye Institute at Indiana University School of Medicine, has focused his research on retinal vascular biology. A grant totaling $1,076,823 from the National Eye Institute, a subsidiary of the National Institutes of Health, originally given to him through his previous institution, is transferring to UTHSC to continue his research here. It will be used to support a project titled, “Vascular and Neuronal Repair with Adipose Stromal Cells in Retinopathy.” The funds will be distributed over three years.

“Everyone who develops diabetes may suffer from vision loss,” said Dr. Gangaraju. “The vision loss occurs because high blood sugar damages blood vessels causing leakage and bleeding. The blood vessels are no longer able to carry important nutrients to the retina in the eye. To compensate, more blood vessels are made, but they are fragile and also leak causing a cyclical environment and worsening damage.”

(http://uthsc.edu)

UTHSC News (https://news.uthsc.edu/)

MENU

Drs. Mike McDonald, Francesca-Fang Liao Receive $1 Million to Study Possible Alzheimer's Therapy

Written by **Communications and Marketing, (mailto:communications@uthsc.edu)**June 16th, 2016

(http://uthsc.edu)

UTHSC News (https://news.uthsc.edu/)

MENU

Drs. Mike McDonald, Francesca-Fang Liao Receive $1 Million to Study Possible Alzheimer's Therapy

Written by **Communications and Marketing, (mailto:communications@uthsc.edu)**June 16th, 2016

Francesca-Fang Liao, PhD, and Mike McDonald, PhD, of UTHSC received $1 million for a study that may have implications for Alzheimer's disease in humans.

Researchers at the University of Tennessee Health Science Center (UTHSC) have received a $1 million grant to study a genetic therapy that one day may offer a way to slow or reverse the effects of Alzheimer's disease.

Mike McDonald, PhD, an associate professor in the Departments of Neurology and Anatomy and Neurobiology, and Francesca-Fang Liao, PhD, a professor in the Department of Pharmacology, received the grant from the National Institute of Neurological Disorders and Stroke, a division of the National Institutes of Health, to test the therapy in mice. The funds will be distributed over three years.

Dr. McDonald said the therapy involves a single injection of a viral vector in the leg muscle. The vector, or carrier, contains DNA to generate a mutant erythropoietin. Erythropoietin, he said, or Epo, is a naturally occurring protein that is known to be neuro-protective, meaning it can protect neurons from damage in conditions such as Alzheimer's and Parkinson's diseases, macular degeneration and more. However, chronic use of Epo has the effect of raising hematocrit, the concentration of red blood cells, to unhealthy levels.

"But what we're studying is a mutant Epo, with just one amino acid different," Dr. McDonald said. "It does not raise the hematocrit, but continues to protect the neurons." This modified Epo vector – rAAV.EpoR76E – was created by Tonia Rex, PhD, a former UTHSC faculty member.

"The nice thing is that it's just a single intramuscular injection," he continued. "We inject the virus, and the virus makes the protein – the mutant protein – forever. It gets into the bloodstream, then it gets into the brain, and there it does its work."

In addition to protecting neurons, rAAV.EpoR76E clears the amyloid plaques, or sticky buildup outside nerve cells or neurons, associated with Alzheimer's disease. Preliminary data show that amyloid plaques are nearly completely cleared two months after a single injection in mice that had extensive plaques in the cortex and hippocampus. Successfully reducing amyloid plaques and the resulting cell death, memory impairment and behavioral changes in mice may provide insight into new treatment strategies for humans with Alzheimer's disease.

(http://uthsc.edu)

UTHSC News (https://news.uthsc.edu/)

MENU

Professor Anton Reiner of UTHSC Receives $617,388 Grant for Huntington's Disease Research

Written by **Communications and Marketing, (mailto:communications@uthsc.edu)**November 12th, 2015

Huntington's disease is a hereditary, degenerative brain disease, often called Woody Guthrie's disease, for its most well-known victim. The disease usually becomes apparent around 40 years of age, and ultimately results in destruction of the primary thinking and planning part of the brain, called the cerebral cortex, and also of a major motor control region of the brain, called the basal ganglia. A new $617,388 grant from the Cure for Huntington's Disease Initiative Foundation will allow Anton Reiner, PhD, of the University of Tennessee Health Science Center (UTHSC), to study the disease.

A $617,388 grant from the Cure for Huntington's Disease Initiative Foundation will allow Dr. Anton Reiner (second from the left) and his research team (from left: Yunping Deng, MD; Marion Joni, BS; and Hongbing Wang, MD, PhD) to gain more insight into and explore treatment options for Huntington's disease.

A professor in the Department of Anatomy and Neurobiology in the College of Medicine at UTHSC, Dr. Reiner will use the grant titled, "Progression of Basal Ganglia Pathology in Q175 Huntington's Disease Mice and Human Huntington's Disease," to gain more insight into and explore treatment options for the disease. The funds will be distributed over three years.

Huntington's disease (HD) causes profound emotional, cognitive, behavioral and motor disability, typically leading to death about 20 years after disease onset. In America, there are about 30,000 HD patients and about 150,000 people at risk of developing the disease. Although the gene

defect is known in HD, how this defect causes progressive brain degeneration is not known, and no effective treatments are currently available.

It is hoped that the research will yield a deeper understanding of the brain regions and brain neuron types that degenerate in Huntington's disease in humans. These studies will help explain the basis of particular symptoms and help guide treatment choices at different stages of the disease.

The award also supports studies to determine how well the brain pathology in the Q175 mouse model of Huntington's disease matches that in the human disease itself. Q175 mice have been genetically engineered to have the same mutant gene that causes Huntington's disease in humans, and they are being considered by the Cure for Huntington's Disease Initiative Foundation as the animal model of choice for initial screening of possible therapies. If successful, the funded studies will help determine if this model could serve as an effective surrogate for humans in early testing of therapeutic options.

"We are pleased by the recognition of our prior work on HD that this award reflects, and we are pleased by the opportunity to continue to make contributions to the understanding of this disease and the development of treatments for it," said Dr. Reiner.

The CHDI Foundation is a privately funded, not-for-profit biomedical research organization devoted to a single disease – Huntington's disease. Its mission is to develop drugs that will slow the progression of Huntington's disease and provide meaningful clinical benefit to patients as quickly as possible. For more information, visit www.chdifoundation.org (http://www.chdifoundation.org).

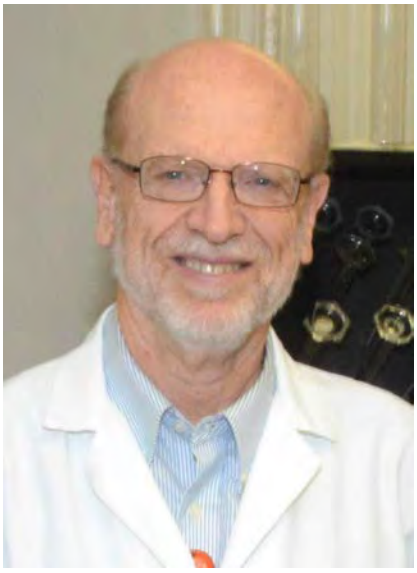
(http://uthsc.edu)

UTHSC News (https://news.uthsc.edu/)

MENU

Anton Reiner, PhD, of UTHSC, Receives $1.35 Million Grant to Study New Treatments to Diminish Visual Deficits After Mild Traumatic Brain Injuries

Written by **Communications and Marketing, (mailto:communications@uthsc.edu)**April 25th, 2016



Dr. Anton Reiner

Anton Reiner, PhD, professor in the Departments of Anatomy & Neurobiology, and Ophthalmology in the College of Medicine at the University of Tennessee Health Science Center (UTHSC), has received $1.35 million from the U.S. Department of Defense to study the benefits of the drug Raloxifene as a therapy to help reduce visual impairment stemming from retinal and optic nerve damage after mild traumatic brain injury or closed-globe ocular injury.

The award, which comes from the office of the Congressionally Directed Medical Research Programs, will be distributed over three years. The funds were awarded to Dr. Reiner, who is also Methodist Hospitals professor of Neuroscience and co-director of the UTHSC Neuroscience Institute, along with his UTHSC collaborators, Marcia Honig, PhD, of the Department of Anatomy & Neurobiology, and Bob Moore, PhD, of the Department of Pharmaceutical Sciences.

Visual deficits from traumatic brain injury and from non-rupturing ocular trauma by itself or in conjunction with brain injury are highly common in the military, often leading to an inability to return to service and/or lifelong impairments.

The study takes advantage of the recent discovery that Raloxifene, an FDA approved drug that is currently used to treat osteoporosis in women because of its action at estrogen receptors, also acts as an inverse agonist at CB2 receptors.

Dr. Reiner and his team will use two mouse models with visual deficits and retinal pathology mimicking what military members may experience as an outcome of combat, training or other service-related injury to test the benefits of Raloxifene.

Their previous research has found that treatment using a novel experimental cannabinoid type-2 (CB2) receptor inverse agonist developed by Dr. Moore significantly diminishes those deficits.

Unlike drugs that act on cannabinoid type-1 (CB1) receptors, such as marijuana, drugs that selectively target CB2 receptors do not have psychotropic effects. Instead, they modulate brain neuroinflammation by binding to a type of brain cell called microglia, converting them to a helpful rather than a harmful state.

“If our proposed animal studies show benefit of Raloxifene in preventing visual deficits and injury after brain and/or ocular trauma, it could be next tested in phase two human clinical trials, having already passed phase one safety testing,” Dr. Reiner said. “If proven effective in human clinical trials, it could soon have approval for use in military trauma victims.”

Therapies that limit the post-trauma visual impairments in patients with traumatic brain injury have not been identified, and current treatment options consist mainly of rehabilitation and/or corrective eyewear to mitigate the disability. By using Raloxifene in a treatment plan immediately after injury, Dr. Reiner hopes to reduce the amount of permanent damage caused by the injury, and thereby improve visual function and prevent disability. The study will determine if the drug shows enough promise in mice to be tested in humans.

“If approved for use in military trauma victims, Raloxifene could be adopted as a routine treatment administered by medical personnel shortly after trauma, and thereby prevent or reduce the harmful consequences of the trauma for vision,” Dr. Reiner said. “The drug would also be available for civilian use to limit the visual problems that stem from brain or eye trauma.”

The Congressionally Directed Medical Research Programs (CDMRP), is dedicated to advancing paradigm shifting research, solutions that will lead to cures or improvements in patient care, or breakthrough technologies and resources for clinical benefit. The CDMRP strives

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MENU

Associate Professor Detlef Heck Receives $418,000 Grant for Research on Mild Traumatic Brain Injury

Written by **Communications and Marketing, (mailto:communications@uthsc.edu)**October 30th, 2015

A $418,000 grant from the National Institute of Neurological Disorders and Stroke will allow Dr. Detlef Heck (center), pictured with Dr. Anton Reiner (left) and Dr. Bob Moore, to explore treatment options for mild traumatic brain injury.

Mild traumatic brain injury is a common occurrence that can happen in many types of activities – from leisure sports to military combat. It can cause emotional and cognitive deficits, such as depression and fearfulness, which can last for a short period of time, but often last months and sometimes years. There currently is no cure, in part because what exactly happens to the brain after a traumatic event is poorly understood. However, this may soon change, thanks to a new study being conducted by Detlef Heck, PhD, and his research team.

An associate professor in the Department of Anatomy and Neurobiology in the College of Medicine at the University of Tennessee Health Science Center (UTHSC), Dr. Heck has received a grant totaling $418,000 from the National Institute of Neurological Disorders and Stroke, a subsidiary of the National Institutes of Health, to study in greater detail which areas of the brain are affected and whether their inability to synchronize and communicate can explain the psychological consequences of traumatic brain injury.

The award, which will be distributed over two years, will be used to support a project titled, “Effects of Traumatic Brain Injury on Temporal Dynamics of Brain Activity and Learning.”

The research will use a new approach to studying mild traumatic brain injury that Dr. Heck developed working with Anton Reiner, PhD, professor in the Department of Anatomy and Neurobiology; Yu Liu, PhD, assistant professor in the Department of Anatomy and Neurobiology; Scott Heldt, PhD, assistant professor in the Department of Anatomy and Neurobiology; and Bob Moore, PhD, professor in the Department of Pharmaceutical Sciences at UTHSC. It involves measuring how well different areas of the brain communicate with each other.

The brain constantly generates rhythmic electrical activity that can be measured. The rhythms of two areas in the brain become synchronized when they work together on the same problem, such as learning or analyzing a fearful stimulus. Previous research conducted by Dr. Liu shows that after traumatic injury, certain areas may no longer be properly synchronized. In particular, it was noted that the loss of synchrony in a mouse model after mild traumatic brain injury was prominent in areas of the brain that regulate mood and affect, especially in mice showing depression and fearfulness. The same approach has also been successful in an Alzheimer's project the researchers are conducting.

Dr. Moore has developed a drug that acts on specific receptors (cannabinoid type 2) in the brain without having an effect on mood or cognition. He and Dr. Reiner have already shown that one of Dr. Moore's drugs can prevent some aspects of brain damage and behavioral effects from traumatic brain injury in mice. In the newly funded studies, the research team will be able to determine if this drug can also bring brain synchronization back to normal after mild traumatic brain injury.

"This project is a great example of how interdisciplinary and interdepartmental collaborations can bring exciting new perspectives to biomedical science," said Dr. Heck. "Working on this project is particularly rewarding, as it may contribute to the development of improved diagnostic tools and a potential treatment for mild traumatic brain disorder."

The National Institute of Neurological Disorders and Stroke is dedicated to research and disseminating knowledge centered on the brain and nervous system in efforts to reduce neurological disease. For more information, visit www.ninds.nih.gov (http://www.ninds.nih.gov/).

The National Institutes of Health (NIH), the nation's medical research agency, includes 27 Institutes and Centers and is a component of the U.S. Department of Health and Human Services. NIH is the primary federal agency conducting and supporting basic, clinical, and

translational medical research, and is investigating the causes, treatments, and cures for both common and rare diseases. For more information about NIH and its programs, visit www.nih.gov. (http://www.nih.gov/)

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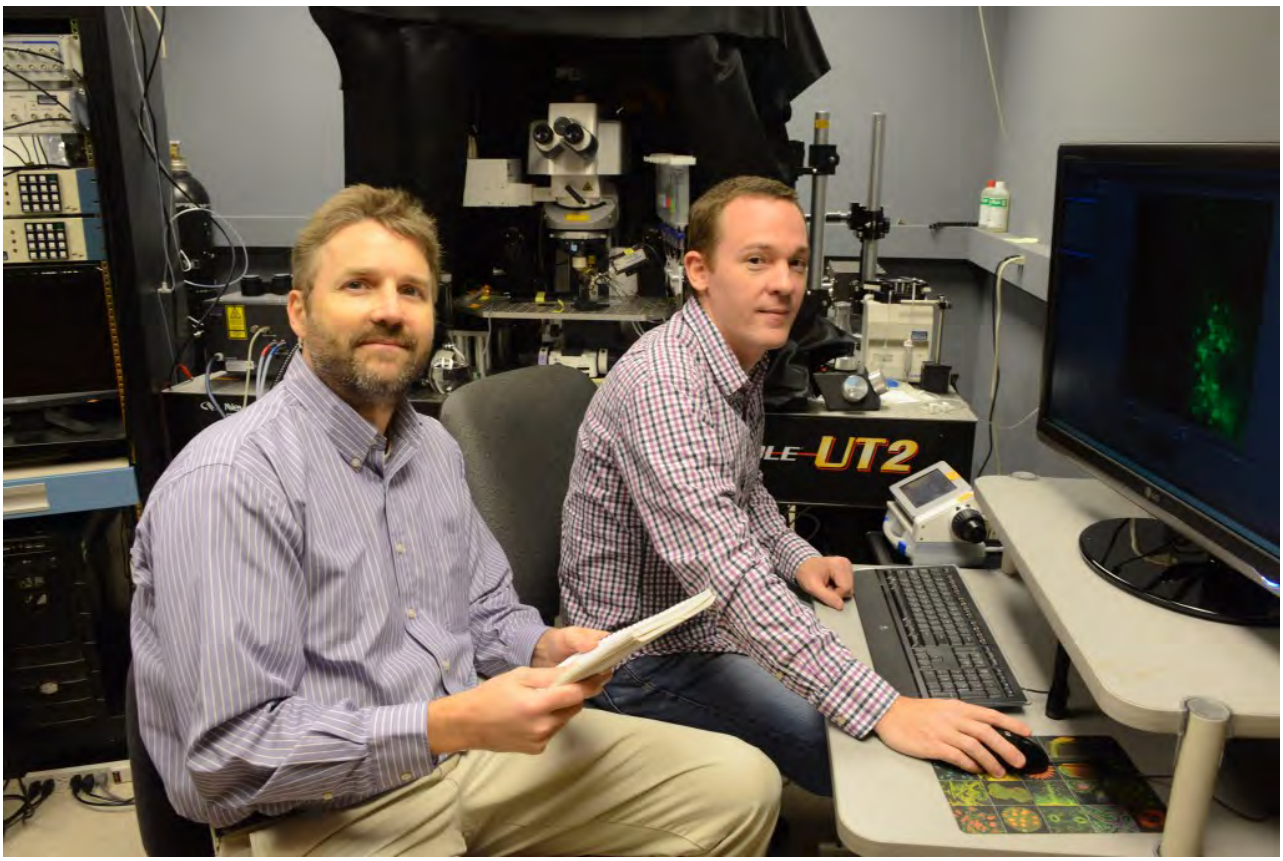
MENU

Associate Professor John Boughter and Assistant Professor Max Fletcher of UTHSC Receive $418,000 Grant for Taste Sensory Research

Written by **Communications and Marketing, (mailto:communications@uthsc.edu)**January 11th, 2016



Drs. John Boughter (left) and Max Fletcher have received a $418,000 grant from the National Institute on Deafness and Other Communication Disorders.

How are we able to distinguish the difference between what is sweet, bitter, salty or sour? John Boughter, PhD, an associate professor in the Department of Anatomy and Neurobiology in the College of Medicine at the University of Tennessee Health Science Center (UTHSC), has received a grant totaling $418,000 from the National Institute on Deafness and Other Communication Disorders, part of the National Institutes of Health, to study this question. The other principal investigator on this grant is Max Fletcher, PhD, assistant professor in the Department of Anatomy and Neurobiology at UTHSC.

The award, which will be distributed over two years, will support a project titled, "Taste Responses in Defined Cell Types in Gustatory Cortex."

Taste quality plays a crucial role when evaluating conditions such as obesity, diabetes, anorexia, hypertension and coronary artery disease. In this research, the focus will be on how taste quality is encoded in the gustatory cortex, an important area of the brain involved in ingestive decision making. The researchers use state-of-the-art imaging techniques to visualize the response of individual neurons to taste stimuli of different qualities.

"We will try to understand whether or not single cells respond to just one or multiple tastants," said Dr. Boughter. "The location of these neurons in different cortical cell layers will be considered, and we will investigate taste responses in different cell types as well. Together, we anticipate that these approaches will allow for a new understanding of how the sense of taste is organized in the brain."

The National Institute on Deafness and Other Communication Disorders is dedicated to conducting research surrounding the processes of sight, sound, taste, balance and speech. For more information, visit www.nidcd.nih.gov (http://www.nidcd.nih.gov/).

The National Institutes of Health (NIH), the nation's medical research agency, includes 27 Institutes and Centers and is a component of the U.S. Department of Health and Human Services. NIH is the primary federal agency conducting and supporting basic, clinical, and translational medical research, and is investigating the causes, treatments, and cures for both common and rare diseases. For more information about NIH and its programs, visit www.nih.gov. (http://www.nih.gov/)

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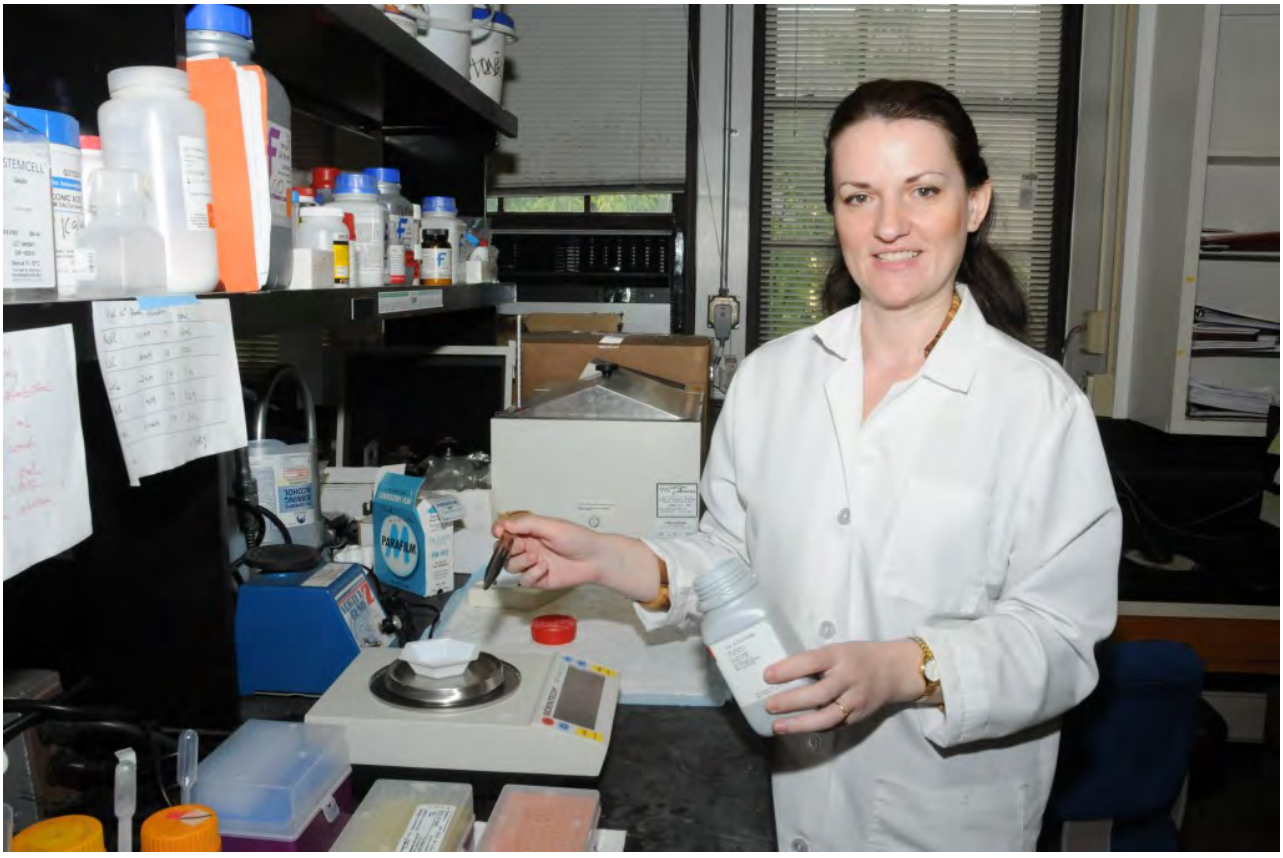
MENU

Associate Professor Anna Bukiya of UTHSC Receives $1.6 Million to Study How Cholesterol and Alcohol Interact in the Body

Written by **Communications and Marketing, (mailto:communications@uthsc.edu)**June 1st, 2015



A $1.6 million grant from the National Institute on Alcohol Abuse and Alcoholism will allow Dr. Anna Bukiya and her research team to explore how cholesterol and alcohol interact in the body.

Anna Bukiya, PhD, an associate professor in the Department of Pharmacology in the College of Medicine at the University of Tennessee Health Science Center (UTHSC), has received a five-year grant totaling $1.6 million to study how cholesterol and alcohol interact to modulate blood vessel function in the brain.

The award from the National Institute on Alcohol Abuse and Alcoholism, a subsidiary of the National Institutes of Health, will be used to support a project titled, “Cholesterol Control of Alcohol-Induced Cerebral Artery Constriction.”

Alcohol consumption represents a risk factor for alterations in the blood flow in the brain. Cholesterol is a waxy, fat-like substance found in food from animal sources. It is not known how cholesterol and alcohol interact to modulate blood vessel function in the brain. Dr. Bukiya will focus on that interaction.

Her earlier work showed that although cholesterol and alcohol each have deleterious effects on the body, they may “cancel out” each other’s harmful effects on the cerebral arteries when consumed together. The new funding will allow Dr. Bukiya and her research team to fully explore cholesterol-alcohol interactions in the body. Moreover, they will test how statins — widely used pharmacological drugs that decrease the cholesterol level in the blood — affect cholesterol-alcohol interaction in blood vessels in the brain.

“This is unprecedented work that may be relevant to any human being who has consumed alcohol at least once,” Dr. Bukiya explained. “Our work will be of tremendous importance for patients who have increased their cholesterol levels and hope to reduce vascular risks by taking statins. These patients would probably need to adjust their alcohol drinking patterns according to cholesterol status.”

The largest funder of alcohol research in the world, The National Institute on Alcohol Abuse and Alcoholism is dedicated to researching the impact of alcohol and how it affects human health and well-being. The organization aims to fully understand the pros and cons of alcohol use, and develop effective prevention and treatment strategies to decrease the risks associated with alcohol use. For more information, visit www.niaaa.nih.gov (http://www.niaaa.nih.gov).

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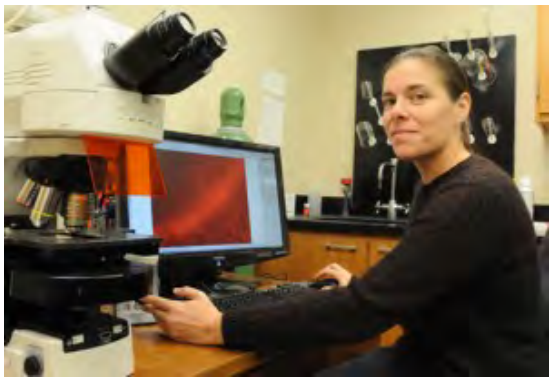
MENU

Assistant Professor Catherine Kaczorowski Receives $418,000 Grant for Mapping Alzheimer's Disease Memory Failure

Written by **Communications and Marketing, (mailto:communications@uthsc.edu)**September 8th, 2015

Early and profound memory loss is a primary symptom of Alzheimer's disease (AD). By the year 2050, more than 11 million elderly Americans will suffer from the disease. Catherine Kaczorowski, PhD, an assistant professor in the Department ofAnatomy and Neurobiology at the University of Tennessee Health Science Center (UTHSC), has received a $418,000 grant to further her research of Alzheimer's disease and memory failure. The grant was awarded by the National Institute on Aging, one of the National Institutes of Health, and will be funded over the next two years.



Catherine Kaczorowski, PhD, assistant professor in the College of Medicine at the University of Tennessee Health Science Center, received a $418,000 grant for mapping Alzheimer's disease memory failure.

The grant, titled, "Mapping AD Memory Failure: Molecules to Connectivity of Brain Network," will allow Dr. Kaczorowski and her team to employ a novel approach to identify new molecules that underlie unusual changes in the functional connectivity of neurons across multiple brain regions (i.e., network coherence) and monitor how these changes contribute to memory deficits in Alzheimer's disease. Overall, this project also aims to discover biomarkers that could be used to detect potential onset of Alzheimer's disease in advance, so treatment could begin earlier with better success rates.

"Our recent data suggests that disruption of neural network coherence between the hippocampus and the prefrontal cortex underlies memory deficits in Alzheimer's disease," said Dr. Kaczorowski. "To test this hypothesis, we will monitor network coherence between these areas in 'normal' and Alzheimer's disease mice throughout their life span while they are performing memory tasks. The idea is to identify changes in functional connectivity that correspond to the onset of memory deficits. We will then use specific drug targeting and sophisticated gene therapy tools to treat abnormal neuronal activity and memory failure in Alzheimer's disease mouse models. Outcomes of the proposed research have great potential to make a major impact on the identification of new treatments for both age-associated cognitive decline and Alzheimer's disease."

If successful, this research could lead to the development of novel therapies that maintain cognitive function in the elderly and reduce the suffering experienced by dementia patients and their families.

The National Institute on Aging remains committed to understanding the aging process and prolonging life. It is the primary agency that supports and conducts Alzheimer's research. For more information, visit www.nia.nih.gov (http://www.nia.nih.gov/).

The National Institutes of Health (NIH), the nation's medical research agency, includes 27 Institutes and Centers and is a component of the U.S. Department of Health and Human Services. NIH is the primary federal agency conducting and supporting basic, clinical, and translational medical research, and is investigating the causes, treatments, and cures for both common and rare diseases. For more information about NIH and its programs, visit www.nih.gov. (http://www.nih.gov/)

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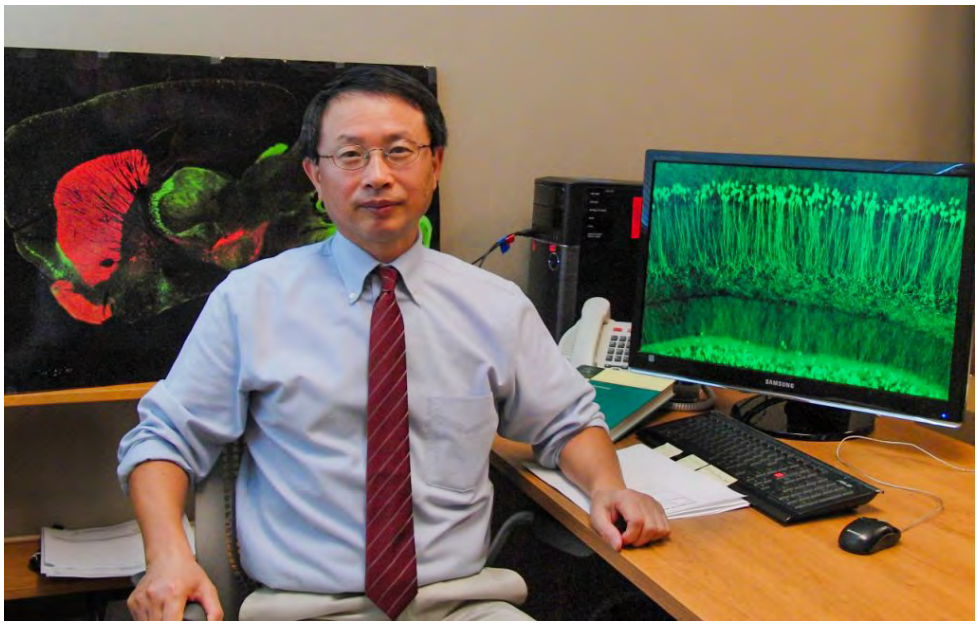
Fu-Ming Zhou Awarded $1.66 Million to Study Role of Dopamine in Parkinson's Disease

Written by **Communications and Marketing, (mailto:communications@uthsc.edu)**July 20th, 2016



Dr. Fu-Ming Zhou has received a grant totaling $1.66 million to study the role of dopamine as it relates to Parkinson's disease.

Dopamine is a brain chemical that profoundly affects our brain functions, including motor control, cognition and reward regulation, as seen in Parkinson's disease, schizophrenia and drug addiction. Fu-Ming Zhou, PhD, of the University of Tennessee Health Science Center (UTHSC) has received a grant totaling $1.66 million from the National Institute of Neurological Disorders and Stroke, part of the National Institutes of Health, to study the role of dopamine as it relates to Parkinson's disease.

"This newly funded project will provide a better understanding of the brain dopamine system, thus eventually helping our battle against these devastating brain disorders," said Dr. Zhou, an associate professor in the Department of Pharmacology in the College of Medicine at UTHSC

The award will be used to support a project titled, "Ion Channel Mechanisms of Striatal Dopaminergic Motor Stimulation," and will be distributed over five years.

Animals and humans lose their motor function almost instantaneously when dopamine is lost. Motor function is restored when brain dopamine is replenished, demonstrating that dopamine is absolutely required for our normal motor function — hence people develop motor function deficits or Parkinson's disease when they lose their dopamine in the brain. A fundamental question is: What does dopamine do in the brain to produce such a profound motor-stimulating function? This is the question that Dr. Zhou and his research team hope to answer.

Using anatomical, physiological and behavioral techniques, researchers will determine how dopamine affects neuronal activity and spike-firing in the brain. The new knowledge gained will advance the understanding of dopamine's precise neuronal effects and mechanisms in both the normal brain and Parkinson's disease brain, thus, providing a foundation to improve treatments of Parkinson's disease.

The National Institute of Neurological Disorders and Stroke is dedicated to research and disseminating knowledge centered on the brain and nervous system in efforts to reduce neurological disease. For more information, visit www.ninds.nih.gov (http://www.ninds.nih.gov/).

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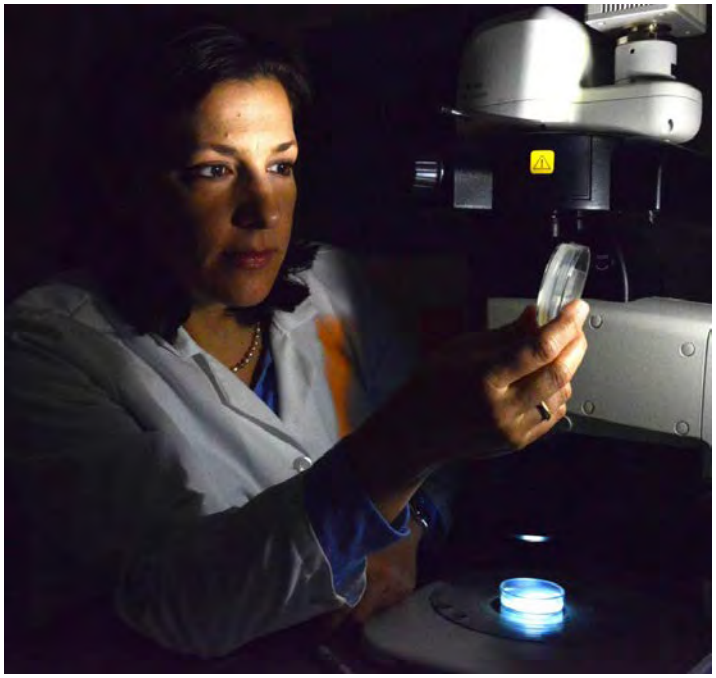
Assistant Professor Valeria Vásquez Receives $120,000 Grant for Chronic Pain Research

Written by **Communications and Marketing, (mailto:communications@uthsc.edu)**July 26th, 2016



Valeria Vásquez, PhD, is researching the causes of chronic pain.

Valeria Vásquez, PhD, assistant professor in the Department of Physiology in the College of Medicine at the University of Tennessee Health Science Center (UTHSC), has received a grant totaling $120,000 from the United States-Israel Binational Science Foundation to study the causes of chronic pain. She will be working in collaboration with Avi Priel, PhD, a member of the faculty of medicine in the School of Pharmacy – Institute for Drug Research at the Hebrew University of Jerusalem.

Chronic or persistent pain is a major burden on individuals, health care systems and social services, and carries high indirect costs. It is a debilitating condition that decreases the quality of life of affected individuals, and is the most common reason for seeking medical help. There is a high demand for new or complementary treatments to alleviate pain originating from different sources, such as rheumatoid arthritis, aging, tissue injury or cancer.

The detection of pain occurs when proteins are triggered by neurons. Dr. Vásquez and her research team are most interested in the role of the transient receptor potential vanilloid 1 channel (TRPV1), as it relates to chronic pain. Also known as the chili pepper or heat receptor, TRPV1 causes a painful, burning sensation in humans upon activation, a symptom commonly associated with chronic pain.

Despite TRPV1's role in physiological and pathophysiological pain, the cellular and molecular mechanisms of continued pain responses are not well understood.

"We are testing substances using roundworms to discover treatment options for chronic pain," Dr. Vasquez said.

The United States-Israel Binational Science Foundation encourages scientific relationships and collaborations between the United States and Israel through the funding of research in various areas. For more information, visit www.bsf.org.il (http://www.bsf.org.il/).

Tags: chronic pain (https://news.uthsc.edu/tag/chronic-pain/), College of Medicine (https://news.uthsc.edu/tag/college-of-medicine/), Research (https://news.uthsc.edu/tag/research/)

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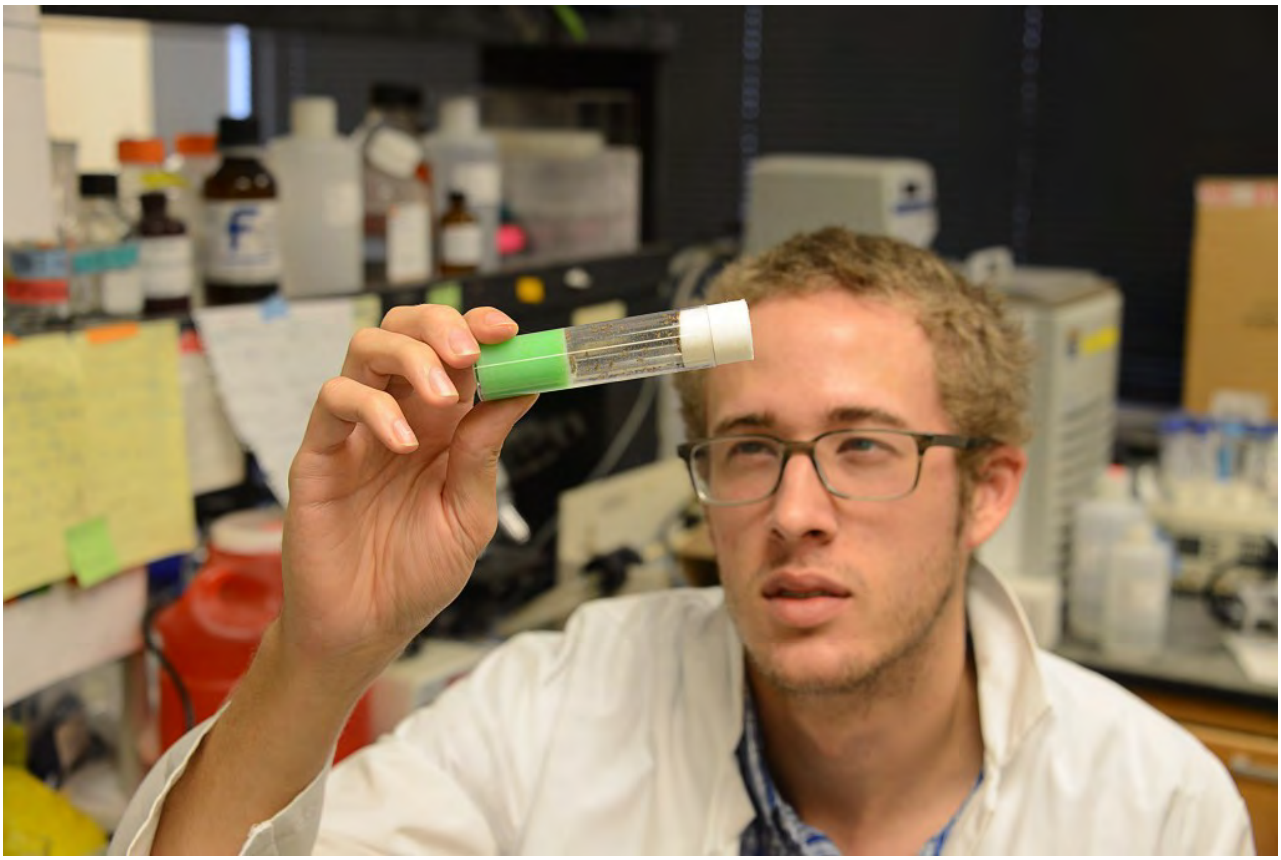
Graduate Assistant Kevin Hope of UTHSC Receives $100,000 Grant for Epilepsy, Autism Research

Written by **Communications and Marketing, (mailto:communications@uthsc.edu)**December 31st, 2015



Graduate Assistant Kevin Hope will use a $100,000 grant to research Dup15q syndrome.

Kevin Hope, a graduate assistant in the Department of Anatomy and Neurobiology in the College of Medicine at the University of Tennessee Health Science Center (UTHSC), has received a grant totaling $100,000 from the Dup15q Alliance. The award will be used to study 15q Duplication, a syndrome that is caused by duplications in a chromosomal region that typically results in cognitive impairments, autism spectrum disorder and sometimes seizures.

Hope is currently in his third year of the Integrated Program in Biomedical Sciences (IPBS) on the neuroscience track in the UTHSC College of Graduate Health Sciences. He works in the lab of Lawrence Reiter, PhD, associate professor in the Departments of Anatomy and Neurobiology, and Neurology in the UTHSC College of Medicine.

This project will help to identify molecular and genetic mechanisms of Dup15q syndrome so that effective therapies can be developed to improve the lives of individuals affected by this disorder, and perhaps, individuals with difficult-to-manage epilepsy. Hope and his research team are particularly interested in investigating the seizures associated with Dup15q syndrome, since individuals with this disorder do not respond well to typical anti-seizure medications.

The majority of Dup15q research has been centered around one gene, UBE3A, which is located in the duplicated piece of DNA. However, other genes are also included in the extra DNA that have not been extensively studied. Additionally, previous research in Dup15q has focused mainly on neurons, which are one type of cell in the brain. Other cell types, such as glia — supportive cells in the central nervous system — have been largely unexplored in Dup15q research.

Hope's project will use fruit flies to investigate how elevated levels of genes within the duplicated region act alone or potentially with UBE3A to influence various aspects of Dup15q.

"I am honored to have received an award from the Dup15q Alliance," said Hope. "I look forward to working with them over the next few years, and I hope that my research will directly benefit kids with Duplication 15q syndrome."

His work may reveal new insights into how these genes, when duplicated, can cause various aspects of Dup15q syndrome including epilepsy and autism.

The **Dup15q Alliance** provides family support, promotes awareness and targeted treatments for Dup15q syndrome. The organization has facilitated the creation of nine Dup15q clinics in major medical centers around the United States. For more information, visit www.dup15q.org (http://www.dup15q.org/).

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UTHSC News (https://news.uthsc.edu/)

MENU

Associate Professor Lawrence Reiter of UTHSC Receives $108,000 Grant for Autism-Related Syndrome Research

Written by **Communications and Marketing, (mailto:communications@uthsc.edu)**December 1st, 2015

A new $108,000 grant from the Foundation for Prader-Willi Research will allow Dr. Lawrence Reiter (pictured with Department of Neurology research assistant Sarita Goorha) to investigate gene expression changes in the nerve cells of individuals with Prader-Willi syndrome.

Lawrence Reiter, PhD, of the University of Tennessee Health Science Center (UTHSC), has received a grant totaling $108,000 from the Foundation for Prader-Willi Research. The purpose of the study is to use a dental pulp stem cell system developed by Dr. Reiter to find gene expression changes in the nerve cells of individuals with Prader-Willi syndrome, both with and without autism. The outcome of this research could potentially identify therapeutic targets for the treatment of both Prader-Willi syndrome and autism in the future.

Dr. Reiter is an associate professor in the Departments of Neurology, Pediatrics, as well as Anatomy and Neurobiology in the UTHSC College of Medicine.

Dr. Reiter's laboratory has been using stem cells extracted from the dental pulp of primary or "baby" teeth to make nerve cells. He uses these nerves to study several different syndromes related to autism such as 15q Duplication syndrome, the presence of an extra chromosome that can lead to developmental disabilities; and Angelman syndrome, a neurogenetic disorder often misdiagnosed as autism or cerebral palsy that causes developmental delay and seizures along

with other health problems. Dr. Reiter's latest interest is Prader-Willi syndrome, a disorder that is the leading genetic cause of childhood obesity. The syndrome is also known to cause intellectual disabilities.

The project is titled "Gene Expression Analysis in PWS Subject Derived Dental Pulp Stem Cell Neurons." The funds will be distributed over one year with the option for renewal.

"The impact of this work will be twofold," said Dr. Reiter. "First, we will gain a better understanding of the underlying cause of Prader-Willi syndrome in neurons, and second, we will broaden our understanding of syndromic forms of autism, which is a major focus of my research efforts."

The mission of the **Foundation for Prader-Willi Research** is to eliminate the challenges of Prader-Willi syndrome through the advancement of research. High-quality research will lead to more effective treatments and an eventual cure for this disorder. For more information, visit http://www.fpwr.org (http://www.fpwr.org/).

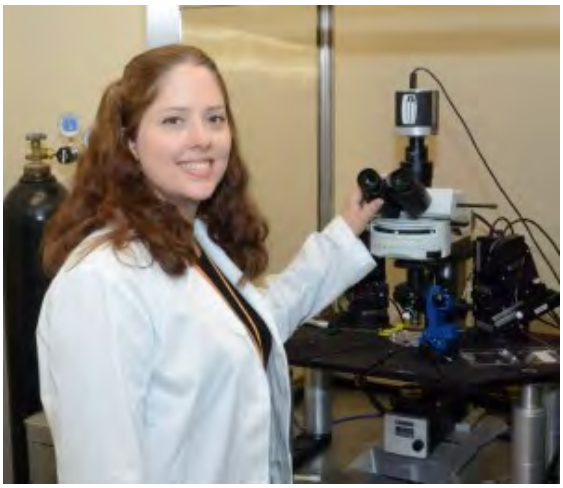
(http://uthsc.edu)

UTHSC News (https://news.uthsc.edu/)

MENU

Postdoctoral Fellow Lynda Wilmott of UTHSC Receives $52,500 Grant to Study Alzheimer's Disease and Dementia

Written by **Communications and Marketing, (mailto:communications@uthsc.edu)**January 15th, 2016



Lynda Wilmott, PhD, a postdoctoral fellow at UTHSC, has received a $52,500 grant from the Glenn/AFAR Postdoctoral Fellowship Program for Translational Research on Aging to study Alzheimer's disease and dementia.

Lynda Wilmott, PhD, a postdoctoral fellow at the University of Tennessee Health Science Center (UTHSC), has received a $52,500 grant to explore proteins in the brain that play a key role in controlling the communication of nerve cells that are important for encoding and storing memories. The grant from the Glenn/AFAR Postdoctoral Fellowship Program for Translational Research on Aging will allow Dr. Wilmott to explore how changes in these proteins affect aging and Alzheimer's disease.

Dr. Wilmott currently works in the laboratory of Catherine Kaczorowski, PhD, assistant professor in the Department of Anatomy and Neurobiology in the College of Medicine at UTHSC. Her research will clarify what role Kcnh3, a protein coding gene, plays in memory function, neuro responsiveness and communication between areas of the brain that are involved in memory. At the onset of memory decline in Alzheimer's disease, this protein has been shown to be enriched in the hippocampus, which is the structure in the brain that aids in encoding memories. The expectation of the study is that administering an antagonist drug will improve memory function, including neuron responsiveness and communication between brain areas.

"This project seeks to determine the role of Kcnh3 in memory formation and decline, and also test the efficacy of Kcnh3 modulators to prevent or reverse memory failure in Alzheimer's disease," said Dr. Wilmott. "This work will be an important step toward developing a therapeutic drug to maintain cognitive function in elderly humans. Not only would drugs that curb the onset of memory impairments reduce the financial costs associated with caring for dementia patients, but they would also improve the quality of life in elderly individuals with Alzheimer's disease and their caregivers."

According to the Alzheimer's Association, Alzheimer's and other forms of dementia were expected to cost the United States $226 billion in 2015. It is estimated that by 2050, the cost could balloon to $1.1 trillion, since currently this disease has no preventive treatments, cannot be slowed and has no cure. Caregivers had $9.7 billion in their own health care costs in 2014 due to the emotional and physical stress in treating Alzheimer's and dementia patients.

"I am incredibly fortunate and grateful to receive this Glenn/AFAR award because it will give me the opportunity to further explore how Kcnh3 affects learning and memory in both normal aging and AD, research that is greatly lacking and could potentially produce impactful results," said Dr. Wilmott.

The Glenn/AFAR Postdoctoral Fellowship Program for Translational Research on Aging serves to address adequate funding for postdoctoral fellows who focus their research and findings to directly impact human aging. A total of up to 10 one-year grants will be awarded. The awards range from $49,000 to $60,000.

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MENU

Vanessa Morales-Tirado of the Hamilton Eye Institute at UTHSC Receives $50,000 Grant for Ocular Immunology Research

Written by **Communications and Marketing, (mailto:communications@uthsc.edu)**January 13th, 2016

Dr. Vanessa Morales-Tirado

At the Hamilton Eye Institute at the University of Tennessee Health Science Center (UTHSC), ophthalmology and immunology are joining forces to advance medicine. Vanessa Morales-Tirado, MS, PhD, assistant professor in the Department of Ophthalmology, and the Department of Microbiology, Immunology and Biochemistry in the College of Medicine at UTHSC, is using her background in immunology to investigate diseases of the eye that lead to vision loss.

She has received $50,000 from the Alcon Research Institute Young Investigator Grant program for research that focuses on a specific molecule in the retinal ganglion cells, which communicate visual signals from the eye to the brain. Dr. Morales-Tirado hopes to provide insight into the survival and death of these cells, to identify potential drug targets in the cells for possible treatment, and to better understand how glaucoma affects them.

“Our results are expected to have a positive translational impact, as they will provide novel therapeutic targets in the treatment of glaucoma. We are very fortunate to have a collaborative team where researchers and physicians are working together to translate our findings,” Dr. Morales-Tirado said. “Glaucoma is the leading cause of irreversible blindness in the world, with

more than 70 million people suffering from it. If we find novel ways to halt the progress of the disease, and/or manage it, we are significantly contributing to many areas, as glaucoma has a significant global impact."

According to Alcon, primary open-angle glaucoma, caused by fluid draining slowly from the eye resulting in increased pressure usually without pain, can mean as much as a 40 percent vision loss. Early to middle stages of the disease show no noticeable symptoms until irreparable damage is caused.

Narrow-angle glaucoma has immediate symptoms, including hazy vision, nausea or vomiting, pain in the eye, redness and headaches.

Neither form of glaucoma has a cure, and vision lost cannot be restored. Due to the silent, progressive nature of this condition, it is estimated that more than four million Americans have glaucoma, and only half know they have the condition.

"For those in vision research, the Alcon Research Institute Young Investigator Grant is an honor. I feel blessed that I received this opportunity, which helps my laboratory and career, but most importantly, is an opportunity to help many people through my research," Dr. Morales-Tirado said.

The Alcon Foundation is committed to the global community in providing access to quality eye health, education and care. The Alcon Research Institute Young Investigator Grant awards $50,000 grants annually for vision research and ophthalmology.

About the Hamilton Eye Institute

Founded in 2004, the Hamilton Eye Institute consistently ranks among the top 10 providers of ophthalmic clinical care across the country. Its mission is to prevent blindness through patient care, research and education. As a premier eye center providing an advanced level of vision care, the institute's team manages more than 40,000 outpatient visits annually and attracts patients from throughout the region and the world. HEI is the only university eye center providing an advanced level of vision care within a 150-mile radius of Memphis.