The 3rd International Research Conference on Neurodegenerative Diseases (IRCND 2023)
Tucson, AZ
Oct 20-23, 2023

	Drachman Hall B109		Drachman Hall B111
Day 1	**Friday Oct 20, 2023**		
	Session 1	**Phase Separation, condensates, and proteostasis** Chairs: Randall Tibbetts & Udai Pandey	
4-4:15	Jacob Ayers, UCSF	Different α-Synuclein prion strains cause dementia with Lewy Bodies and multiple system atrophy	
4:15-4:30	Yuna Ayala, St Louis University	RNA-mediated ribonucleoprotein assembly controls TDP-43 nuclear retention	
4:30-4:45	Jacob Schwartz, University of Arizona	FUS binding to RNA prevents R-loops during transcription	
4:45-4:55	Q&A		
4:55-5:10	Sang Hwa Kim, University of Wisconsin-Madison	Axon guidance genes modulate neurotoxicity of ALS-associated UBQLN2	
5:10-5:25	Xinglong Wang, University of Arizona	The pathophysiology of AD-related Aggregatin	
5:25-5:40	Udai Pandey, University of Pittsburgh Medical Center	Identifying genetic modifiers of an RNA-binding protein mediated neurodevelopmental syndrome	
5:40-5:50	Q&A		
6:00-7:30	**Welcome Mix**		
Day 2	**Saturday Oct 21, 2023**		
7-7:50	Breakfast		
8-8:15	**Opening Remark,** Haining Zhu, Chair of IRCND 2023		
	Welcome Remark, University of Arizona Interim Senior Vice President of Research and Innovation Dr. Elloitt Cheu		
	Welcome Remark, R Ken Coit College of Pharmacy Dean Rick Schnellmann		
8:15-8:45	**Keynote Lecture:** Laura Ranum, University of Florida (introduced by Zixu Mao) RAN translation in C9orf72 ALS/FTD and other repeat expansion diseases: molecular insights and therapeutic opportunities		
8:45-8:55	Keynote Q&A		
	Session 2	**RNA binding proteins and RNA metabolism** Chairs: Clotilde Lagier-Tourenne & Jie Jiang	
9-9:15	Ankur Jain, MIT	Flanking sequences regulate the toxicity, non-AUG translation, and aggregation of RNA with tandem CAG Repeats	
9:15-9:30	Rita Sattler, Barrow Neurological Institute	Decrease of SPARCL1 in C9orf72 FTD/ALS cortical astrocytes	
9:30-9:45	Jie Jiang, Emory University	Repeat-RNA-mediated toxicity in C9ORF72 FTD/ALS	

9:45-9:55	Q&A				
9:55-10:10	Clotilde Lagier-Tourenne, Massachusetts General Hospital	Targeting stathmin-2 in TDP-43 proteinopathies			
10:10-10:25	Sami Barmada, University of Michigan	Smoke or fire: TDP43 pathology in ALS/FTD			
10:25-10:40	Pan Li, Johns Hopkins University	Bidirectional transcription at the PPP2R2B gene locus in spinocerebellar ataxia type 12			
10:40-10:50	Q&A				
10:50-11:10	Coffee Break				
	Session 3	**Dysfunction of mitochondria and other organelles** Chairs: Daryl Bosco & Xiongwei Zhu			
11:10-11:25	Daryl Bosco, UMass Chan Medical School	Expression of ALS-PFN1 impairs vesicular degradation in iPSC-derived microglia			
11:25-11:40	Isaac Chiu, Harvard Medical School	Gasdermin-E mediates mitochondrial damage in axons and neurodegeneration			
11:40-11:55	Ying Xu, Rutgers, The State University of New Jersey	Inhibition of phosphodiesterase 2A regulates mitochondrial dysfunction and Alzheimer's disease			
11:55-12:05	Q&A				
12:05-12:20	Alexa Woo, Case Western Reserve University	X-linked ubiquitin specific peptidase 11 increases Tauopathy vulnerability in women			
12:20-12:35	Zixu Mao, Emory University	LRRK2 and Lysosomal Anion Homeostasis in Parkinson's Disease			
12:35-12:45	Q&A				
12:45-2pm	Lunch				
1-2pm	**Poster (odd numbers presenting)**				
	Session 4A	**Neuroinflammation and peripheral-central nervous system interaction (I)** Chairs: Marie-Eve Tremblay & Yongjie Yang		**Session 4B**	**Application of omics technologies in neurodegenerative diseases** Chairs: Jungsu Kim & Shinghua Ding
2-2:15pm	Marie-Eve Tremblay, University of Victoria, Canada	Microglial (ultrastructural) diversity in health, aging, and neurodegenerative disease		Robert Bowser, Barrow Neurological Institute	Proteomics and mathematical modeling of longitudinal CSF distinguishes fast versus slow ALS disease progression

215-2:30	Dong-oh Seo, Washington University in St. Louis	ApoE isoform– and microbiota-dependent progression of neurodegeneration in a mouse model of tauopathy		Junmin Peng, St Jude Children's Research Hospital	Deep Proteomic Analysis of Alzheimer's Disease Brain and Mouse Models
2:30-2:45	Lihong Zhan, Denali Therapeutics	Engineering of a brain penetrant TREM2 antibody to enhance microglia function and metabolism for Alzheimer's disease		Jungsu Kim, Indiana University School of Medicine	Development of a novel targeted single-cell RNA-sequencing method to assess microglial states in mouse models of neurodegenerative diseases
2:45-2:55	Q&A			Q&A	
2:55-3:10	Yongjie Yang, Tufts University School of Medicine	Inflammatory cytokines induce dysfunctional astroglial exosomal HepaCAM signaling to motor neuronal axons in ALS models		John Fryer, Mayo Clinic	Clusterin/apoJ pathways in Alzheimer's disease pathogenesis
3:10-3:25	Gabriela Mercado, Johns Hopkins University	Recurrent urinary tract infections trigger motor impairment and microgliosis in humanized α-synuclein mice		Xianlin Han, University of Texas Health San Antonio	CNS sulfatide deficiency as a causal factor for various AD-like pathologies revealed by sulfatide-deficit mice and functional lipidomics
3:25-3:40	Wenzhang Wang, Case Western Reserve University	DLP1 fragment promotes inflammation in Alzheimer's disease.		Shinghua Ding, University of Missouri .	Dietary NMN supplementation enhances motor and NMJ function in ALS
3:40-3:50	Q&A			Q&A	
3:50-4:10	Coffee Break				
	Session 5A	**Mechanisms of neurodegeneration and resilience (I)** Chairs: Qian Cai & Wanli Smith		**Session 5B**	**Cell-type and circuit mechanisms underlying neurodegeneration** Chairs: Huaibin Cai & Yun Li
4:10-4:25	Stefan Stamm, University of Kentucky	Circular RNAs from the tau locus are translated after RNA editing, encode multiple proteins and contribute to Alzheimer's disease		Yun Li, University of Wyoming	Loss of TDP-43 Disrupts Prefrontal Neural Activity and Circuit

4:25-4:40	Yulan Xiong, University of Connecticut School of Medicine	Regulation of LRRK2 mRNA decay in Parkinson's disease		Yi Gu. NIH/NINDS	A consistent map in the medial entorhinal cortex supports spatial memory
4:40-4:55	Qian Cai, Rutgers, The State University of New Jersey	The role of mitochondria in synaptic autophagy and pathogenic tau clearance in tauopathy		Marangelie Criado-Marrero, University of Florida	Young (3-months) and aged (22-months) wild-type mice show distinct age-related alterations in brain connectivity 5 days after repetitive mild traumatic brain injury
4:55-5:05	Q&A			Q&A	
5:05-5:20	Qitao Ran, University of Texas Health San Antonio	Strengthened defense against ferroptosis ameliorated disease phenotypes of rodent models of ALS and Alzheimer's disease		Haining Zhong, Vollum Institute	Imaging the neuromodulatory state of striatal circuit during locomotion
5:20-5:35	Bindu Paul, Johns Hopkins University	Unraveling the mysteries of heme metabolism: Neuroprotective roles of biliverdin reductase A, the biosynthetic enzyme for bilirubin		Guohong Cui, NIH/NIEHS	New Methods for Investigating and Treating Parkinson's Disease
5:35-5:45	Q&A			Q&A	
6:00-7:30	Dinner				
7:30-7:30	Business Meeting				
Day 3	**Sunday Oct 22, 2023**				
7:00-7:50	Breakfast				
8:00-8:30	**Keynote Lecture:** Li Gan, Weill Cornell Medicine (introduced by Andrew Pieper) Targeting neuroimmune interactions in neurodegenerative diseases				
8:30-8:40	Keynote Q&A				
8:40-8:55	Yee-Ying Kong, Department of Veteran Affairs (introduced by Haining Zhu) VA Research Enterprise – Neurodegenerative Disease Portfolio				
	Session 6	**Novel therapeutic and diagnostic approaches** Chairs: Haining Zhu & Samar Hasnain			
9:00-9:15	Roberta Brinton, University of Arizona	Allopregnanolone regenerative therapeutic for mild Alzheimer's Disease (REGEN-BRAIN©): Discovery to translation to clinical trial			
9:15-9:30	Ji Young Suk, Arrowhead Pharmaceuticals	Preclinical profile of ARO-SOD1, an siRNA therapy for SOD1-ALS			
9:30-9:45	Samar Hasnain, University of Liverpool, United Kingdom	Targeting superoxide dismutase for ALS			

9:45-9:55	Q&A	
9:55-10:10	Kathleen Schoch, Washington University in St. Louis	Antisense oligonucleotide-based strategies for targeting Tau in neurodegenerative disease
10:10-10:25	Chris Hulme, University of Arizona	Targeting DYRK1A for neurotherapeutics: a triple play on Alzheimer's phenotypes from hit to early development candidate.
10:25-10:35	Q&A	
10:35-10:55	Coffee	
	Session 7	**Trainee Short Talks (8 min talk + 2 min Q&A for each trainee)** Chairs: Qingzhong Kong & Qitao Ran
10:55-11:05	Alicia Dubinski, University of Montreal	Consequences of defective stress granule assembly in the TDP-43M337V mouse model
11:05-11:15	Lucas Marmorale, University of Arizona	Rsp5/NEDD4 and ESCRT regulate TDP-43 toxicity and turnover via an endolysosomal clearance mechanism
11:15-11:25	Lishan Lin, Johns Hopkins University	A novel gene therapy strategy: a self-assembled exosome carrying NLRP3-siRNA attenuates Parkinson's disease pathology in mice
11:25-11:35	Sarah Barker, Case Western Reserve University	Reducing acetylated tau blocks traumatic brain injury-induced acceleration of Alzheimer's disease.
11:35-11:45	Jie Dong, NIH/NIA	Striatal compartmental control of locomotion through dopamine Inhibition
11:45-11:55	Suwarna Chakraborty, Johns Hopkins University School of Medicine	Depletion of cystathionine gamma-lyase is sufficient to mediate cognitive deficits and neurodegeneration
11:55-12:05	Chunlong Ma, University of Arizona	Screening for novel compounds binding to the GGGGCC repeat in C9orf72
12:05-12:15	Teresa Kee, Case Western Reserve University	PD-associated CHCHD2-T61I promotes proteinopathy via lysosomal dysfunction
12:15-12:25	Daniel Esteve, University of Wisconsin-Madison	Lipid droplet accumulation induces a neurotoxic phenotype in spinal cord astrocytes
12:25-12:35	Connor Bargar, University of Alabama at Birmingham	Real-time quaking-induced conversion (RT-QuIC)-derived α-synuclein fibrils induce neurotoxicity in vitro and in vivo
12:35-2pm	Lunch	
1:00-2:00	**Posters (even numbers presenting)**	

	Session 8A	**Mechanisms of neurodegeneration and resilience (II)** Chairs: Daniel Lee & Xinglong Wang		**Session 8B**	**Neuroinflammation and peripheral-central nervous system interaction (II)** Chairs: Marleco Vargas & Pan Li
2:00-2:15	David Kang, Case Western Reserve University	Slingshot homolog-1-mediated Nrf2 sequestration tips the balance from neuroprotection to neurodegeneration in Alzheimer's disease		Marcelo Vargas, University of Wisconsin-Madison	FABP7 expression modulates astrocyte-mediated neuroinflammation in models of neurodegeneration
2:15-2:30	Mali Jiang, Johns Hopkins University	Inhibition of PKC a&β1 kinase activity protects Huntington's disease human striatal neurons		Fenghua Hu, Cornell University	Progranulin inhibits phospholipase sPLA2-IIA to control neuroinflammation
2:30-2:45	Lalit Deshmukh, University of California San Diego	ALS-associated variants of annexin A11's proline-rich domain impair its S100A6-mediated fibril dissolution		Mohammad Moshahid Khan, University of Tennessee Health Science Center	Persistent DNA damage response drives cGAS-STING mediated neuroinflammation in Parkinson's disease
2:45-2:55	Q&A			Q&A	
2:55-3:10	Daniel Lee, University of Kentucky	Tau Citrullination: A New Posttranslational Modification that Elicits Conformer Diversity in Various Tauopathies.		Hongmin Wang, Texas Tech University Health Science Center	Disrupting 26S proteasome impairs learning and memory and causes neuroinflammation in mice
3:10-3:25	Qingzhong Kong, Case Western Reserve University	Development of prion protein-based gene therapy for CJD and AD		Fei Yin, University of Arizona	Astrocytic lipid catabolism as a converging point of Alzheimer's Disease cascades
3:25-3:35	Q&A			Q&A	
3:35-3:55	Coffee				
	Session 9A	**Alzheimer's Disease and therapeutics** Chairs: Ying Xu & Michael Wolfe		**Session 9B**	**Pathophysiology of Alzheimer's Disease** Chairs: Gemma Casadesus & Hyoung-gon Lee
3:55-4:10	Michael Wolfe, University of Kansas	Alzheimer mutations stabilize synaptotoxic γ-secretase-substrate complexes		Gemma Casadesus, University of Florida	Transcriptome changes with progression of METS/T2D in the APP/PS1 AD mouse: Evaluation of sex differences and

					predictive interactions to inform precision therapy
4:10-4:25	Jianhua Zhang, University of Alabama at Birmingham	Mitochondrial dysfunction in Alzheimer's disease		Xiangyou Hu, University of Connecticut School of Medicine	BACE1 inhibition in the adult reverses sleep-wake disturbances in 5xFAD but not in APP NLGF-NLGF mice
4:25-4:40	Mercedes Prudencio, Mayo Clinic Jacksonville	TDP-43-regulated cryptic RNAs accumulate in Alzheimer's disease brains		Swati More, University of Minnesota	Orally bioavailable ψ-GSH prodrugs as multimodal therapeutics for Alzheimer's disease
4:40-4:55	Xiongwei Zhu, Case Western Reserve University	PGC1alpha as a therapeutic target for Alzheimer's disease		Hyoung-gon Lee, University of Texas at San Antonio	Molecular mechanism underlying neuronal insulin resistance in Alzheimer's disease
4:55-5:10	Q&A			Q&A	
6:00-8:00	Award Banquet				
6:30-7:10	**GASND Lifetime Achievement Award** **Joan S Valentine, UCLA** Iron: Life's primeval transition metal				
7:10-7:40	Young Investigator Awards				
7:40-7:50	2024 Conference introduction				
Day 4	**Monday Oct 23, 2023**				
7:00-7:50	Breakfast				
	New Technologies and Novel Disease Models (Skaggs 325) Chairs: Bindu Paul & Ziyuan Guo				
8:00-8:30	Hod Dana, Lerner Research Institute, Cleveland Clinic Foundation Monitoring of brain activity patterns as a marker for post-injury recovery				
8:30-9:00	Da-Ting Lin, NIH/NIDA Combining miniscope imaging with deep behavior mapping to study neural coding of behavior in freely behaving rodents				
9:00-9:30	Ziyuan Guo, Cincinnati Children's Hospital Medical Center Replicating Human Blood-Brain Barrier Development and Cerebral Cavernous Malformations in Blood-Brain Barrier Assembloids				
9:30-9:45 (Virtual)	David Borchelt, University of Florida Distinct strains of misfolded SOD1 emerge in prion-like transmission of ALS in SOD1 transgenic mice				
9:45-10:00 (Virtual)	Elena Ziviani, University of Padova, Italy Mitophagic effect of USP14 inhibition rescues circadian defects and sleep disturbance of an in vivo model of Parkinson's disease				
10:00-10:15	Break				
10:15-11:15	**Junior Faculty Development Workshop** Chair: Alexa Woo & Mali Jiang				
11:15	**Adjourn**				

Posters

- **Set up posters Saturday morning. Take down Sunday afternoon/evening.**
- **The poster session is during lunch time** on both Saturday and Sunday.
- **Odd numbers present on Saturday. Even numbers present on Sunday.**

1	Hannah Fuehrer	Johns Hopkins Medicine	Synphilin-1 Induces Obesity-Linked Cognitive Impairment in Mice
2	Edwin Vazquez-Rosa	Case Western Reserve University	Chromatin accessibility in the brain after mild injury reveals chronic changes in gene expression linked to neuropsychiatric impairment.
3	Ian Robey	SAVAHCS	The VA Biorepository Brain Bank (VABBB)
4	Anupam Raina	University of Alabama at Birmingham	VCP inhibitor UBXN6 is associated with α-synuclein in a robust cellular model for α-synucleinopathies.
5	Taylor Malone	National Institute of Neurological Disorders and Stroke	A consistent map in the medial entorhinal cortex supports spatial memory
6	KALYANI CHAUBEY	CASE WESTERN RESERVE UNIVERSITY	Normalizing brain nicotinamide adenine dinucleotide levels protect and treat Alzheimer's disease
7	Fan Tang	School of Medicine, Johns Hopkins University	Genetically engineering of human induced pluripotent stem cells to generate brain-targeting exosomes for neurodegenerative diseases
8	SUNIL TRIPATHI	Johns Hopkins University School of Medicine	Treatment with P7C3-A20 prevents tau pathology, mutant Huntingtin aggregation, neurodegeneration, and neuropsychiatric impairment in Huntington's disease
9	Haylee Hamilton	University of Wisconsin-Madison	Neuroprotective effect of nicotinamide mononucleotide in motor neurons from ALS mouse models
10	Mariana Bresque Toledo	University of Wisconsin - Madison	FABP7 expression modulates astrocyte-neuron interaction in a model of neuroinflammation.
11	Emiko Miller	Case Western Reserve University	The role of neuronal primary cilia in Alzheimer's disease
12	Salvatore Caradonna	Case Western Reserve University	Mechanistic insights into impaired cognition resulting from cereblon deficiency
13	Sophia Marcinowski	University of Arizona	The Role of the Rsp5 Adaptors in TDP-43 Clearance and Degradation
14	Mika Cadiz	Mayo Clinic Arizona	Sustained microglial alterations following aducanumab anti-amyloid treatment and withdrawal
15	Ben Rabichow	Mayo Clinic	Exploring interactions between amyloid and alpha-synuclein proteinopathies using knock-in and viral-mediated genetic approaches
16	Brianna Masters	Case Western Reserve University	β-arrestin2 Knockout Reduces and Rescues Parkinson's Pathology

17	Brittany Gratreak	University of Arizona	Isoform-Selective Inhibition of Chaperone Protein Heat Shock Protein 90-Beta in the Preventative Treatment of Alzheimer's Disease
18	Qianying He	University of Arizona	Validation of Novel Compounds from Computational Biology Analysis for Treatment of Alzheimer's Disease
19	Parthasaradhi Tanguturi	University of Arizona	SRI 22136, A Novel Delta Opioid Receptor (DOR) Antagonist for the Treatment of Alzheimer's Disease
20	Yuchen Liu	University of Arizona	FUS Mutations Activate Innate Immune Response Promoting Neuroinflammation in ALS
21	Swetha Chintala	University of California San Diego	Biophysical study of insulin-degrading enzyme and its interactions with amyloid-beta
22	Rukayat Aromokeye	University of Arizona	Discovery of Novel Small Molecule Inhibitors of a Stress Granule Protein G3BP1 in Neurodegeneration
23	Israel Aispuro	University of Arizona	Effect of Heavy Metal on Neuronal Differentiation
24	Vaishnavi Nagarajan	University of Kansas	FAD mutations stabilize g - secretase – substrate complexes and cause synaptotoxicity in C. elegans.
25	Sofia Corella	Case Western Reserve University	Investigating the impact of traumatic brain injury on the hematopoietic system
	Virtual posters (via Zoom in Drachman Hall B109 and B111)		
26	Junling Yang	University of Illinois	A novel endothelial cell/macrophage co-culture model for investigation of the effects of systemic inflammation on brain endothelial cells
27	Kimberly Olney	Mayo Clinic	Transcriptional Alterations in Cingulate Cortex of Lewy Body Dementia and Alzheimer's Disease: A Comparative Analysis
28	Victor Lau	University of Victoria	TREM2+/Iron-enriched CNS-interface macrophages and microglia are likely senescent, and display environmental morphological heterogeneity in aging and Alzheimer's disease conditions