



# CMPR 14<sup>th</sup> Annual Symposium

~ TTUHSC-SOM ~

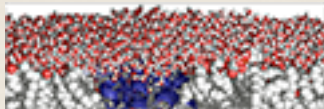
Sept 12-13<sup>th</sup>, 2022

Academic Event Center

Zoom option

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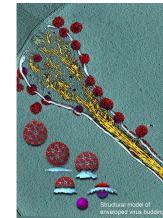
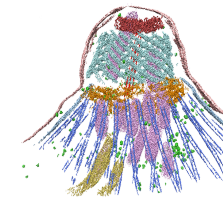


## KEYNOTE PRESENTATION

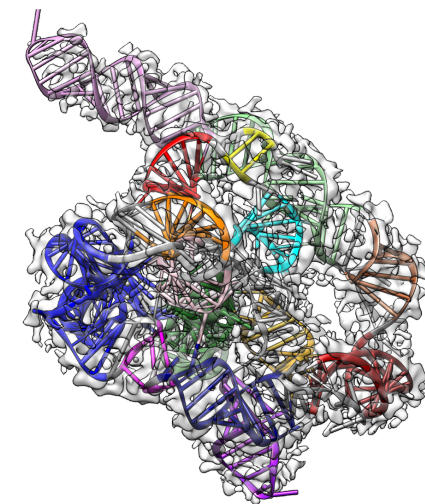


**Dr. Wah Chiu, Ph. D.**  
**Wallenberg-Bienenstock Professor**  
**Member of United States National**  
**Academy of Sciences**

**Department of Bioengineering and**  
**Department of Microbiology and**  
**Immunology, Stanford University, Stanford;**  
**SLAC National Accelerator Laboratory,**  
**Menlo Park, CA**



*Visualizing structural variants  
in biochemical and biological  
processes using cryogenic  
electron microscopic imaging*



*Tetrahymena* ribozyme  
*Nature* 2021; 596:603

**11:30 am - 12:40 pm**

**Monday, Sept. 12<sup>th</sup>, 2022**





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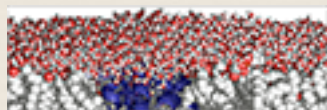
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## SCIENTIFIC PROGRAM

Chair: Lan Guan, CMPR Director, Professor and Interim Chair (Cell Physiology & Molecular Biophysics), TTUHSC-SOM

Time	Speaker	Affiliation	Presentation Title
09:00 - 11:00 AM	<b>One-on-one meetings</b>		
11:30 - 11:40 AM	Welcome by Dr. Lan Guan, Director of CMPR <b>Opening Remarks by Lance McMahon, VPRI</b>		
11:40 AM - 12:40 PM	<b>Keynote Presentation</b> Moderated by Dr. Lan Guan		
	<b>Wah Chiu, Ph.D.</b> Wallenberg-Bienenstock Professor Member of United States National Academy of Sciences Department of Bioengineering and Department of Microbiology and Immunology, Stanford University, Stanford; SLAC National Accelerator Laboratory, Menlo Park, CA		
	<i>Visualizing structural variants in biochemical and biological processes using cryogenic electron microscopic imaging</i>		
12:40 - 01:30 PM	<b>Lunch Break</b> Professor Chiu to have lunch with GSBS students, organized by Dr. Ina Urbatsch (TTUHSC)		
01:45 PM	Moderator: Dr Helen Zgurskaya, George Lynn Cross Professor (University of Oklahoma )		
01:45 - 02:15 PM	<b>Lan Guan Professor</b>	Cell Physiology & Molecular Biophysics, TTUHSC	CryoEM structure of a nanobody-trapped sugar-releasing state of melibiose transporter MelB
02:15 - 02:45 PM	<b>Benjamin Wylie Associate Professor</b>	Chemistry & Biochemistry, TTU	The open-state and lipid-bound NMR structures of KiBac
02:45 - 03:15 PM	<b>Bryan Sutton Professor</b>	Cell Physiology & Molecular Biophysics, TTUHSC	Crystal structure of Dnase1L3: Identification of antigen determinants responsible for serum clearance
03:15 - 04:15 PM	Moderator: Dr. Andrey Karamyshev, Associate Professor & Associate Director of CMPR (TTUHSC)		<b>Lightning Talks</b>
04:15 - 06:00 PM	<b>Poster Presentation</b>		
06:00 - 08:30 PM	Reception Academic Event Center		



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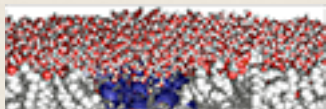
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## SCIENTIFIC PROGRAM

Chair: Lan Guan, CMPR Director, Professor and Interim Chair (Cell Physiology & Molecular Biophysics), TTUHSC-SOM

	Speaker	Affiliation	Presentation Title
09:00 AM - 12:00 PM	<b>One-on-one meetings</b>		
12:00 - 1:00 PM	<b>Professor Chiu to have lunch with CMPR students and postdoctoral fellows, moderated by Matthew Dominguez (TTUHSC, PhD Candidate)</b>		
01:00 PM	<b>Dr. Chwan-Li (Leslie) Shen, Associate Dean for Research, Professor of Pathology, SOM</b>		
	<b>Moderator: Dr Ruibin Liang, Assistant Professor (TTU)</b>		
01:00 - 01:25 PM	<b>Pablo Artigas Professor</b>	Cell Physiology & Molecular Biophysics, TTUHSC	How to make a Na pump
01:25 - 01:50 PM	<b>Michaela Jansen Professor</b>	Cell Physiology & Molecular Biophysics, TTUHSC	Establishing the intracellular domain of pentameric channels as a novel drug target
01:50 - 02:15 PM	<b>Ina Urbatsch Professor</b>	Cell Biology & Biochemistry, TTUHSC	Site-specific tryptophan fluorescence distinguishes drug-binding to distinct sites of the multidrug exporter P-glycoprotein
02:15 - 02:45 PM	<b>Break (30 min)</b>		
03:45 PM	<b>Moderator: Dr Michael Blanton, University Distinguished Professor (TTUHSC)</b>		
03:45 - 04:10 PM	<b>Tetyana Vasylyeva Professor</b>	Department of Pediatrics, TTUHSC	Congenital Nephrotic Syndrome: Steps to the Cure
04:10 - 04:30 PM	<b>Emerson Rojas, PhD Postdoctoral fellow</b>	Cell Physiology & Molecular Biophysics, TTUHSC	Structural dynamics of the human voltage-gated proton channel 1.
04:35 - 4:50 PM	<b>Matthew Dominguez PhD Candidate</b>	Cell Physiology & Molecular Biophysics, TTUHSC	Redefining the architecture of dysferlin
	<b>Announcement of Poster Presentation Awards by Dr Lan Guan, Director of CMPR</b>		
	<b>~ End ~</b>		

Monday, Sept. 12<sup>th</sup>, 2022

## POSTER PRESENTATION

AEC

Poster ID	Academic Ranking	Presentor	Title	School	PI	Lightning Talk
1	Res. Assistant Prof.	Hariharan Parameswaran	The NabFab fiducial module assisted the cryo-EM structure determination of melibiose permease	TTUHSC	Guan Lab	*
2	Res. Assistant Prof.	Inga V Leus	Characterization of two EmrAB-like efflux pumps of <i>Acinetobacter baumannii</i>	U. Oklahoma	Zgurskaya Lab	*
3	Res. Assistant Prof.	Justyna W. Adamiak	Impact of RND efflux pumps deletion on <i>Pseudomonas aeruginosa</i> physiology	U. Oklahoma	Zgurskaya Lab	*
4	Senior Res. Assoc.	Devaraja Rajasekaran	Deletion of Slc6a14 reduces cancer growth and metastatic spread in <i>KPC</i> spontaneous mouse model of pancreatic cancer	TTUHSC	Bhutia Lab	
5	Postdoctoral Fellow	Victoria Young	Voltage clamp fluorometry in P-type ATPases	TTUHSC	Artigas Lab	*
6	Postdoctoral Fellow	Nermina S. Belirgen	Interaction of the intracellular domain of pentameric-ligand gated ion channels with mouse RIC-3 chaperone	TTUHSC	Jansen Lab	
7	Postdoctoral Fellow	Svilana Babii	Proton transfer activity of the reconstituted full-length and truncated <i>Mycobacterium tuberculosis</i> Mmpl3 is modulated by substrate mimics	U. Oklahoma	Zgurskaya Lab	*
8	Postdoctoral Fellow	Satoshi Katsube	Characterization of melibiose permease MelB specific nanobodies for structural studies	TTUHSC	Guan Lab	
9	Postdoctoral Fellow	Rushikesh Tambat	Efflux pump inhibitors that target AdeIJK revive antibiotic activity in <i>Acinetobacter baumannii</i>	U. Oklahoma	Zgurskaya Lab	*
10	PhD Student	Evan J. van Aalst	Temperature-dependent lipid and protein dynamics in native and model biological membranes	TTU	Wylie Lab	*
11	PhD Student	Bilal Siddique	Maximum solubility of ergosterol and stigmasterol in various lipid membranes	TTU	Huang Lab	
12	PhD Student	Nghi NB Tran	Lipid environment determines the drug-stimulated ATPase activity of P-glycoprotein	TTUHSC	Urbatsch Lab	*
13	PhD Student	Saman Majeed	Dynamics of HIV-1 Vpu oligomer assembly and formation of complexes with host proteins in solution and in lipid membranes	TTU	Georgieva Lab	
14	PhD Student	Md Majharul Islam	Negative staining electron microscopy provides insights into HTLV-1 p13 <sup>II</sup> protein interactions with lipid membranes	TTU	Georgieva Lab	
15	PhD student	Amirhossein Bakhtiari	Quantifying the mutational effects on the cation-binding affinity of melibiose permease	TTU	Liang Lab	*
16	PhD student	Maryam Yekefallah	Understanding the activation of inward rectifier potassium channels via functional assays and solid-state NMR	TTU	Wylie Lab	
17	PhD student	Morgana K. Kellogg	SRP54 Depletion leads to the loss of ability of the signal recognition particle to bind ribosomes	TTUHSC	Karamyshev Lab	*
18	PhD student	Kseniia Orobets	Implications of novel clinical mutations in granulysin biogenesis.	TTUHSC	Karamyshev Lab	
19	PhD student	Jon McCord	Structural features of Dnase1L3 responsible for diverse antigenic serum DNA clearance	TTUHSC	Sutton Lab	*
20	PhD student	Isaac Eason	Coupling solid state NMR and Molecular Dynamics to investigate membrane proteins	TTU	Wylie Lab	
21	MD PhD Student	Elizabeth Kamilar	Heterogeneity of self-assembled states within SMALPs	TTUHSC	Liang Lab	*
22	MD PhD Student	Johanna Villarreal	Defining the DNA binding mode of Dnase1L3 and modifying the enzyme to be used as a therapeutic.	TTUHSC	Sutton Lab	
23	MD PhD Student	Kerri Spontarelli	Heterozygous <i>ATPIA1</i> knockout mice do not develop neuropathies	TTUHSC	Artigas Lab	*
24	MS Student	Megan M. Skains	Dissecting Rb <sup>+</sup> -ions occupancy and dissociation constant of individual ion binding sites within the K <sup>+</sup> -channel selectivity filter	TTUHSC	Cuello Lab	*
25	MS Student	Lauretta A. Pierre	Effects of RIC-3 on the expression profile of serotonin type 3A receptors.	TTUHSC	Jansen Lab	
26	MS Student	Joshua Theriot	Asn58 in the cation-binding site of <i>Salmonella typhimurium</i> MelB.	TTUHSC	Guan Lab	*
27	MSSRP Student	Irina K. Cavdar	Functional role of conserved amino acid residues in the intracellular domain of $\alpha 7$ acetylcholine receptors	TTUHSC	Jansen Lab	
28	MSSRP Student	Austin D. Rodgers	Mouse 5-HT3A receptor protein-protein interactions	TTUHSC	Jansen Lab	
29	SARA Student	Jemma C. Gaines	Overexpression in <i>E. coli</i> cells and purification of the understudied human potassium channel Kv1.6 channel.	TTUHSC	Cuello Lab	