



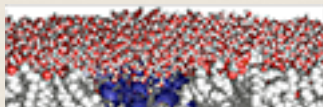
CMPR 13th Annual Symposium

~ TTUHSC-SOM ~

Oct. 28-29th, 2021

ZOOM
&
Academic Event Center

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KEYNOTE PRESENTATION



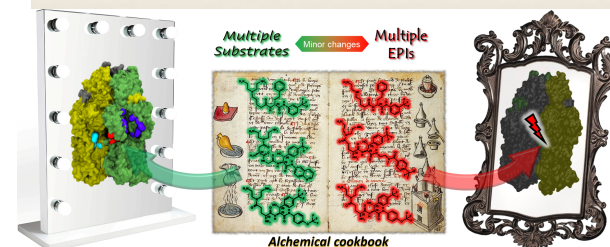
Dr. Helen Zgurskaya
George Lynn Cross Professor

Dept. of Chemistry and Biochemistry
The University of Oklahoma

Academic Event Center

Presentation Title

*“The two-faced Janus of
multi-drug efflux substrates
and inhibitors”*



12:00 - 1:10 pm

Friday, Oct. 29th, 2021





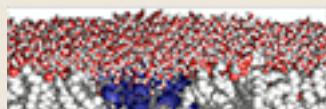
CMPR 13th Annual Symposium

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Thursday, Oct. 28th, 2021

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SCIENTIFIC PROGRAM

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

Time	Speaker	Affiliation	Presentation Title
08:50 - 09:00 AM	Welcome by Dr. Lan Guan, Director of CMPR Opening Remarks by Prof. Chwan-Li (Leslie) Shen, Associate Dean for Research, Professor of Pathology, SOM		
	Moderator: Dr. Joachim Weber, Associate Professor (Chemistry & Biochemistry, TTU) – Zoom Meeting		
09:00 - 09:30 AM	Ruibin Liang Assistant Professor	Chemistry & Biochemistry, TTU	First-principles non-adiabatic dynamics simulation of the molecular photoswitches in the solution and protein
09:30 - 10:00 AM	Elka Georgieva Assistant Professor	Chemistry & Biochemistry, TTU	Expression, purification, and characterization of membrane proteins from human pathogens
10:00 - 10:30 AM	Yangzom D. Bhutia Assistant Professor	Cell Biology & Biochemistry, TTUHSC	SLC6A14 is a tumor promoter and a novel drug target for pancreatic cancer
10:30 - 11:00 AM	Ion A. Bobulescu Associate Professor	Cell Biology & Biochemistry, TTUHSC	Renal lipid metabolism and kidney disease
11:00 AM	- Break (15 min) -		
11:15 - AM	Moderator: Dr. Andrey Karamyshev, CMPR Associate Director & Associate Professor (Cell Biology and Biochemistry, TTUHSC)		Short Talk - Postdoctoral fellows/Research Associates 4 Talks (Zoom Meeting)
	Lunch Break (Take-away box)		
	Moderator: Dr. Michael Blanton, University Distinguished Professor (Pharmacology & Neuroscience, TTUHSC) – Zoom Meeting		
02:00 - 02:25 PM	Michael Latham Associate Professor	Chemistry & Biochemistry, TTU	Structural and dynamics studies of the Mre11-Rad50-Nbs1/Xrs2 DNA repair complex
02:25 - 02:50 PM	Pablo Artigas Professor	Cell Physiology & Molecular Biophysics, TTUHSC	Mechanisms of Na and K selectivity by the Na/K pump
02:50 - 03:15 PM	Luis Cuello Professor	Cell Physiology & Molecular Biophysics, TTUHSC	Ion selectivity and ion occupancy of the potassium channel selectivity filter binding sites
03:15 - 03:40	Michaela Jansen Associate Professor	Cell Physiology & Molecular Biophysics, TTUHSC	Structure and function of the serotonin receptor intracellular domain
	- Break (15 min) -		
03:55 - PM	Moderator: Dr. Hongjun Liang, Associate Professor (Cell Physiology and Molecular Biophysics, TTUHSC)		Short Talk - Graduate Students 12 Talks (Zoom Meeting)



SHORT TALKS

Symposium Chair: Lan Guan, CMPR Director, Professor and Interim Chair (Cell Physiology & Molecular Biophysics)
Judge Committee Chair, Dr. Michael Blanton, University Distinguished Professor (Pharmacology & Neuroscience, TTUHSC)

Thursday, Oct. 28th, 2021

	Speaker	Affiliation	Presentation Title
11:1 5 AM	Moderator: Dr. Andrey Karamyshev, CMPR Associate Director & Associate Professor (Cell Biology and Biochemistry, TTUHSC) Short Talks - Postdoctoral Fellows/Research Associates		
1	<u>Jitender Bariwal</u> , Mariana C. Fiori, Courtney L. Katz, Guillermo A. Altenberg & Hongjun Liang	Dr. Liang's lab, Cell Physiology & Molecular Biophysics, TTU Health Sciences Center	Polymer nanodiscs for doxorubicin delivery to cancer cells
2	<u>Emerson M. Carmona</u> , D. Marien Cortes, and Luis G. Cuello	Dr. Cuello's lab, Cell Physiology & Molecular Biophysics, TTU Health Sciences Center	Optimizing the human voltage-gated proton channel (hHv1) purification to understand its structure and function.
3	<u>Hoa Quynh Do</u> and Michaela Jansen	Dr. Jansen's lab, Cell Physiology & Molecular Biophysics, TTU Health Sciences Center	Interaction interface between pentameric neurotransmitter-gated ion channels and RIC-3 chaperone
4	<u>Satoshi Katsube</u> , Ruibin Liang, Anowarul Amin-Parameswaran Hariharan, and Lan Guan	Dr. Guan's lab, Cell Physiology & Molecular Biophysics, TTU Health Sciences Center	The role of T121 in the cation selectivity in the <i>Salmonella typhimurium</i> melibiose permease MelB
03:55 PM	Moderator: Dr. Hongjun Liang, Associate Professor (Cell Physiology and Molecular Biophysics, TTUHSC) Short Talks - Graduate Students		
1	<u>Reza Amani</u> , Charles D. Schwieters, Collin G. Borcik, Isaac R. Eason, Ruixian Han, Benjamin D. Harding, and Benjamin J. Wylie	Dr. Wylie's lab, Dept. of Chemistry and Biochemistry, TTU	Water accessibility refinement of the extended structure of KirBac1.1 in the closed state
2	<u>Thomas Germain</u> , Michaela Jansen, and Petar N. Grozdanov	Dr. Jansen's lab, Cell Physiology & Molecular Biophysics, TTU Health Sciences Center	Localization and functional characterization of SLC28 transporter variants
3	<u>Valeria Jaramillo-Martinez</u> , Vadivel Ganapathy, and Ina L. Urbatsch	Dr. Urbatsch's lab, Cell Biology & Biochemistry, TTU Health Sciences Center	Peptide tags and domains for expression and detection of mammalian membrane proteins at the cell surface
4	<u>Elizabeth Kamilar</u> , Jitender Bariwal, Wan Zheng, and H. Liang	Hongjun Liang's lab, Cell Physiology & Molecular Biophysics, TTU Health Sciences Center	Determination of polymer to lipid ratio in SMALPs
5	<u>Courtney Katz</u> , Mariana C. Fiori, Yunjiang Jiang, Wan Zheng, Guillermo Altenberg, and Hongjun Liang	Dr. Liang's lab, Cell Physiology & Molecular Biophysics, TTU Health Sciences Center	Polymer nanodiscs as a new platform for membrane protein research
6	<u>Morgana K. Kellogg</u> , Elena B. Tikhonova, and Andrey L. Karamyshev	Dr. Karamyshev's lab, Cell Biology & Biochemistry, TTU Health Sciences Center	The role of SRP in membrane protein biogenesis
7	<u>Ksenija Korac</u> and Yangzom D Bhutia	Dr. Bhutia's lab, Cell Biology & Biochemistry, TTU Health Sciences Center	Carbidopa as a novel and targeted single-agent chemo-immunotherapy for pancreatic cancer.
8	<u>Jon J. McCord</u> , Minal Engavale, Elahe Masoumzadeh, Johanna Villarreal, Britney Mapp, Michael Latham, Peter Keyel, and Roger B. Sutton	Dr. Sutton's lab, Cell Physiology & Molecular Biophysics, TTU Health Sciences Center	Structural features of Dnae1L3 responsible for increasing substrate diversity in the clearance of serum nucleic acid antigen
9	<u>Marcela Olvera</u> and Helen I. Zgurskaya	Dr. Zgurskaya's lab, Dept. of Chemistry and Biochemistry, Univ. Oklahoma	Genetic and phenotypic analyses of potential contributors to antibiotic resistance of <i>Acinetobacter baumannii</i> .
10	<u>Bradley K. Schniers</u> , Devaraja Rajasekaran, Ksenija Korac, Tyler Sniegowski, Vadivel Ganapathy, and Yangzom D. Bhutia	Dr. Bhutia's lab, Cell Biology & Biochemistry, TTU Health Sciences Center	PEPT1 is essential for the growth of pancreatic cancer cells: A viable drug target
11	<u>Muhammad R. Uddin</u> and Helen I. Zgurskaya	Dr. Zgurskaya's lab, Dept. of Chemistry and Biochemistry, Univ. Oklahoma	Covalent inhibition of AcrA, the periplasmic component of AcrAB-TolC efflux pump
12	<u>Victoria Young</u> and Pablo Artigas	Dr. Artigas's lab, Cell Physiology & Molecular Biophysics, TTU Health Sciences Center	Assessing conserved conformational changes in P-type 2 ATPases with voltage clamp fluorometry



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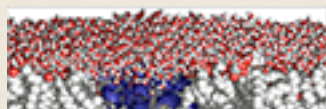
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Chair: Lan Guan, CMPR Director, Professor and Interim Chair (Cell Physiology & Molecular Biophysics)

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	Moderator: Dr. Ina L. Urbatsch, Professor (Cell Biology & Biochemistry, TTUHSC) – Zoom Meeting		
09:00 - 09:25 AM	Hongjun Liang Associate Professor	Cell Physiology & Molecular Biophysics, TTUHSC	Fighting resistant bacterial infections with biorenewable and biodegradable nanoantibiotics
09:25 - 09:50 AM	Andrey Karamyshev Associate Professor	Cell Biology & Biochemistry, TTUHSC	Co-translational quality control of secretory and membrane proteins in health and disease
09:50 - 10:00 AM	- 10 min Break -		
	Session Leader: Dr. Benjamin J. Wylie, Assistant Professor (Chemistry & Biochemistry, TTU) – Zoom Meeting		
10:10 - 10:25 AM	Franklin Hays Assistant Professor	Biochemistry & Molecular Biology, Univ. of Oklahoma HSC	p66Shc is an apoptotic rheostat whose targeted ROS inhibition improves MI outcomes
10:25 - 10:50 AM	Bryan Sutton Professor	Cell Physiology & Molecular Biophysics, TTUHSC	Redefining the architecture of ferlin proteins: Insights into complex, multi-domain protein structure and function
10:50 - 11:15 AM	Lan Guan Professor	Cell Physiology & Molecular Biophysics, TTUHSC	The core mechanism for the Na ⁺ /melibiose symport catalyzed by MelB
	Keynote Presentation - AEC Moderated by Dr. Lan Guan		
12:00 - 12:10 PM	CMPR Highlights by Professor Lance McMahon, SVPRI, TTUHSC		
12:10 - 01:10 PM	Keynote Speaker: Dr. Helen Zgurskaya George Lynn Cross Professor Dept. of Chemistry and Biochemistry The University of Oklahoma		
	Title: The two-faced Janus of multi-drug efflux substrates and inhibitors		
	- End -		