

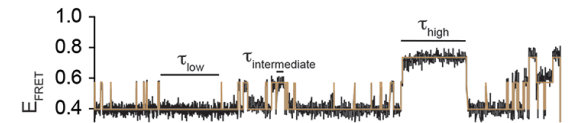


**KEYNOTE
PRESENTATION**



**Dr. Olga Boudker,
Ph.D. & Professor**

**Interim Chair, Department of Physiology and
Biophysics, Weill Cornell Medical College
Investigator, Howard Hughes Medical
Institute
Member, National Academy of Sciences, USA**



*Dynamics and evolution of
glutamate transporters from
bacteria to human*

9:15 - 10:30 am

Thursday, 3rd, 2025

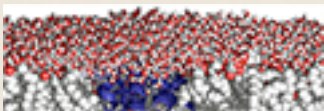
**CMPR
XVI Annual
Symposium**

Lubbock

April 3-4th, 2025

Academic Event Center

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CMPR
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Symposium

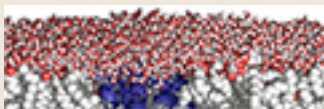
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SCIENTIFIC PROGRAM

Organizers:

Dr. Lan Guan, Co-Director of CMPR, Professor (Cell Physiology & Molecular Biophysics)
Dr. Michael Wiener, Co-Director of CMPR, Chair & Professor (Cell Physiology & Molecular Biophysics)
Dr. Andrey Karamyshev, Assoc. Director of CMPR, Assoc. Professor (Cell Biology & Biochemistry)

Day - 1 Morning Session, Keynote Presentation and CMPR Member Talks

Time	Speaker	Affiliation	Presentation Title
08:55 - 09:00 AM	Welcome by Dr. Lan Guan, Co-Director of CMPR		
09:00 - 09:15 AM	<p>Address from TTUHSC Office of Research Dr. Lance McMahon, VPRI University Distinguished Professor, Dept. Pharmaceutical Sciences, School of Pharmacy (Moderated by Dr. Michael Wiener, Co-Director of CMPR, Chair & Professor)</p>		
09:15 - 10:30 AM	<p>Keynote Presentation Dr. Olga Boudker, Ph.D. & Professor Investigator, Howard Hughes Medical Institute at Weill Cornell Medicine, New York Member, National Academy of Sciences USA; Interim Chair, Department of Physiology and Biophysics Presentation title: Dynamics and evolution of glutamate transporters from bacteria to human (Moderated by Dr. Lan Guan, Co-Director of CMPR, Professor)</p>		
- Break (30 min) -			
<p>Transporters and mechanisms (Moderated by Dr. Andrey Karamyshev, Assoc. Director of CMPR, Assoc. Professor)</p>			
11:00 - 11:20 AM	Ruibin Liang Asst. Professor	Chemistry & Biochemistry, TTU	Atomic-level free energy landscape reveals cooperative symport mechanism of a melibiose transporter
11:20 - 11:40 AM	Pablo Artigas Professor	Cell Physiology & Molecular Biophysics, TTUHSC	How mutations in sodium pump subunits cause renal hypomagnesemia and treatment refractory seizures
11:40 - 12:00 AM	Helen Zgurskaya Professor	Chemistry and Biochemistry U. Oklahoma	Permeability barriers of bacterial pathogens and approaches to bypass them
12:00 - 12:20 AM	Michael Wiener Professor and Chair	Cell Physiology & Molecular Biophysics, TTUHSC	TonB-dependent bacterial outer membrane active transport
12:20 - 1:30 PM	<p>Lunch Break Professor Olga Boudker to have lunch with CMPR Students, moderated by Dr. Bryan Sutton, Professor</p>		



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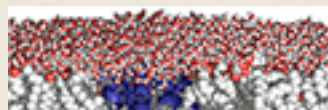
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SCIENTIFIC PROGRAM

Day - 1 Afternoon Session - New CMPR Member Talks and Trainee Presentations

Time	Speaker	Affiliation	Presentation Title
New CMPR Member Presentation (Moderated by Dr. Michael Wiener, Co-Director of CMPR, Chair & Professor, Cell Physiology and Molecular Biophysics, TTUHSC)			
01:30 - 01:50 PM	Adam W. Smith Assoc. Professor	Chemistry & Biochemistry, TTU	Lipid regulation of the EGFR receptor tyrosine kinase
01:50 - 02:10 PM	Zemfira Karamysheva Assoc. Professor	Cell Biology & Biochemistry, TTUHSC	Molecular mechanisms of antimony drug resistance in Leishmania parasites
02:10 - 02:30 PM	Malaiyalam Mariappan Assoc. Professor	Cell Biology & Biochemistry, TTUHSC	Unraveling the Architecture of an ER Stress Sensor
- Break (30 min) -			
Student Fellowship Award Talk (Moderated by Dr. Lan Guan, Co-Director of CMPR)			
03:00 - 03:15 PM	Megan Skains PhD Student	Introduced by Mentor, Dr. Luis Cuello Cell Biology & Biochemistry, TTUHSC	Exploring the thermodynamics and structural characterizations of potassium channels
03:20 - 04:30 PM	Lightning Talks (Moderated by Dr. Luis Cuello, Graduate Advisor and Professor, Cell Physiology and Molecular Biophysics)		
04:30 - 06:30 PM	Poster Presentation (Moderator, Dr. Lan Guan, Co-Director of CMPR, Professor, Cell Physiology & Molecular Biophysics)		
06:30 - 09:00 PM	Reception University Center 1st Floor Lobby		



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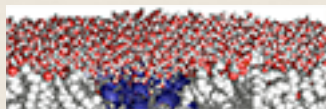
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SCIENTIFIC PROGRAM

Day - 2 Morning Presentation, Announcement for the Best Poster Presentation Award, and Closing Remarks

Time	Speaker	Affiliation	Presentation Title
08:50 - 09:00 AM	<p>CMPR Highlights Dr. Leslie Shen, Associate Dean for Research, SOM Professor, Dept. Pathology; Founding Director, Center of Excellence for Integrative Health Clinical Professor, Laboratory Sciences and Primary Care, School of Health Professions</p>		
09:00 - 09:05 AM	<p>Ion Channels and Structure Biology (Moderated by Dr Hongjun Liang, Professor (Cell Physiology and Molecular Biophysics, TTUHSC)</p>		
09:05 - 09:25 AM	Luis Cuello Professor	Cell Physiology & Molecular Biophysics, TTUHSC	Large-scale production of functional human voltage-gated proton channels (hHv1)
09:25 - 09:45 AM	Benjamin Wylie Assoc. Professor	Chemistry & Biochemistry, TTU	Regulation and activation of a human chemokine receptor by bilayer cholesterol and native chemokines
09:45 - 10:05 AM	Bryan Sutton Professor	Cell Physiology & Molecular Biophysics, TTUHSC	From mystery to mechanism: solving the enzymatic puzzle of the DNases
10:05 - 10:40 AM	- Break (35 min) -		
10:40- 11:00 AM	Michaela Jansen Professor	Cell Physiology & Molecular Biophysics, TTUHSC	Molecular conspiracy: how RIC-3 shapes 5-HT3A function
11:00 - 11:20 AM	Josh Lawrence Assoc. Professor	Pharmacology and Neuroscience and Garrison Institute on Aging, TTUHSC	KCNIP1: a potential cellular mechanism underlying cellular Hyperexcitability in Alzheimer's Disease
11:20 - 11:30	<p>Outstanding Poster Presentation Award Dr. Michael Wiener, Co-Director of CMPR</p>		
11:30	<p>Closing Remarks Darrin D'Agostino, DO, MPH, MBA Executive Vice President and Provost</p>		
	- Lunch -		



CMPR XVI Annual Symposium

3:20 - 4:30 pm
Thursday, April 3rd, 2025

Lightning Talk

AEC

	Academic Ranking	Last Name	First Name	Title	School	Lab
1	PhD Student	Dahal	Arun	Investigating the Role of the PAA Operon in Erythromycin Potentiation by an Efflux Pump Inhibitor in Three Major RND Efflux Pump-Deficient <i>Acinetobacter baumannii</i>	U. Oklahoma	Zgurskaya
2	PhD Student	Iwuala	Loveth	BamA Mutations Potentiate Antibiotics Activity in <i>Escherichia coli</i>	U. Oklahoma	Zgurskaya
3	PhD Student	Miyazaki	Kanae	Paip1 negatively regulates cap-dependent translation	Kindai U. Japan	Karamyshev
4	PhD Student	Orobets	Kseniia	Pathological RAPP Activation is a Molecular Basis of Frontotemporal Lobar Degeneration	TTUHSC	Karamyshev
5	PhD Student	Podliska	Jeshua	Lipid Metal-Organic Framework Hollow Colloidosomes	TTU	Ravanfar
6	PhD Student	Rashidniyaghi	Ehsan	Organic Frameworks for Protein Entrapment: Growth Dynamics and Stabilization Mechanisms	TTU	Ravanfar
7	PhD Student	Siddique	Bilal	A comparative study of common anesthetics on lipid membrane fluidity	TTU	Huang/Bickel
8	PhD Student	Mehta	Yash	Combining Targeted Proteomics and Cellular Modeling to Understand the Impact of Glucose Transporter 1 Deficiency Syndrome Mutations on Cellular Metabolism	TTUHSC	Al-Ahmad
9	Postdoc	Sharif	Syeda Ridita	Tag First, Decide Later: Membrane Protein Quality Control	TTUHSC	Mariappan
10	PhD Student	Skains	Megan	Exploring the Thermodynamics and Structural Characterizations of Potassium Channels	TTUHSC	Cuello
11	PhD Candidate	Tran	Nghi	Unraveling P-glycoprotein Transmembrane Helix 1: A Snapshots of Tricyclic Peptide (Ala-Ala-Cys) Translocation Pathway	TTUHSC	Urbatsch
12	PhD Candidate	Matyas	Brent	Determining the effects of the HER2 S310F mutant on EGFR/HER2 activation and dimerization using Flow Cytometry and PIE-FCCS	TTU	Smith
13	Master Student	Khanna	Nishtha	KCNIP1 at the convergence of nutritional deficiency, ion channel dysfunction, and Alzheimer's Disease	TTUHSC	Lawrence
14	Postdoc	Thoduvayil	Sikha	Decoding the Architecture of a stress Sensing Complex	TTUHSC	Mariappan



4:30 - 6:30 pm, Thur, April 3rd, 2025

Poster presentation

AEC

Poster ID	Academic Ranking	Last Name	First Name	Title	School	Lab	Lightning Talk
1	Master Student	Khanna	Nishtha	KCNIP1 at the convergence of nutritional deficiency, ion channel dysfunction, and Alzheimer's Disease	TTUHSC	Lawrence Lab	*
2	PhD Student	Dahal	Arun	Investigating the Role of the PAA Operon in Erythromycin Potentiation by an Efflux Pump Inhibitor in Three Major RND Efflux Pump-Deficient Acinetobacter baumannii	U. Oklahoma	Zgurskaya Lab	*
3	PhD Student	Ishola	Olamide	The soluble form of HIV-1 Vpu protein interacts with calmodulin in a Ca ²⁺ -dependent manner	TTU	Georgieva Lab	
4	PhD Student	Iwuala	Loveth	BamA Mutations Potentiate Antibiotics Activity in Escherichia coli	U. Oklahoma	Zgurskaya Lab	*
5	PhD Student	Miyazaki	Kanae	Paip1 negatively regulates cap-dependent translation	Kindai Univ., Japan	Karamyshev Lab	*
6	PhD Student	Ogunbowale	Adeyemi	Conformations of HCV core protein in soluble and lipid-bound state: toward understanding core protein function in virus assembly and budding	TTU	Georgieva Lab	
7	PhD Student	Mehta	Yash	Combining Targeted Proteomics and Cellular Modeling to Understand the Impact of Glucose Transporter 1 Deficiency Syndrome Mutations on Cellular Metabolism	TTUHSC	Al-Ahmad	*
8	PhD Student	Orobets	Kseniia	Pathological RAPP Activation is a Molecular Basis of Frontotemporal Lobar Degeneration	TTUHSC	Karamyshev Lab	*
9	PhD Student	Podliska	Jeshua	Lipid Metal-Organic Framework Hollow Colloidosomes	TTU	Ravanfar Lab	*
10	PhD Student	Rashidniyaghi	Ehsan	Organic Frameworks for Protein Entrapment: Growth Dynamics and Stabilization Mechanisms	TTU	Ravanfar Lab	*
11	PhD Student	Seghiri	Mohamed	PIE-FCCS Model for Cell Membrane Protein Heteromer Stoichiometry	TTU	Smith Lab	
12	PhD Student	Siddique	Bilal	A comparative study of common anesthetics on lipid membrane fluidity	TTU	Huang/Bickel	*
13	PhD Student	Skains	Megan	Exploring the Thermodynamics and Structural Characterizations of Potassium Channels	TTUHSC	Cuello Lab	*
14	PhD Candidate	Ayoola Ashiru	Mojeed	CXCR4 HETEROMERS AND ITS DOWNSTREAM SIGNALING IN LIVE CELLS	TTU	Smith Lab	
15	PhD Candidate	Ghahremani	Mahboubeh	Investigating EGFR-ICD Regulation by Anionic Lipids Using Supported Lipid Bilayers and PIE-FCCS	TTU	Smith Lab	
16	PhD Candidate	Matyas	Brent	Determining the effects of the HER2 S310F mutant on EGFR/HER2 activation and dimerization using Flow Cytometry and PIE-FCCS	TTU	Smith Lab	*
17	PhD Candidate	Tran	Nghi N.B. Tran	Unraveling P-glycoprotein Transmembrane Helix 1: A Snapshots of Tricyclic Peptide (Ala-Ala-Cys) Translocation Pathway	TTUHSC	Urbatsch Lab	*
18	Postdoc	Sarayli-Belirgen	Nermina	Endoplasmic Reticulum Chaperone RIC-3 Interacts with Serotonin Type 3A Receptor in Neuronal Mammalian Cells	TTUHSC	Jansen Lab	
19	Postdoc	Sharif	Syeda Ridita	Tag First, Decide Later: Membrane Protein Quality Control	TTUHSC	Mariappan Lab	*
20	Postdoc	Thoduvayil	Sikha	Decoding the Architecture of a stress Sensing Complex	TTUHSC	Mariappan Lab	*
21	Res. Asst. Prof.	Do	Quynh Hoa	Effects RIC-3 structural determinants on the functional surface expression of 5-HT _{3A} and α 7 nACh receptors	TTUHSC	Jansen Lab	
22	Res. Asst. Prof.	Parameswaran	Hariharan	Structural and functional characterizations of the human major facilitator superfamilies transporter D10	TTUHSC	Guan Lab	
23	Res. Assoc.	Stanfield	Samantha	Utilizing MelBst to Evaluate Novel Multiple Pendant-Bearing Glucosides (MPGs)	TTUHSC	Guan Lab	
24	MRT III	Gaines	Jemma Carrollin	Overexpression and Early Characterization of Kv1.6: An Understudied Human Voltage-Gated Potassium Channel	TTUHSC	Cuello Lab	
25	MRT III	Valladares	Mariana	Heterologous bacterial expression of properly folded and fully functional human potassium channel Kv1.3 in E. coli cells	TTUHSC	Cuello Lab	
26	MRT IV	Mangold	Devin	P-glycoprotein: New Allosteric Binding Site	TTUHSC	Urbatsch Lab	