



## 2025 Frontiers in Membrane Protein Structural Biology and Drug Discovery

### Innovation Schedule

March 28-30, 2025

<b>28<sup>th</sup> March, Friday</b>	
11:00 a.m. – 02:00 p.m.	Registration and Poster set-up
02:20 p.m. – 02:30 p.m.	Welcoming remarks: Brian KOBILKA
<b>Session 1, Frontiers in Membrane Protein structures and drug discovery</b>	
Host: Aashish MANGLIK	
02:30 p.m. – 03:00 p.m.	<b>Nieng YAN</b> , Shenzhen Medical Academy of Research and Translation/ Tsinghua University From sugar transporters to glycoconjugated ion channels
03:00 p.m. – 03:30 p.m.	<b>Yulong LI</b> , Peking University Orphan GPCRs, Chronic Liver Diseases and Itch: from bench to bedside
03:30 p.m. – 04:00 p.m.	<i>Group Photo &amp; Break</i>
04:00 p.m. – 04:30 p.m.	<b>Eric XU</b> , Shanghai Institute of Materia Medica, CAS Structural Basis of PTH1R- $\beta$ -Arrestin Core Engagement Reveals Design Principles for G Protein-Biased Therapeutics
04:30 p.m. – 05:00 p.m.	<b>Niu HUANG</b> , National Institute of Biological Sciences, Beijing Integrating HPC and AI: A New Paradigm for Predicting Protein-ligand Binding Interactions
05:00 p.m. – 05:30 p.m.	<b>Jinpeng SUN</b> , Shandong University Identification and characterization of ceramide, hearing and balance receptors



**29<sup>th</sup> March, Saturday**

**Session 2, Signaling Mechanisms and functional modulation of GPCRs**

Host: Xiangyu LIU

09:00 a.m. – 09:30 a.m.	<b>Andrew KRUSE</b> , Harvard University Single-domain antibody fragments as tools to manipulate G protein-coupled receptor signaling
09:30 a.m. – 10:00 a.m.	<b>Sanduo ZHENG</b> , National Institute of Biological Sciences, Beijing Unconventional regulation of class A GPCR signaling by endogenous lipids and dimerization
10:00 a.m. – 10:30 a.m.	<b>Yuanzheng HE</b> , Harbin Institute of Technology Structural Insights into WNT Signaling Activation
10:30 a.m. – 11:00 a.m.	<i>Break</i>
11:00 a.m. – 11:30 a.m.	<b>Daniel HILGER</b> , Philipps University of Marburg Development and characterization of G protein-specific inhibitors
11:30 a.m. – 12:00 p.m.	<b>Guodong HE</b> , Tsinghua University Fine-tuning the Biased Agonism of G Protein-Coupled Receptor
12:00 p.m. – 02:00 p.m.	<i>Lunch &amp; Break</i>

**Session 3, Innovative Methodologies in Dynamics and Drug Discovery for membrane proteins**

Host: Jiafei MAO

02:00 p.m. – 02:30 p.m.	<b>Peter HILDEBRAND</b> , University of Leipzig Mechanistic insights into G-protein coupling with an agonist-bound G-protein-coupled receptor
02:30 p.m. – 03:00 p.m.	<b>Chunlai CHEN</b> , Tsinghua University Conformational dynamics of the $\mu$ -opioid receptor revealed by single-molecule FRET
03:00 p.m. – 04:30 p.m.	<i>Poster Session &amp; Break</i>
04:30 p.m. – 05:00 p.m.	<b>Peilong LU</b> , Westlake University De novo design of functional transmembrane proteins
05:00 p.m. – 05:30 p.m.	<b>Asuka INOUE</b> , Tohoku University Non-canonical activation of heterotrimeric G proteins by the N-terminal helix rotation



**30<sup>th</sup> March, Sunday**

**Session 4, Molecular Pharmacology of Membrane Proteins**

Host: Daniel HILGER

09:00 a.m. – 09:30 a.m.	<b>Yigong SHI</b> , Westlake University/ Tsinghua University TBD
09:30 a.m. – 10:00 a.m.	<b>Qiang SU</b> , Shenzhen Medical Academy of Research and Translation Structural insights into the complete high-affinity IgE receptor (FcεRI) and implications for allergic responses
10:00 a.m. – 10:30 a.m.	<b>Goran STJEPANOVIC</b> , CUHK-Shenzhen Molecular Mechanisms of Membrane Dynamics in Autophagy
10:30 a.m. – 10:50 a.m.	<i>Break</i>
10:50 a.m. – 11:20 a.m.	<b>Ka Young CHUNG</b> , Sungkyunkwan University Functional Characterization of the $\alpha$ -Helical Domain of Gas: Discovery of MAGE D2 as a Novel Binding Partner
11:20 a.m. – 11:50 a.m.	<b>Chuangye YAN</b> , Tsinghua University Molecular basis of human norepinephrine transporter reuptake and inhibition
11:50 a.m. – 12:20 p.m.	<b>Harvey F. LODISH</b> , Massachusetts Institute of Technology Converting laboratory discoveries into human therapeutics: A Personal History
12:20 p.m. – 02:00 p.m.	<i>Lunch &amp; Break</i>

**Session 5, Challenges and New Opportunities in GPCR drug innovation**

Host: Sanduo ZHENG

02:00 p.m. – 02:30 p.m.	<b>Aashish MANGLIK</b> , University of California, San Francisco Seeing Scents to Understand Our Sense of Smell
02:30 p.m. – 03:00 p.m.	<b>Hideaki KATO</b> , The University of Tokyo Structural Changes in the Neurotensin Receptor 1–Gi Protein Complex Captured by Time-Resolved Cryo-EM Analysis
03:00 p.m. – 03:30 p.m.	<i>Break</i>



03:30 p.m. – 04:00 p.m.	<b>Yang DU</b> , CUHK-Shenzhen Structure and drug discovery of GPCRs in the nervous system
04:00 p.m. – 04:30 p.m.	<b>Xiangyu LIU</b> , Tsinghua University A GPCR- G protein - $\beta$ -arrestin megacomplex mediated by an allosteric modulator
04:30 p.m. – 05:00 p.m.	<b>Brian KOBILKA</b> , Stanford University The role of protein dynamics in G protein coupled receptor signaling
05:00 p.m. – 05:15 p.m.	Closing remarks: Yigong SHI