

## PROGRAM (IPS2023)

<b>DAY 1</b> (Sunday, 25 June 2023)		
18:00	Welcome dinner (Canton Paradise @ Star Vista)	
<b>DAY 2</b> (Monday, 26 June 2023)		
08:30 – 09:30	Registration	
09:30 – 09:45	Welcome address <b>Yu Hao</b> ( <i>Head, Department of Biological Sciences, NUS</i> )	
<b>Keynote lecture 1</b> (Chaired by Anthony O'Donoghue)		
09:45 – 10:45	<b>Bob Lazarus</b> ( <i>Genentech Inc.</i> )	
10:45 – 11:15	Coffee break	
<b>Session 1 Protein quality control by proteases</b> (Chaired by Antoine Dufour)		
11:15 – 11:45	C-degron pathways guard the fidelity of proteome <b>Hsueh-Chi Sherry Yen</b> ( <i>Academia Sinica, Taipei</i> )	
11:45 – 12:15	Molecular mechanisms that respond to proteasome dysfunction <b>Shigeo Murata</b> ( <i>University of Tokyo</i> )	
12:15 – 12:30	Dipeptidyl peptidase 9 (DPP9) and repair of DNA double-strand breaks <b>Ruth Geiss-Friedlander</b> ( <i>Albert-Ludwigs-Universität Freiburg</i> )	
12.30 – 13:45	Lunch and poster viewing	
<b>Session 2 Proteases in immunity and cell death</b> (Chaired by Bob Lazarus)		
13:45 – 14:15	Leave no substrates behind: The viral protease cellular d'état in Covid-19 <b>Chris Overall</b> ( <i>University of British Columbia</i> )	
14:15 – 14:45	Transglutaminase 2: A key player in TP53-mediated autophagy to halt oncogenic transformation <b>Koji Itahana</b> ( <i>Duke-NUS Medical School, NUS</i> )	
14:45 – 15:00	Missing link between genetics and disease in hereditary $\alpha$ -tryptasemia: Biochemical and biophysical studies reveal that catalytically inactive $\alpha$ -tryptase stabilizes and allosterically activates $\alpha/\beta$ -heterotetramers <b>Henry Maun</b> ( <i>Genentech Inc.</i> )	

15:00 – 15:15	Tryptase $\beta$ regulation of joint lubrication and inflammation via proteoglycan-4 in osteoarthritis <b>Antoine Dufour</b> ( <i>University of Calgary</i> )	
15:15 – 15:30	Mechanism of inhibition of KLK7 by an anti-KLK7 Fab and the discovery of previously unidentified KLK7 substrates <b>Swapnil Ghodge</b> ( <i>Genentech Inc.</i> )	
15:30 – 16:00	Flash talks (5 min each)	
16:00 – 18:00	Poster session 1	

<b>DAY 3</b> (Tuesday, 27 June 2023)		
<b>Keynote lecture 2</b> (Chaired by Eiichiro Nishi)		
09:00 – 10:00	The molecular mechanism of horseshoe crab coagulation cascade through autocatalytic activation on lipopolysaccharide (LPS), using recombinant protease zymogens <b>Shun-Ichiro Kawabata</b> ( <i>Kyushu University</i> )	
10:00 – 10:30	Coffee break	
<b>Session 3 Proteases in cancer and diseases</b> (Chaired by Shu-Ichiro Kawabata)		
10:30 – 11:00	<b>Galia Blum</b> ( <i>Hebrew University of Jerusalem</i> )	
11:00 – 11:30	<b>Irina Bezsonova</b> ( <i>University of Connecticut Health</i> )	
11:30 – 11:45	Tick saliva-derived direct thrombin inhibitors: Advancing peri-procedural anticoagulant for percutaneous coronary intervention <b>Koh Cho Yeow</b> ( <i>National University of Singapore</i> )	
11:45 – 12:00	FAIMS-enabled N terminomics highlights novel roles for the “lysosomal” cysteine protease legumain <b>Laura Edgington-Mitchell</b> ( <i>University of Melbourne</i> )	
12:00 – 13:00	Lunch and poster viewing	
<b>Session 4 Intramembrane/membrane-associated proteases</b> (Chaired by Ruth Geiss-Friedlander)		
13:00 – 13:30	<b>Joanne Lemieux</b> ( <i>University of Alberta</i> )	
13:30 – 14:00	$\gamma$ -Secretase exosites as targets for substrate-selective inhibition of intramembrane proteolysis <b>Akio Fukumori</b> ( <i>Osaka Medical and Pharmaceutical University</i> )	
14:00 – 14:15	Mechanism and inhibition of rhomboid intramembrane proteases <b>Kvido Strisovsky</b> ( <i>Academy of Sciences of the Czech Republic</i> )	
14:15 – 14:30	Proteomic approaches to membrane protein processing <b>Shirakabe Kyoko</b> ( <i>Ritsumeikan University</i> )	
14:30 – 15:00	Coffee break	
<b>Session 5 Calpain and cysteine proteases</b> (Chaired by Kvido Strisovsky)		
15:00 – 15:30	Calpain-3 structure and its role in limb-girdle muscular dystrophy R1 <b>Peter Davis</b> ( <i>Queen’s University</i> )	

15:30 – 16:00	Calpain and cardiometabolic disorders <b>Takuro Miyazaki</b> ( <i>Showa University School of Medicine</i> )	
16:00 – 16:15	The Lysosomal protease cathepsin B degrades and inactivates the secreted inhibitor of invasive breast cancer growth CREG1 <b>Thomas Reinheckel</b> ( <i>University of Freiburg</i> )	
16:15 – 16:30	<b>Franklin Zhong</b> ( <i>Nanyang Technological University</i> )	
16:30 – 17:30	IPS member Business Meeting / Election	

**DAY 4** (Wednesday 28 June 2023)**Keynote lecture 3***(Chaired by Jeanne Hardy)*

09:00 – 10:00

**Jay Fox** (*University of Virginia*)

10:00 – 10:30

Coffee break

**Session 6 Proteases as venoms and toxins***(Chaired by Jay Fox)*

10:30 – 11:00

Protease signaling in skin inflammation and repair  
**Ulrich auf dem Keller** (*Technical University of Denmark*)

11:00 – 11:30

Habu snake venomomics reveals unique venom components related to the proteolysis enzymes and inhibitors  
**Tomohisa Ogawa** (*Tohoku University*)

11:30 – 11:45

Proteomic analysis of *in vivo* proteolysis occurring in the envenomation by a snake venom, in a murine model  
**Alison Chaves** (*Instituto Butantan*)

11:45 – 12:00

Haemathrin a thrombin inhibitor of *Haemaphysalis bispinosa* is proteolytically processed by thrombin for loss of function  
**Robin Doley** (*Tezpur University*)

12:00 – 13:00

Lunch and poster viewing

**Session 7 Proteases in pathogens and viruses***(Chaired by Ulrich auf dem Keller)*

13:00 – 13:30

Tick serine and cysteine protease inhibitors at the tick-host interface  
**Michail Kotsyfakis** (*Institute of Parasitology, Biology Centre CAS*)

13:30 – 14:00

Dynamics and catalysis: The mechanism of action of the *Plasmodium* M17 aminopeptidases  
**Sheena McGowan** (*Monash University*)

14:00 – 14:30

Activity profiling of viral proteases from SARS-CoV-2  
**Marcin Drag** (*Wroclaw University of Technology*)

14:30 – 14:45

**Jeanne Hardy** (*University of Massachusetts Amherst*)

14:45 – 15:00

Mining novel host defense antimicrobial peptides from the pro-domain of human furin  
**Surajit Bhattacharyya** (*Nanyang Technological University*)

15:00 – 15:30

Flash talks (5 min each)

15:30 – 17:30

Poster session 2

<b>Excursion</b>		
18:00 – Late	Visit our vendors websites for more details.	

**DAY 5** (Thursday, 29 June 2023)**Keynote lecture 4 (Lifetime achievement lecture)***(Chaired by Joanne Lemieux)*

09:00 – 10:00

The pluripotent proprotein-convertases: From fundamental biology to disease treatments, including cardiovascular pathologies, viral infections, liver steatosis and cancer / metastasis  
**Nabil Seidah** (*McGill University*)

10:00 – 10:30

Coffee break

**Session 8 Targeted protein degradation by proteases***(Chaired by Nabil Seidah)*

10:30 – 11:00

Chemical probes for proteases  
**Edward Tate** (*Imperial College London*)

11:00 – 11:15

Mapping N and C termini in 4D: Chemoenzymatic tools to map the dynamic spatial organization of proteolytic signaling pathways  
**Amy Weeks** (*University of Wisconsin-Madison*)

11:15 – 11:30

BACE1 and PSEN1: Two unusual aspartyl proteases involved in proteolytic processing of  $\beta$ -APP in platelets of chronic kidney disease with cognitive dysfunction like Alzheimer's disease  
**P. Venkataraman** (*SRM Institute of Science and Technology*)

11:30 – 12:30

Lunch and poster viewing

**Session 9 Proteases in cell signaling***(Chaired by Kyoko Shirakabe)*

12:30 – 13:00

Exploring proteolytic approaches for novel therapeutic and diagnostic strategies for Alzheimer disease  
**Taisuke Tomita** (*University of Tokyo*)

13:00 – 13:30

Macrocyclic inhibitors of transmembrane serine proteases  
**James Janetka** (*Washington University in St. Louis*)

13:30 – 13:45

Role of a multifunctional peptidase nardilysin in homeostasis  
**Eiichiro Nishi** (*Shiga University of Medical Science*)

13:45 – 14:00

The role of SUMOylation pathway in neural stem cell reactivation and brain development  
**Gao Yang** (*Duke-NUS Medical School, National University of Singapore*)

14:00 – 14:30

Coffee break

**Session 10 Structural biology of proteases***(Chaired by Henry, Yu Keung Mok)*

14:30 – 15:00	Target the NS2B-NS3 viral protease for antiviral development against dengue and ZIKA viruses <b>Luo Dahai</b> ( <i>Nanyang Technological University</i> )	
15:00 – 15:30	Structure and substrate recognition mechanism of S46 peptidases <b>Nobutada Tanaka</b> ( <i>Kitasato University</i> )	
15:30 – 15:45	Optimization of PPI to enhance specificity of human Stefin-A against Falcipain-2 from the <i>Plasmodium falciparum</i> 3D7 strain: A structure-based approach <b>Sampa Biswas</b> (Saha Institute of Nuclear Physics)	
15:45 – 16:00	Molecular regulation of asparagine endopeptidase (AEP) in neurodegenerative diseases <b>Keqiang Ye</b> ( <i>Shenzhen Institute of Advanced Technology</i> )	
16:00 – 16:30	IPS Young Investigator awards, poster award, travel awards and announcement and presentation of the venue for IPS2025 <b>Anthony O'Donoghue</b> ( <i>Chairman of IPS</i> )	
16:30 – 16:45	Closing remark <b>Henry, Yu Keung Mok</b> ( <i>Chair of Organizing Committee, IPS2023</i> )	
18:00 – Late	Banquet dinner (NUSS ball room)	
<b>DAY 6</b> (Friday, 30 June 2023)		
<b>Departure</b>		
9.00 am	Good-bye and have a nice trip back home. See you at IPS2025.	