Proteomics in Cell Biology of Human Diseases

Course Programme
## PROGRAMME

### WEEK ONE:

#### Wednesday, 14 March 2018

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 – 9:00</td>
<td>Welcome and Introduction to the Course</td>
<td>HRI-S7</td>
</tr>
<tr>
<td></td>
<td>Course Directors</td>
<td></td>
</tr>
<tr>
<td>9:00 – 11:30</td>
<td>Students’ self-presentations</td>
<td>HRI-S7</td>
</tr>
<tr>
<td>11:30 – 14:00</td>
<td>Visit to TARA Ocean</td>
<td></td>
</tr>
<tr>
<td>15:00 – 15:30</td>
<td>Introduction to the Practical Sessions</td>
<td>HRI-S7</td>
</tr>
<tr>
<td></td>
<td>Sumana Sanyal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HKU – Pasteur Research Pole, Hong Kong SAR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rakesh Sharma</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The University of Hong Kong, Hong Kong SAR</td>
<td></td>
</tr>
<tr>
<td>15:30 – 17:30</td>
<td><strong>W1: Practicum</strong></td>
<td>HRI-S7</td>
</tr>
<tr>
<td></td>
<td>Seed HeLa cells producing virus-like particles of dengue or Zika virus for use the next day</td>
<td></td>
</tr>
<tr>
<td>17:30 – 18:00</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>18:00 – 19:00</td>
<td>Special Lecture: The Tara Oceans Project - Eco-Systems Biology at Planetary Scale</td>
<td>HRI-S7</td>
</tr>
<tr>
<td></td>
<td>Chris Bowler</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ecole Normale Superieure, Paris, France</td>
<td></td>
</tr>
<tr>
<td>19:00 –</td>
<td>Pizza Party</td>
<td>HRI-7Fl</td>
</tr>
</tbody>
</table>

#### Thursday, 15 March 2018

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 – 10:30</td>
<td><strong>L1:</strong> Mass spectrometry: Ionization techniques and their new developments</td>
<td>HRI-S7</td>
</tr>
<tr>
<td></td>
<td>Zhongping Yao</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Hong Kong Polytechnic University, Hong Kong SAR</td>
<td></td>
</tr>
<tr>
<td>10:30 – 11:00</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>11:00 – 13:00</td>
<td><strong>L2:</strong> Chemoproteomics in the ubiquitin system for anti-cancer therapy</td>
<td>HRI-S7</td>
</tr>
<tr>
<td></td>
<td>Benedikt Kessler</td>
<td></td>
</tr>
<tr>
<td></td>
<td>University of Oxford, UK</td>
<td></td>
</tr>
<tr>
<td>13:00 – 14:00</td>
<td>Lunch</td>
<td></td>
</tr>
</tbody>
</table>
Thursday, 15 March 2018 .......... cont’d

14:00 – 16:00  **L3: Role of ubiquitin-like proteins in host-pathogen interactions**  
*HRI-S7*  
*Lilliana Radoshevich*  
Institut Pasteur, France

16:00 – 16:30  **Break**

16:30 – 19:00  **W2: Practicum**  
Trypsin digest of lysates for peptide generation Introduction to software analysis

Friday, 16 March 2018

8:30 – 10:30  **L4: Unearthing the secrets of T cell signaling by MS-based proteomics**  
*HRI-S7*  
*Oreste Acuto*  
University of Oxford, UK

10:30 – 11:00  **Break**

11:00 – 13:00  **L5: Proteomic approaches to understand ER quality control and organelle biogenesis**  
*HRI-S7*  
*Pedro Carvalho*  
University of Oxford, UK

13:00 – 14:00  **Lunch**

14:00 – 16:00  **L6: Applications of proteomics to biomarker discovery for disease diagnoses and prognoses**  
*HRI-S7*  
*Terence Chuen-Wai Poon*  
University of Macau, Macau

16:00 – 16:30  **Break**

16:30 – 19:00  **W3: Practicum**  
Enrichment on TiO\textsubscript{2} beads; elution; silver staining Software analyses

Saturday, 17 March 2018

10:00 – 14:00  **W4: Practicum**  
Immunoblotting for VLP-secretion from cells Sample preparation and practical demonstration to the use of mass spectrometers (core facility)
WEEK TWO:

Monday, 19 March 2018

9:00 – 11:00  L7: Contribution of the stroma secretome to tumour invasion  
Sara Zanivan  
Cancer Research UK Beatson Institute, UK

11:30 – 11:30  Break

11:30 – 12:30  L8: Proteomic methods to study the extracellular matrix composition of normal tissues and tumors  
Alexandra Naba  
University of Illinois at Chicago, USA

12:30 – 13:30  Lunch

13:30 – 14:30  L9: Application of "matrisomics" to human cancer  
Alexandra Naba  
University of Illinois at Chicago, USA

14:30 – 15:00  Break

15:00 –  W5: Practicum  
Analyses of mass spectra using Proteome Discoverer/Scaffold  
Introduction to Mascot database search for peptide identification

Tuesday, 20 March 2018

9:00 – 11:00  L10: Interrogating the Cell Biology of Infection and Immunity with Alpaca Nanobodies  
Florian Schmidt  
University of Bonn, Germany

11:30 – 11:30  Break

11:30 – 12:30  L11: Proteomic and genetic approaches to viral evasion (Part 1)  
Paul Lehner  
Cambridge Institute for Medical Research, UK

12:30 – 13:30  Lunch

13:30 – 14:30  L11: Proteomic and genetic approaches to viral evasion (Part 2)  
Paul Lehner  
Cambridge Institute for Medical Research, UK

14:30 – 15:00  Break

15:00 –  W6: Practicum  
Data analysis  
Identification of phosphorylation sites using PhosphoRS
Wednesday, 21 March 2018

9:00 – 11:00  **L12**: Quantitative multiplexed proteomics to investigate host-pathogen interactions
*Michael Weekes*
Cambridge Institute for Medical Research, UK

11:30 – 11:30  **Break**

11:30 – 12:30  **L13**: Chemical proteomic approaches to studying protein lipidation (Part I)
*Remigiusz Serwa*
Imperial College London, UK

12:30 – 13:30  **Lunch**

13:30 – 14:30  **L13**: Chemical proteomic approaches to studying protein lipidation (Part 2)
*Remigiusz Serwa*
Imperial College London, UK

14:30 – 15:00  **Break**

15:00 – 17:00  **W7**: Practicum
Data analysis
Network analyses using String, Perseus and Cytoscape

Thursday, 22 March 2018

9:30 – 11:30  **L14**: Functional strategies to isolate ubiquitylated proteins during flavivirus infections
*Sumana Sanyal*
HKU-Pasteur Research Pole, Hong Kong SAR

11:30 – 13:00  **Lunch**

13:00 – 15:00  **W8**: Practicum
Exam preparation

Friday, 23 March 2018

All day  Oral Exam

19:00  **Award Dinner**
Tak Kee Chiu Chow Restaurant
Shop G, Belcher’s Street, Kennedy Town

Remarks:  L = Lecture  W = Workshop
Course Information

Date and Venue
The Course will be held from Wednesday 14 March 2018 to Friday 23 March 2018 in Room 7-03, 7th Floor, HKJC Building for Interdisciplinary Research, 5 Sassoon Road

How to get there
If you need to take public transportation (including, bus, minibus and MTR) in Hong Kong, Octopus Card is very convenient. It can be purchased at “Customer Service” center at the Airport Express and any MTR station. It is refundable but will incur a HKD$ 9 handling charge if return within 90 days. Please visit the following webpage for details:

The HKJCB for Interdisciplinary Research can be easily reached by:
From Airport:
- Taxis, which are plentiful throughout Hong Kong and are all metered, relatively cheap, air-conditioned and clean.
- City Bus A10 (Please stop at “Queen Mary Hospital”, then cross the street through the walkway bridge. Walk downhill about 5 min along Sassoon Road.

From Central
- Green line minibus
  No. 8 departs from Central – Exchange Square
  No.28 departs from Causeway Bay
Please wave you hand when you see the minibus and tell minibus driver where you would like to stop. Please note that minibus at Hong Kong does not stop if no one gets off or gets on.

- Public bus routes number 4, 7, 37, 40, 40M, 46X, 71, 90B, 91, 94, 970, 970X and 973 to stop at “Queen Mary Hospital”, then cross the street through the walkway bridge. Walk downhill about 5 min along Sassoon Road. You are suggested to not take 970, 970X and 973 if there is other buses available since it is more expensive.


From Kennedy Town MTR Station
- Green line minibus
  No. 23 & 23M get off at Queen Mary’s Hospital

From Robert Black College/Main Campus
Get onto Pokfulam Road from Haking Wong Building (MRT exit A1/A2)
- Green line minibus  No. 8 & 28 get off at 5 Sassoon Road (in front of the building)
  No. 22 & 22M get off at Queen Mary’s Hospital
- Public bus routes number 4, 7, 37, 40, 40M, 71, 90B, 91, 94, 970, 970X and 973.
  Get off at Queen Mary’s Hospital

Official Language
The official language of the Course is English

Badges
Participants will be provided with badges which should be worn at all times for admission to the meeting venues.

Arrange for Adverse Weather Conditions
When Tropical Storm Warning Signal No. 8 (or a higher number) or the Rainstorm Black Warning Signal is hoisted, the following arrangements will apply:

(a) For day not yet started
   If either of the warnings is hoisted or in force at or after 6:00 am
   All activities and talks before 2:00 pm will be cancelled automatically.
   If either of the warnings is hoisted or in force at or after 11:00 am
   All activities and talks commencing between 2:00 pm and 6:00 pm will be cancelled automatically.

(b) For day already started
   If Storm Warning Signal No. 8 is hoisted
   All activities and talks will be suspended immediately.
   If Black Rainstorm Warning Signal is hoisted
   All activities and talks, except those held outdoors, will continue.

   For outdoor activities and talks, the responsible staff members on the spot should suspend the activities immediately, ensure that all students are taken to a safe place, and remain there until it is safe for them to return home.