

# Invitation

## 2020 Integrative Structural Biology Online School -Integrating Mass Spec, Cryo-EM and Modeling to Determine Protein Structures

Solving the structure of large dynamic complexes often requires integrating several complementary techniques, such as biomolecular mass spectrometry (MS) and cryo-electron microscopy (cryo-EM) –an approach known as integrative structural biology. **Utrecht University, University of Science and Technology of China, and Thermo Fisher Scientific cordially invite you to join the 2020 Integrative Structural Biology Online School.**

The Integrative Structural Biology School aims to create an opportunity to learn about the synergies between electron microscopy, mass spectrometry and modelling in structural biology, next to hands-on experience with cross-linking and integrative modelling. Through this school, you can learn:

- Learn how screening of your samples by native mass spectrometry can help accelerate the time to obtain 3D structures or how integrative modelling can increase the fidelity of your structure.
- Benefit from experts and take home the hands-on experience and best practices for cross-linking and integrative modelling.
- Take the opportunity to network with other structural biologists across international borders.
- Stay up-to-date on latest Thermo Scientific instrument developments and methods.

### Date:

All the course will be held from 8pm to 9pm (GMT +8) /1pm to 2pm in CEST (GMT +1)/9am to 10am in EST (GMT-5)

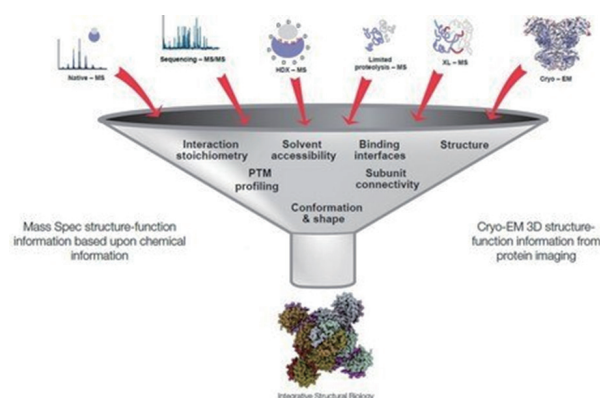
**Cryo-EM Basics:** Nov 10-12

**Mass Spec Basics:** Nov 17-19

**Technology Innovation and Scientific Talks:** Nov 24-26

**Integrative Modelling:** Dec2-4

**Venue:** Online. Webcast link will be sent via email before each course.



Schematic of the integrative structural biology process including mass spec and cryo-EM data.



Universiteit Utrecht



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## The schedule for the integrative structure biology winter school 2020

Note	All the course will be held from 8pm to 9pm (GMT +8) /1pm to 2pm in CEST (GMT +1)/9am to 10am in EST (GMT-5)
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	Title	Speaker
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### Week1 Cryo-EM

Nov. 10 <sup>th</sup>	The electron microscope: a remarkable versatile instrument	Prof. Dr. Stuart Howes
Nov. 11 <sup>th</sup>	In situ structural biology: cryo-electron tomography	Prof. Dr. Tzviya Zeev-Ben-Mordehai
Nov. 12 <sup>th</sup>	The resolution revolution: cryoEM single particle analysis	Prof. Dr. Friedrich Förster

### Week2 Mass Spec

Nov. 17 <sup>th</sup>	Introduction into mass spectrometry	Prof. Dr. Richard Scheltema
Nov. 18 <sup>th</sup>	Top-down and native mass spectrometry	Prof. Dr. Albert Heck
Nov. 19 <sup>th</sup>	Cross-linking mass spectrometry informed by top-down mass spectrometry	Prof. Dr. Richard Scheltema

### Week3 Innovations in Cryo-EM and Mass Spec

Nov. 24 <sup>th</sup>	Fast&Furious: accelerating Cryo-EM sample screening through novel MS-based techniques	Dr. Albert Konijnenberg
	High resolution Cryo-EM using Selectris Energy Filter and Falcon 4	Dr. Abhay Kotecha
Nov. 25 <sup>th</sup>	The basics, utility and complementarity of HDX-MS	Prof. Bei Yang
Nov. 26 <sup>th</sup>	Integration of mass spec and Cryo-EM to study the structure of coronavirus spike proteins	Prof. Danny Hsu

### Week4 Integrative Modeling

Dec. 2 <sup>nd</sup>	Integrative modelling of biomolecular complexes 1	Prof. Dr. Alexandre Bonvin
Dec. 3 <sup>rd</sup>	Integrative modelling of biomolecular complexes 2	Prof. Dr. Alexandre Bonvin
Dec. 4 <sup>th</sup>	Integrative modelling of biomolecular complexes 3 (topic chosen by audience vote)	Prof. Dr. Alexandre Bonvin



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赛默飞冷冻电镜  
CryoEM 官方微信

服务热线: 800 810 5118/400 650 5118  
中文网站: [www.thermofisher.com](http://www.thermofisher.com)  
E-mail 地址: [sales.msd@thermofisher.com](mailto:sales.msd@thermofisher.com)

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