

# Program of 4th GI-CoRE GCB Summer School in 2022 Winter for Molecular Biomedical Science and Engineering

As of 2021/10/28

Monday, February 28					
Chapter	Time		Title	Lecturer	Place
1	10:00 AM	10:45 AM	Introduction	Prof. Hiroki Shirato (Hokkaido Univ.)	Zoom
			Overview of radiation therapy (Therapeutic Window in New Era)		
15 min. break					
2	11:00 AM	11:45 AM	Molecular imaging and molecular probes	Prof. Yuji Kuge (Hokkaido Univ.)	Zoom
15 min. break					
60 min. break					
3	1:00 PM	1:45 PM	Integrating medical imaging with multi-omics data	Dr. Mireia Crispin-Ortuzar (University of Cambridge)	Zoom
15 min. break					
4	2:00 PM	2:45 PM	Production of medical radioisotopes	Prof. Masayuki Aikawa (Hokkaido Univ.)	Zoom
15 min. break					
5	3:00 PM	3:45 PM	Artificial intelligence and imaging for personalized cancer therapy	Dr. Ruijiang Li (Stanford Univ.)	Zoom
Tuesday, March 1					
Chapter	Time		Title	Lecturer	Place
6	10:00 AM	10:45 AM	Quantitative Imaging by MRI	Dr. Khin Khin Tha (Hokkaido Univ.)	Zoom
15 min. break					
7	11:00 AM	11:45 AM	Deep learning in diagnostic radiology	Dr. Yasuhiko Tachibana (QST)	Zoom
15 min. break					
60 min. break					
8	1:00 PM	1:45 PM	Windows programming for image data processing	Dr. Ken Sutherland (Hokkaido Univ.)	Zoom
15 min. break					
9	2:00 PM	2:45 PM	Imaging analytics for in vivo assessment of tumor biology: deep learning and image classification	Dr. Ken Sutherland (Hokkaido Univ.)	Zoom
15 min. break					
10	3:00 PM	3:45 PM	Recent advances in cancer radiotherapy using molecular imaging and radioisotopes	Dr. Hironobu Yasui (Hokkaido Univ.)	Zoom
Wednesday, March 2					
Chapter	Time		Title	Lecturer	Place
11	9:00 AM	9:45 AM	Basics of radiation biology	Dr. Yasuhito Onodera (Hokkaido Univ.)	Zoom
15 min. break					
12	10:00 AM	10:45 AM	Clinical application of proton beam therapy	Dr. Takayuki Hashimoto (Hokkaido Univ.)	Zoom
15 min. break					
13	11:00 AM	11:45 AM	Clinical molecular imaging and image analysis	Prof. Chietsugu Katoh (Hokkaido Univ.)	Zoom
15 min. break					
60 min. break					
14	1:00 PM	1:45 PM	Imaging analytics for in vivo assessment of tumor biology: pattern matching, tracking, and edge detection	Dr. Ken Sutherland (Hokkaido Univ.)	Zoom
15 min. break					
15	2:00 PM	2:45 PM	Molecular mechanism of viral carcinogenesis	Dr. Fumihiko Higashino (Hokkaido Univ.)	Zoom
15 min. break					
16,17	3:00 PM	4:30 PM	Basics of MRI + MRI tour	Dr. Khin Khin Tha (Hokkaido Univ.)	Zoom
15 min. break					
18	4:45 PM	5:30 PM	Measurement of electric conductivity of human tissue in vivo	Dr. Ulrich Katscher (Philips Research Lab. Hamburg)	Zoom
Thursday, March 3					
Chapter	Time		Title	Lecturer	Place
19, 20	9:00 AM	10:30 AM	Radiation Biology: Fundamental Knowledge and Recent Advances	Dr. Erinn Rankin and Dr. Edward Graves (Stanford Univ.)	Zoom
30 min. break					
21, 22	11:00 AM	12:30 PM	Frontiers in Medical Physics	Prof. Lei Xing (Stanford Univ.)	Zoom
Friday, March 4					
Chapter	Time		Title	Lecturer	Place
23, 24	9:00 AM	10:30 AM	Radiation-related experimental biology Molecular radiation biology in GCB	Dr. Yasuhito Onodera (Hokkaido Univ.)	Zoom
30 min. break					
25, 26	11:00 AM	12:30 PM	Deep learning in biomedical science and engineering	Dr. Yusuke Nomura (Stanford Univ.)	Zoom
90 min. break					
27, 28	2:00 PM	3:30 PM	Clinical and biological evaluation metrics and biomaker in silico in radiation oncology	Dr. Keiji Kobashi (Hokkaido Univ.)	Zoom
30 min. break					
29, 30	4:00 PM	5:30 PM	Self-evaluation and presentation from the attendees Certificate	Prof. Hiroki Shirato (Hokkaido Univ.)	Zoom

\* Schedule is subject to change. QST: National Institutes for Quantum Science and Technology

Joint lecture with Medical Physics School  
Venues: Zoom meeting