HUMAN CELL ATLAS
ASIA

HCA Asia 2023 Meeting

Day 1 - 27 November 2023

9:10 AM - 10:55 AM GMT +5.5 **/ Sun Nov 26, 10:40 PM - Mon Nov 27, 12:25 AM** Your local time (1 Hour, 45 Min)

Day 1 - Part 1

Welcoming Remarks
Partha Majumder

Overview of meeting
Partha Majumder *State mission and goals*

Keynote #1
Aviv Regev *State of the HCA*

State of HCA Asia
Shyam Prabhakar *HCA Asia: Progress and Plan*

9:15 AM - 9:20 AM GMT +5.5 **/ Sun Nov 26, 10:45 PM - 10:50 PM** Your local time (5 Min)

Welcoming Remarks

Main Hall (Crystal Ballroom)

Partha Majumder
Distinguished Professor
John C Martin Centre for Liver Research and Innovations
Speaker

9:20 AM - 9:30 AM GMT +5.5 **/ Sun Nov 26, 10:50 PM - 11:00 PM** Your local time (10 Min)

Overview of Meeting

Main Hall (Crystal Ballroom)

Speaker: **Partha Majumder**

State mission and goals

Partha Majumder
Distinguished Professor
John C Martin Centre for Liver Research and Innovations
Speaker

9:30 AM - 10:15 AM GMT +5.5 **/ Sun Nov 26, 11:00 PM - 11:45 PM** Your local time (45 Min)

Keynote #1

Main Hall (Crystal Ballroom)

Chair: **Partha Majumder**

Keynote: **Aviv Regev** (virtual)

State of the HCA

Partha Majumder
Distinguished Professor
John C Martin Centre for Liver Re...
Moderator

Aviv Regev
Principal Investigator
Genentech, Human Cell Atlas
Keynote

10:15 AM - 10:45 AM GMT +5.5 **/ Sun Nov 26, 11:45 PM - Mon Nov 27, 12:15 AM** Your local time (30 Min)

State of HCA Asia

Main Hall (Crystal Ballroom)

Chair: **Partha Majumder**

Speaker: **Shyam Prabhakar**

HCA Asia: Progress and Plan

Partha Majumder
Distinguished Professor
John C Martin Centre for Liver Re...
Moderator

Shyam Prabhakar
Senior Group Leader
Genome Institute of Singapore
Speaker

10:45 AM - 11:00 AM GMT +5.5 **/ 12:15 AM - 12:30 AM** Your local time (15 Min)

Refreshment Break

10:55 AM - 1:30 PM GMT +5.5 **/ 12:25 AM - 3:00 AM** Your local time (2 Hours, 35 Min)

Day 1 - Part 2

WATCH RECORDING

Session 1-1: Recent findings on cell atlases
John Randell *HCA Data Ecosystem*
Jongil Kim *Introducing Two Cell Atlases: SCAID (Single Cell Atlas of Immune Diseases) and OSCA (Organoid Single Cell Atlas)*
Oni Basu *Our efforts towards creating the Human Cell Atlas: Lessons and future directions*
Chung-Chau Hon *A single-cell atlas of transcribed cis-regulatory elements in the human genome*
Evan Biederstedt *Cell Annotation Platform: Defining Cell Types and Cell States for the Human Cell Atlas*

11:00 AM - 12:30 PM GMT +5.5 **/ 12:30 AM - 2:00 AM** Your local time (1 Hour, 30 Min)

Session 1-1: Recent findings on cell atlases

Main Hall (Crystal Ballroom)

Session Chairs: **Shyam Prabhakar** and **Sharmila Sengupta**

1. **John Randell** *HCA Data Ecosystems*
2. **Jongil Kim** *Introducing Two Cell Atlases: SCAID (Single Cell Atlas of Immune Diseases) and OSCA (Organoid Single Cell Atlas)*
3. **Anindita (Oni) Basu** *Our efforts towards creating the Human Cell Atlas: Lessons and future directions*
4. **Chung-Chau Hon** (virtual) *A single-cell atlas of transcribed cis-regulatory elements in the human genome*
5. **Evan Biederstedt** *Cell Annotation Platform: Defining Cell Types and Cell States for the Human Cell Atlas*

Shyam Prabhakar
Senior Group Leader
Genome Institute of Singapore
Moderator

Sharmila Sengupta
Eminent Scientist
National Institute of Biomedical ...
Moderator

John Randell
Chief Alliance Officer
Human Cell Atlas
Speaker

Jong-Il Kim
Principal Investigator
Seoul National University College...
Speaker

Anindita (Oni) Basu
Principal Investigator
University of Chicago
Speaker

Evan Biederstedt
Research Scientist, Computation...
Harvard Medical School
Speaker

12:30 PM - 1:50 PM GMT +5.5 **/ 2:00 AM - 3:20 AM** Your local time (1 Hour, 20 Min)

Lunch Break

1:45 PM - 4:10 PM GMT +5.5 **/ 3:15 AM - 5:40 AM** Your local time (2 Hours, 25 Min)

Day 1 - Part 3

WATCH RECORDING

Session 1-2: Recent findings on cell atlases
Jinmiao Chen *CELL2VIRUS: Explore Virus-Host Interactions at Single-Cell Resolution*
Wenfei Jin *Human Ensemble Cell Atlas (hECA) project and its progress in the study of immune cells*
Seitaro Nomura *Single-cell and spatial analysis to dissect the pathogenesis of cardiovascular diseases*
Mi-So Park *A program-dependent single-cell eQTL model highlights dynamic genetic variant effects in the Asian Immune Diversity Atlas*

HCA Asia Flagship Proposals
Woong-Yang Park *Asian Cancer Cell Atlas*
Yukinori Okada, Ponpan Matangkasombut-choopong, Ho Namkoong *Infectious Diseases*
Archita Mishra *Microbiome Diversity and Human Health: Human Microbiome Diversity Atlas (HuMiD)*

Funder's talk and discussion (e-ASIA JRP)
Yukio Kemmochi *Exploring e-ASIA and SATREPS: Empowering Research for Progress in Asia*

1:50 PM - 2:50 PM GMT +5.5 **/ 3:20 AM - 4:20 AM** Your local time (1 Hour)

Session 1-2: Recent findings on cell atlases

Main Hall (Crystal Ballroom)

Session Chairs: **Shyam Prabhakar** and **Sharmila Sengupta**

6. **Jinmiao Chen** *CELL2VIRUS: Explore Virus-Host Interactions at Single-Cell Resolution*
7. **Wenfei Jin** (virtual) *Human Ensemble Cell Atlas (hECA) project and its progress in the study of immune cells*
8. **Seitaro Nomura** *Single-cell and spatial analysis to dissect the pathogenesis of cardiovascular diseases*
9. **Mi-So Park** *A program-dependent single-cell eQTL model highlights dynamic genetic variant effects in the Asian Immune Diversity Atlas*

Shyam Prabhakar
Senior Group Leader
Genome Institute of Singapore
Moderator

Sharmila Sengupta
Eminent Scientist
National Institute of Biomedical ...
Moderator

Jinmiao Chen
Principal Investigator
Singapore Immunology Network,...
Speaker

Seitaro Nomura
Principal Investigator
The University of Tokyo
Speaker

Mi-So Park
Genome Institute of Singapore / ...
Speaker

2:50 PM - 3:20 PM GMT +5.5 **/ 4:20 AM - 4:50 AM** Your local time (30 Min)

HCA Asia Flagship Proposals

Main Hall (Crystal Ballroom)

Session chairs: **Jay W. Shin** and **Anindita (Oni) Basu**

1. **Woong-Yang Park:** *Asian Cancer Cell Atlas*
2. **Ponpan Matangkasombut-choopong** (virtual), **Namkoong Ho** (virtual) and **Yukinori Okada:** *Infectious Diseases*
3. **Archita Mishra:** *Human Microbiome Diversity Atlas (HuMiD)*

Jay Shin
Senior Group Leader
A*STAR GIS
Moderator

Anindita (Oni) Basu
Principal Investigator
University of Chicago
Moderator

Woong Yang Park
Director
Samsung Medical Center / Sungk...
Speaker

Yukinori Okada
Team leader
RIKEN Center for Integrative Med...
Speaker

Ponpan Matangkasom...
Principal Investigator
Mahidol University
Speaker

Ho Namkoong
Principal Investigator
Keio University
Speaker

Archita Mishra
Principal Investigator
Telethon Kids Institute
Speaker

3:20 PM - 3:40 PM GMT +5.5 **/ 4:50 AM - 5:10 AM** Your local time (20 Min)

Funder's talk and discussion (e-ASIA JRP)

Main Hall (Crystal Ballroom)

Chair: **Piero Carninci**

Speaker: **Yukio Kemmochi**

Exploring e-ASIA and SATREPS: Empowering Research for Progress in Asia

Piero Carninci
Team Leader
RIKEN Center for Integrative Med...
Moderator

Yukio Kemmochi
Manager
Japan Science and Technology Ag...
Speaker

3:40 PM - 3:55 PM GMT +5.5 **/ 5:10 AM - 5:25 AM** Your local time (15 Min)

Refreshment Break

3:54 PM - 5:25 PM GMT +5.5 **/ 5:24 AM - 6:55 AM** Your local time (1 Hour, 31 Min)

Breakout Session

Regional collaborations and possibilities to promote trans-national participation
Topic #1: Asian Cancer Cell Atlas
Topic #2: Infectious Diseases
Topic #3: Microbiome Diversity and Human Health

3:55 PM - 5:25 PM GMT +5.5 **/ 5:25 AM - 6:55 AM** Your local time (1 Hour, 30 Min)

(Breakout Session) Topic #1: Asian Cancer Cell Atlas

Main Hall (Crystal Ballroom)

WATCH RECORDING

Aim: Creating a comprehensive single-cell map of prevalent cancer types in Asian patients can provide crucial insights into the molecular and cellular characteristics of these cancers. It can also serve as a foundation for advancing cancer research and personalized medicine in the context of Asian populations.

Short-term goal:
1. Providing Platforms for Cancer Single Cell Research for Asian Countries:
- Collaboration Initiatives: Facilitate collaboration among research institutions and healthcare organizations across Asian countries.
- Training Programs: Develop training programs to empower researchers in using and contributing to the platform.

2. Building Comprehensive Database for Asian Cancer Single Cell Genome:
- Database Development: Establish a robust and secure database infrastructure for storing and retrieving single-cell genomic data.
- Data Standardization: Implement standards for data formatting and annotation to ensure compatibility and comparability across studies.

Mid-term goal:
1. Understanding the Cancer Immune Diversity of Asian Population:
- Data Collection: Collect single-cell multiome data from a diverse set of prevalent cancer types in Asian patients.
- Immunophenotyping: Use techniques like CITE-seq to profile both gene expression and cell surface protein markers to better understand the immune landscape.

2. Investigating Differential Responses to Immunotherapy in Asian Cancer Patients:
- Clinical Correlation: Integrate clinical data with single-cell profiles to identify factors influencing responses to immunotherapy.
- Longitudinal Studies: If possible, conduct longitudinal studies to track changes in the immune landscape during and after immunotherapy.

Woong Yang Park
Director
Samsung Medical Center / Sungk...
Moderator

Natini Jinawath
Principal Investigator
Faculty of Medicine Ramathibodi ...
Moderator

3:55 PM - 5:25 PM GMT +5.5 **/ 5:25 AM - 6:55 AM** Your local time (1 Hour, 30 Min)

(Breakout Session) Topic #2: Infectious Diseases

Sapphire Room

WATCH RECORDING

Aim: Pan-Asian health promotion by controlling infectious diseases.

Short-term goal:
1. Prioritize the target infectious diseases of HCA Asia project.
- Infectious diseases common and specific in Asian countries (tuberculosis, nontuberculous mycobacteria; NTM, liver cirrhosis, Treponema pallidum, malaria, COVID-19?, influenza, etc.).
- Dengue, malaria, acute diarrheal illness? MDR-TB, MDR-bacteria? Influenza? Emerging viruses?

2. Select the target tissue of single cell omics analysis.
- Peripheral blood, skin, colon, BAL/nasal swab for respiratory pathogens etc.

3. Select the technical methods of single cell omics.
- scRNA-seq, scATAC-seq, multi-ome, longread seq, spatial transcriptome.

4. Define the strain-level diversity of the target infectious diseases, Host-pathogens-microbiome.

5. Develop tools for integrative host-pathogen analysis to explore systemic immune responses, phenotype of infected cells, as well as adaptive immune receptor repertoires and antigen-specific TCRs/BCRs.

6. Grant proposal to global foundations.

Mid-term goal:
1. Construct pan-Asian network and practical pipeline to elucidate infectious disease biology.

2. Make the catalogue of within-Asian diversity of infectious disease omics.

Yukinori Okada
Team leader
RIKEN Center for Integrative Med...
Moderator

Waradon Sungnak
Principal Investigator
Mahidol University
Moderator

3:55 PM - 5:25 PM GMT +5.5 **/ 5:25 AM - 6:55 AM** Your local time (1 Hour, 30 Min)

(Breakout Session) Topic #3: Microbiome Diversity and Human Health

Corridor Room

WATCH RECORDING

Aim: Human Microbiome Diversity Atlas (HuMiD) in Asia-Pacific: Profiling Microbiomes Across Ages

Short-term goal:
1. Global Collaboration with a Focus on Age-Specific Research: Discuss the importance of international collaborations in studying the microbiome across different age groups. Explore strategies for partnerships that focus on specific life stages, such as infancy, childhood, adulthood, and senior years.

2. Standardizing Data Collection Methods Globally: Explore how to establish common protocols and standards for microbiome data collection to ensure consistency and comparability across different countries and regions.

3. Cost-Effective Approaches to Microbiome Research: Investigate methods to reduce the costs of microbiome research, including the use of shared resources, open-source technologies, and innovative, low-cost research methodologies.

Mid-term goal:
1. Fostering Regional and International Collaborations: Discuss strategies for building effective partnerships across different regions, focusing on shared goals, resource pooling, and overcoming cultural and linguistic barriers.

2. Public Health Policies and Microbiome Research: Examine how findings from microbiome research can be translated into effective public health policies and practices across different countries.

3. Creating Synergy Across Borders in Microbiome Research: Discuss how different countries can synergize their efforts, share findings, and collaborate on large-scale projects to maximize the impact of their research.

Archita Mishra
Principal Investigator
Telethon Kids Institute
Moderator

Souvik Mukherjee
Assistant Professor
National Institute of Biomedical ...
Moderator

5:25 PM - 5:45 PM GMT +5.5 **/ 6:55 AM - 7:15 AM** Your local time (20 Min)

Refreshment Break

5:40 PM - 7:45 PM GMT +5.5 **/ 7:10 AM - 9:15 AM** Your local time (2 Hours, 5 Min)

Day 1 - Part 4

WATCH RECORDING

Keynote #2
Gary Bader *Mapping the multiscale human*

Funder's talk and discussion (NHGRI/NIH)
Carolyn Hutter *Advances in Single-cell Analysis at the Forefront of Genomics*

Lightning talks by selected poster presenters
Punn Augsornworawat *Multiomic profiling of human stem cell derived islets defines lineage plasticityduring pancreatic organogenesis*
Kian Hong Kock *The Asian Immune Diversity Atlas (AIDA): Determinants of diversity in circulating immune cell states across Asia*
Srimonta Gayen *Single-cell RNA-seq analysis reveals no X-chromosome dampening in naive human pluripotent stem cell*
Ryuya Edahiro *Innate immune cell genetic risk factors are linked to COVID-19 severity*
Jennifer Chien *CZ CELL×GENE Discover: A single-cell data platform for scalable exploration, analysis and modeling of aggregated data*
Ankita Chatterjee *Single-cell profiling reveals smoking-associated alterations in immune repertoire of peripheral circulation among healthy young adults*

Day1 Closing Remarks
Jay W. Shin

5:45 PM - 6:30 PM GMT +5.5 **/ 7:15 AM - 8:00 AM** Your local time (45 Min)

Keynote #2

Main Hall (Crystal Ballroom)

Chair: **Ram Dasgputa**

Keynote: **Gary Bader**

Mapping the multiscale human

Ram Dasgupta
Principal Investigator
Genome Institute of Singapore
Moderator

Gary Bader
Principal Investigator
University of Toronto
Speaker

6:30 PM - 6:50 PM GMT +5.5 **/ 8:00 AM - 8:20 AM** Your local time (20 Min)

Funder's Talk and Discussion (NHGRI/NIH)

Main Hall (Crystal Ballroom)

Chair: **Partha Majumder**

Speaker: **Carolyn Hutter** (virtual)

Advances in Single-cell Analysis at the Forefront of Genomics

Partha Majumder
Distinguished Professor
John C Martin Centre for Liver Re...
Moderator

Carolyn Hutter
Division Director
National Human Genome Resear...
Speaker

6:50 PM - 7:20 PM GMT +5.5 **/ 8:20 AM - 8:50 AM** Your local time (30 Min)

Lightning Talks (by selected poster presenters)

Main Hall (Crystal Ballroom)

Chair: **Senjuti Saha**

1. **Punn Augsornworawat:** *Multiomic profiling of human stem cell derived islets defines lineage plasticity during pancreatic organogenesis*
2. **Kian Hong Kock:** *The Asian Immune Diversity Atlas (AIDA): Determinants of diversity in circulating immune cell states across Asia*
3. **Srimonta Gayen:** *Single-cell RNA-seq analysis reveals no X-chromosome dampening in naive human pluripotent stem cell*
4. **Ryuya Edahiro:** *Innate immune cell genetic risk factors are linked to COVID-19 severity*
5. **Jennifer Chien:** *CZ CELL×GENE Discover: A single-cell data platform for scalable exploration, analysis and modeling of aggregated data*
6. **Ankita Chatterjee:** *Single-cell profiling reveals smoking-associated alterations in immune repertoire of peripheral circulation among healthy young adults*

Senjuti Saha
Director & Scientist
Child Health Research Foundation
Moderator

Punn Augsornworawat
Mahidol University
Speaker

Kian Hong Kock
Scientist
Agency For Science, Technology a...
Speaker

Srimonta Gayen
Indian Institute of Science, Banga...
Speaker

Ryuya Edahiro
Medical doctor
Osaka University
Speaker

Jennifer Chien
Data Curator
Stanford University
Speaker

Ankita Chatterjee
Postdoctoral Associate, Group Le...
John Martin Centre for Liver Rese...
Speaker

7:20 PM - 7:30 PM GMT +5.5 **/ 8:50 AM - 9:00 AM** Your local time (10 Min)

Day 1 Closing Remarks

Main Hall (Crystal Ballroom)

Speaker: **Jay W. Shin**

Jay Shin
Senior Group Leader
A*STAR GIS
Speaker

7:30 PM - 8:30 PM GMT +5.5 **/ 9:00 AM - 10:00 AM** Your local time (1 Hour)

Social Hour

Day 2 - **28 November 2023**

8:55 AM - 11:20 AM GMT +5.5 **/ Mon Nov 27, 10:25 PM - Tue Nov 28, 12:50 AM** Your local time (2 Hours, 25 Min)

Day 2 - Part 1

WATCH RECORDING

Welcome Day2
Partha Majumder

Keynote #3
Jay W. Shin *Scaling Up Science with Single Cell Genomics*

Funder's talk and discussion (CZI)
Jonah Cool *The Next Frontier: Diversifying HCA Tissue Samples and Advancing Single-Cell Technologies*

Session 2: Newly-introduced technologies and their applications
Dong-Sung Lee *Epigenomic and chromosomal architectural reconfiguration in developing human brain*
Angela Wu *scONE-seq: Single-cell multi-omics dissection of phenotype and genotype heterogeneity from frozen tumors*
Liang Wu *Spatially-resolved transcriptomics analyses of invasive zone in liver cancer*

9:00 AM - 9:05 AM GMT +5.5 **/ Mon Nov 27, 10:30 PM - 10:35 PM** Your local time (5 Min)

Welcome Day 2

Main Hall (Crystal Ballroom)

Partha Majumder
Distinguished Professor
John C Martin Centre for Liver Research and Innovations
Speaker

9:05 AM - 9:50 AM GMT +5.5 **/ Mon Nov 27, 10:35 PM - 11:20 PM** Your local time (45 Min)

Keynote #3

Main Hall (Crystal Ballroom)

Chair: **Shyam Prabhakar**

Keynote: **Jay W. Shin**

Scaling-Up Single Cell Genomics for Science and Medicine

Shyam Prabhakar
Senior Group Leader
Genome Institute of Singapore
Moderator

Jay Shin
Senior Group Leader
A*STAR GIS
Speaker

9:50 AM - 10:10 AM GMT +5.5 **/ Mon Nov 27, 11:20 PM - 11:40 PM** Your local time (20 Min)

Funder's Talk and Discussion (CZI)

Main Hall (Crystal Ballroom)

Chair: **Shyam Prabhakar**

Speaker: **Jonah Cool** (virtual)

The Next Frontier: Diversifying HCA Tissue Samples and Advancing Single-Cell Technologies

Shyam Prabhakar
Senior Group Leader
Genome Institute of Singapore
Moderator

Jonah Cool
Science Officer, Program Lead
Chan Zuckerberg Initiative
Speaker

10:10 AM - 11:10 AM GMT +5.5 **/ Mon Nov 27, 11:40 PM - Tue Nov 28, 12:40 AM** Your local time (1 Hour)

Session 2: Newly-introduced technologies and their applications

Main Hall (Crystal Ballroom)

Chairs: **Woong-Yang Park** and **Arindam Maitra**

1. **Dong-Sung Lee** *Epigenomic and chromosomal architectural reconfiguration in developing human brain*
2. **Angela Wu** (virtual) *scONE-seq: Single-cell multi-omics dissection of phenotype and genotype heterogeneity from frozen tumors*
3. **Liang Wu** (virtual) *Spatially-Resolved Transcriptomics Analyses of Liver Cancer*

Woong Yang Park
Director
Samsung Medical Center / Sungk...
Moderator

Arindam Maitra
Associate Director
National Institute of Biomedical ...
Moderator

Dongsung Lee
Assistant Professor
University of Seoul
Speaker

Angela Wu
Group Leader
Hong Kong University of Science ...
Speaker

liang wu
Chief Scientist
BGI-Shenzhen
Speaker

11:10 AM - 11:25 AM GMT +5.5 **/ 12:40 AM - 12:55 AM** Your local time (15 Min)

Refreshment Break

11:20 AM - 12:50 PM GMT +5.5 **/ 12:50 AM - 2:20 AM** Your local time (1 Hour, 30 Min)

Day 2 - Part 2

WATCH RECORDING

Session 3: Computational approaches relevant to Atlasing
Ge Gao *Rationally design generative models for delineating the regulatory map in silico*
Grace Yeo *Spatial characterization of the colorectal cancer tumor microenvironment*
Sanghamitra Bandyopadhyay *Clustering single-cell RNA-seq data*
Dinithi Sumanaweera *Gene-level alignment of single-cell trajectories*

11:25 AM - 12:35 PM GMT +5.5 **/ 12:55 AM - 2:05 AM** Your local time (1 Hour, 10 Min)

Session 3: Computational approaches relevant to Atlasing

Main Hall (Crystal Ballroom)

Chairs: **Jinmiao Chen** and **Indranil Mukhopadhyay**

1. **Ge Gao** (virtual) *Rationally design generative models for delineating the regulatory map in silico*
2. **Grace Yeo** *Spatial characterization of the colorectal cancer tumor microenvironment*
3. **Sanghamitra Bandyopadhyay** *Clustering single-cell RNA-seq data*
4. **Dinithi Sumanaweera** *Gene-level alignment of single-cell trajectories*

Jinmiao Chen
Principal Investigator
Singapore Immunology Network,...
Moderator

Indranil Mukhopadhyay
Professor
Indian Statistical Institute
Moderator

Ge Gao
Principal Investigator
Peking University
Speaker

Grace Yeo
Principal Investigator
Genome Institute of Singapore
Speaker

Sanghamitra Bandyop...
Director
Indian Statistical Institute
Speaker

Dinithi Sumanaweera
Postdoctoral Associate
Wellcome Sanger Institute
Speaker

12:35 PM - 1:55 PM GMT +5.5 **/ 2:05 AM - 3:25 AM** Your local time (1 Hour, 20 Min)

Lunch Break

1:55 PM - 2:55 PM GMT +5.5 **/ 3:25 AM - 4:25 AM** Your local time (1 Hour)

Poster Session

Sapphire Room

Poster presenters and their abstracts are listed here

2:50 PM - 5:30 PM GMT +5.5 **/ 4:20 AM - 7:00 AM** Your local time (2 Hours, 40 Min)

Day 2 - Part 3

WATCH RECORDING

Session 4: Cancer and chronic diseases
Ram Dasgupta *Single cell analysis of human liver: from development to disease*
Partha Majumder *Single-Cell Transcriptomic Analysis of Gingivo-buccal Oral Cancer*
Murim Choi *Utility of expression quantitative trait approach in understanding NAFLD*

Session 5: Infectious and immune-related diseases
Yukinori Okada *Statistical genetics elucidates biology of infectious diseases*
Veena S. Patil *Single-cell transcriptomic and T cell antigen receptor repertoire analysis of viral antigen-specific memory T cells in humans*
Hideki Ueno *Human liver-resident immune cells and their alterations by age*
Boxiang Liu *Towards a cell-type-specific dissection of complex diseases*

2:55 PM - 3:55 PM GMT +5.5 **/ 4:25 AM - 5:25 AM** Your local time (1 Hour)

Session 4: Cancer and chronic diseases

Main Hall (Crystal Ballroom)

Chairs: **Gary Bader** and **Nidhan K. Biswas**

1. **Ram Dasgputa** *Single cell analysis of human liver: from development to disease*
2. **Partha Majumder** *Single-Cell Transcriptomic Analysis of Gingivo-buccal Oral Cancer*
3. **Murim Choi** *Utility of expression quantitative trait approach in understanding NAFLD*

Gary Bader
Principal Investigator
University of Toronto
Moderator

Nidhan Kumar Biswas
Associate Professor
National Institute of Biomedical ...
Moderator

Ram Dasgupta
Principal Investigator
Genome Institute of Singapore
Speaker

Partha Majumder
Distinguished Professor
John C Martin Centre for Liver Re...
Speaker

Murim Choi
Associate Professor
Seoul National University
Speaker

3:55 PM - 5:05 PM GMT +5.5 **/ 5:25 AM - 6:35 AM** Your local time (1 Hour, 10 Min)

Session 5: Infectious and immune-related diseases

Main Hall (Crystal Ballroom)

Chairs: **Yukinori Okada** and **Waradon Sungnak**

1. **Yukinori Okada** *Statistical genetics elucidates biology of infectious diseases*
2. **Veena S. Patil** *Single-cell transcriptomic and T cell antigen receptor repertoire analysis of viral antigen-specific memory T cells in humans*
3. **Hideki Ueno** *Human liver-resident immune cells and their alterations by age*
4. **Boxiang Liu** *Towards a cell-type-specific dissection of complex diseases*

Yukinori Okada
Team leader
RIKEN Center for Integrative Med...
Moderator

Waradon Sungnak
Principal Investigator
Mahidol University
Moderator

Veena Shivagouda Patil
Principal Investigator
National Institute of Immunology
Speaker

Hideki Ueno
Principal Investigator
Department of Immunology Grad...
Speaker

5:05 PM - 5:20 PM GMT +5.5 **/ 6:35 AM - 6:50 AM** Your local time (15 Min)

Refreshment Break

5:15 PM - 8:00 PM GMT +5.5 **/ 6:45 AM - 9:30 AM** Your local time (2 Hours, 45 Min)

Day 2 - Part 4

WATCH RECORDING

Session 6: Early life/childhood diseases
Arindam Maitra *Deciphering Birth Outcomes: From Genetic Underpinnings to Transcriptional Signatures*
Gunjan Dixit *Building the Healthy Paediatric Airway Atlas: One Tissue at a Time*
Ashley St. John F*unctions and phenotypes of fetal immune cells during congenital infection*

Breakout report back
Woong-Yang Park, Natini Jinawath *Asian Cancer Cell Atlas*
Yukinori Okada, Waradon Sungnak *Infectious Diseases*
Archita Mishra, Souvik Mukherjee *Microbiome Diversity and Human Health*

Panel Discussion: *How to use single-cell omics/Human Cell Atlas to understand disease*

Closing Remarks
Partha Majumder, John Randell

5:20 PM - 6:10 PM GMT +5.5 **/ 6:50 AM - 7:40 AM** Your local time (50 Min)

Session 6: Early life/childhood diseases

Main Hall (Crystal Ballroom)

Chairs: **Archita Mishra** and **Senjuti Saha**

1. **Arindam Maitra** *Deciphering Birth Outcomes: From Genetic Underpinnings to Transcriptional Signatures*
2. **Gunjan Dixit** *Building the Healthy Paediatric Airway Atlas: One Tissue at a Time*
3. **Ashley St. John** (virtual) *Functions and phenotypes of fetal immune cells during congenital infection*

Archita Mishra
Principal Investigator
Telethon Kids Institute
Moderator

Senjuti Saha
Director & Scientist
Child Health Research Foundation
Moderator

Arindam Maitra
Associate Director
National Institute of Biomedical ...
Speaker

Gunjan Dixit
Peter MacCallum Cancer Centre
Speaker

Ashley St. John
Duke-NUS Medical School
Speaker

6:10 PM - 6:40 PM GMT +5.5 **/ 7:40 AM - 8:10 AM** Your local time (30 Min)

Report Back from Breakout Discussions

Main Hall (Crystal Ballroom)

Chair: **Partha Majumder**, **Shyam Prabhakar**

Topic #1: Asian Cancer Cell Atlas - **Woong-Yang Park**, **Natini Jinawath**
Topic #2: Infectious Diseases - **Yukinori Okada**, **Waradon Sungnak**
Topic #3: Microbiome Diversity and Human Health - **Archita Mishra**, **Souvik Mukherjee**

Partha Majumder
Distinguished Professor
John C Martin Centre for Liver Re...
Moderator

Shyam Prabhakar
Senior Group Leader
Genome Institute of Singapore
Moderator

Woong Yang Park
Director
Samsung Medical Center / Sungk...
Speaker

Natini Jinawath
Principal Investigator
Faculty of Medicine Ramathibodi ...
Speaker

Yukinori Okada
Team leader
RIKEN Center for Integrative Med...
Speaker

Waradon Sungnak
Principal Investigator
Mahidol University
Speaker

Archita Mishra
Principal Investigator
Telethon Kids Institute
Speaker

Souvik Mukherjee
Assistant Professor
National Institute of Biomedical ...
Speaker

6:40 PM - 7:20 PM GMT +5.5 **/ 8:10 AM - 8:50 AM** Your local time (40 Min)

Panel Discussion: How to use single-cell omics/Human Cell Atlas to understand disease

Main Hall (Crystal Ballroom)

Moderator: **Yukinori Okada**

Panelists: **Jay W. Shin, Archita Mishra, Abhijit Chowdhury, Natini Jinawath, Grace Yeo**

Yukinori Okada
Team leader
RIKEN Center for Integrative Med...
Moderator

Archita Mishra
Principal Investigator
Telethon Kids Institute
Panelist

Jay Shin
Senior Group Leader
A*STAR GIS
Panelist

Abhijit Chowdhury
Professor, Head of Hepatology
Liver Foundation, West Bengal . I...
Panelist

Natini Jinawath
Principal Investigator
Faculty of Medicine Ramathibodi ...
Panelist

Grace Yeo
Principal Investigator
Genome Institute of Singapore
Panelist

7:20 PM - 7:30 PM GMT +5.5 **/ 8:50 AM - 9:00 AM** Your local time (10 Min)

Closing Remarks

Main Hall (Crystal Ballroom)

Speakers: **Partha Majumder**, **John Randell**

Partha Majumder
Distinguished Professor
John C Martin Centre for Liver Re...
Speaker

John Randell
Chief Alliance Officer
Human Cell Atlas
Speaker

7:30 PM - 8:30 PM GMT +5.5 **/ 9:00 AM - 10:00 AM** Your local time (1 Hour)

Social Dinner (in-person attendees only)

Main Hall (Crystal Ballroom)