



VIRTUAL | Systems Immunology in Aging and Complex Diseases

Cofactors in immune aging and COVID-19

September 9 - 10, 2021

Thursday, September 9th

9:30 am **Opening Remarks**
George Kuchel, M.D., FCP, AGSF *UConn Center on Aging and University of Connecticut* &
Duygu Ucar, Ph.D., *The Jackson Laboratory for Genomic Medicine*

Session 1: Sex and genetics in immune responses/diseases

Session Moderator: Duygu Ucar, Ph.D., *The Jackson Laboratory for Genomic Medicine*

9:40 am **Sex Differences in Immunity to SARS-CoV-2**
Sabra Klein, Ph.D., *Johns Hopkins University*

10:20 am **Lifelong Sex Differences in Neutrophil Phenotypes**
Berenice Benayoun, Ph.D., *USC Leonard Davis*

11:00 am Break

11:20 am **Keynote: Genetic and Immunological Causes of Life-Threatening COVID-19**
Jean-Laurent Casanova, M.D., Ph.D., *Rockefeller University; HHMI*

12:20 pm Lunch Break

Session 2: Epigenetics in immune responses and diseases

Session Moderator: Asa Thibodeau, Ph.D., *Jackson Laboratory*

1:00 pm **High-Throughput Genomic Technologies for Human Immunology**
Ansuman Satpathy, M.D. PhD., *Stanford University*

1:40 pm **Interpreting Genetic Variants Through Chromatin Interaction Maps In Primary Human Immune Cells**
Ferhat Ay, Ph.D., *La Jolla Institute for Immunology*

2:20 pm **Short Talk 1**
Single-Cell Epigenetic and Transcriptional Analyses of an Aging Immune System Reveal GZMK+ CD8+ T Cells as Conserved Hallmark of Inflammation
Denis Mogilenko, Ph.D., *Washington University in St. Louis*

2:40 pm Break

Session 3: Metabolic dysfunctions

Session Moderator: Berenice Benayoun, Ph.D., *USC Leonard Davis*

3:00 pm **Mitochondrial-Encoded Immunity**

Changhan David Lee, Ph.D., *University of Southern California*

3:40 pm **Immuno-Metabolic Dysregulation in Macrophages During Aging: Aging at the Cross Roads of Inflammation and Metabolism**

Anthony Covarrubias, Ph.D., *University of California, Los Angeles*

4:20 pm **The Microbiome Contributes to Unhealthy Aging**

Dawn Bowdish, Ph.D., *McMaster University*

5:00 pm **Dysregulation of the Adipose-Resident Immune Compartment Drives Thermogenic Failure During Aging**

Emily Goldberg, Ph.D., *University of California, San Francisco*

5:40 pm **Panel/Open Discussion with the Day's Speakers**

Friday, September 10th

Session 4: Biomarkers of aging

Session Moderator: Duygu Ucar, Ph.D., *The Jackson Laboratory for Genomic Medicine*

9:30 am **Human Immune Monitoring Coming of Age**

Shai Shen Orr, Ph.D., *Technion-Israel Institute of Technology*

10:10 am **Biomarkers for Geroscience-Guided Clinical Trials**

Jamie Justice, Ph.D., *Wake Forest School of Medicine*

10:50 am **Quantification of the Pace of Biological Aging From a Blood Test: the DunedinPoAm DNA Methylation Algorithm**

Daniel Belsky, Ph.D., *Columbia University*

11:40 am **Short Talk 2**

Cellular and Plasma Proteomic Determinants of Healthy Aging Vs. Inflammation

Maxim Artyomov, Ph.D., *Washington University School of Medicine*

12:00 pm Lunch Break

Session 5. Infectious diseases

Session Moderator: Djamel Nehar-Belaid, Ph.D., *The Jackson Laboratory*

12:40 pm **Developing Therapies to Improve Antiviral Immunity in Older Adults**

Joan Mannick, M.D., *Life Biosciences*

- 1:20 pm **Host Responses to SARS-CoV-2 Infection**
Adolfo García -Sastre, Ph.D., *Icahn School of Medicine at Mount Sinai*
- 2:00 pm **Immunity**
Patrick Wilson, Ph.D., *Weill Cornell Medicine*
- 2:40 pm **Short Talk 3**
Senescence-Induced Changes in CD4 T Cell Differentiation Can be Alleviated by Treatment With Senolytics
Laura Haynes, Ph.D., *University of Connecticut, School of Medicine*
- 3:00 pm **Panel/Open Discussion with the Day's Speakers**