



Systems Biology of Aging

Hosts: Duygu Ucar, Ph.D., Assistant Professor
Jacques Banchereau, Ph.D., Professor & Director of Immunological Sciences
The Jackson Laboratory for Genomic Medicine
George Kuchel, M.D., FRCP, AGSF, Director
University of Connecticut Center of Aging

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Wednesday, September 4, 2019

8:00 am – 9:00 am

Registration

9:00 am – 9:15 am

Opening Remarks

“Are We Ready for Precision Gerontology?”

George Kuchel, M.D., FRCP, AGSF, Director and Professor
University of Connecticut Center on Aging

Session 1: Genetically Diverse Mice to Study Aging and its Diseases

9:15 am – 9:45 am

“Using Collaborative Cross Mice to Interrogate the Response to Influenza Infection”

Laura Haynes, Ph.D., Professor of Immunology
University of Connecticut Center on Aging

9:45 am – 10:15 am

“Incorporating Genetic Diversity in Mouse Models and the Potential for Precision-Medicine for Alzheimer’s”

Catherine Kaczorowski, Ph.D., Associate Professor and Evnin Family Endowed Chair
The Jackson Laboratory

10:15 am – 10:45 am

Break

10:45 am – 11:45 am

Day 1 Keynote

“Transcription Factor and miRNA Networks in T-Cell Aging”

Jorg Goronzy, M.D., Professor of Medicine (Immunology and Rheumatology)
Stanford University

11:45 am – 12:30 pm **Lunch**

Session 2: Human Immune System Aging

12:30 pm – 1:00 pm ***“How Age Impacts Human T Cells in Healthy and Chronic Diseases”***
Derya Unutmaz, M.D., Professor
The Jackson Laboratory for Genomic Medicine

1:00 pm – 1:30 pm ***“Effects of Aging on Innate Immune Cell Responses”***
Ruth Montgomery, Ph.D., Professor, Director of Yale CyTOF Facility, Associate
Dean for Scientific Affairs
Yale School of Medicine

1:30 pm – 1:45 pm **Short Talk**
***“Cell Subset Signatures of Inactivated Influenza Vaccination in Young and Older
Adults”***
Bram Gerritsen, Ph.D., Postdoctoral Associate
Yale University

1:45 pm – 2:15 pm ***“Immunometabolic Checkpoints of Aging”***
Vishwa Deep Dixit, DVM, Ph.D., Waldemar Von Zedwitz Professor of
Comparative Medicine and of Immunology
Yale University

2:15 pm – 2:45 pm **Break**

Session 3: Systems Immunology in Aging and Diseases

2:45 pm – 3:15 pm ***“ScRNA Ses and IsoSeq of PBMCs of Young and Old Healthy Subjects”***
Jacques Banchereau, Ph.D., Professor and Director of Immunological Sciences,
The Jackson Laboratory for Genomic Medicine

3:15 pm – 3:45 pm ***“DNA Methylation in Human Aging”***
Karen Conneely, Ph.D., Associate Professor
Emory University School of Medicine

3:45 pm – 4:15 pm ***“Dissecting Macrophage Functionality with Single-Cell Transcription and
Secretion Profiling”***
Kathryn Miller-Jensen, Ph.D., Associate Professor of Biomedical
Engineering & Molecular, Cellular & Developmental Biology
Yale School of Engineering and Applied Science

4:15 pm – 4:30 pm **Short Talk**
“Insights from AI and Computational Systems Biology Keep our Skin Young”
Fabian Filipp, Ph.D., M.Sc., Cancer Systems Biology, Department of Machine
Learning, Institute of Computational Biology
Technical University München

4:30 pm – 5:00 pm ***“Human Aging: Insights from Genome Wide Association Studies”***
David Melzer, MBBCh, M.Sc., Ph.D., Professor of Epidemiology and Public Health
University of Exeter; University of Connecticut Center on Aging

5:00 pm – 6:30 pm **Poster Session**

Thursday, September 5, 2019

Session 4: T Cell Aging

8:45 am – 9:15 am ***“Secondary Lymphoid Organ Changes Critically Contribute to Dysregulated Immunity in Aging”***
Janko Nikolich-Zugich, M.D., Ph.D., Bowman Professor and Head, Department of Immunobiology
University of Arizona, College of Medicine

9:15 am – 9:45 am ***“Interplay Between Age, Immunity, Cancer and CMV”***
Graham Pawelec, Ph.D., Professor
The University of Tübingen

9:45 am – 10:15 am ***“Blocking Inflammation to Enhance Immunity in Humans”***
Arne Akbar, Ph.D., Professor of Immunology
University College London

10:15 am – 10:30 am **Short Talk**
“Age-related Tumor Growth in Mice is Related to Integrin $\alpha 4$ in CD8+ T Cells”
Juhyun Oh, Ph.D.
Massachusetts General Hospital

10:30 am – 11:00 am **Break**

11:00 am – 11:45 am **Day 2 Keynote**
“CZI Science’s Support of Single Cell Biology”
Jonah Cool, Ph.D., Science Program Officer
Chan Zuckerberg Initiative

11:45 am – 12:30 pm **Lunch**

Session 5: Genomic and Computational Methods

12:30 pm – 1:00 pm ***“Collecting Multiple Modalities of Information from High-Throughput Single Cell Assays”***
Eleni Mimitou, Ph.D., Senior Research Scientist
New York Genome Center

- 1:00 pm – 1:30 pm ***“Relative Risk: Metagenomes of Aging”***
Julia Oh, Ph.D., Assistant Professor
The Jackson Laboratory for Genomic Medicine
- 1:30 pm – 2:00 pm ***“Epigenomic Regulation Signatures of Aging in Vertebrates”***
Berenice Benayoun, Ph.D., Assistant Professor of Gerontology
University of Southern California
- 2:00 pm – 2:30 pm ***“Chromatin Accessibility Signatures of Immune System Aging”***
Duygu Ucar, Ph.D., Assistant Professor
The Jackson Laboratory for Genomic Medicine
- 2:30 pm – 3:00 pm ***“Gene Expression and Noise Dynamics During Single-Cell Aging”***
Murat Acar, Ph.D., Associate Professor of Molecular, Cellular and Developmental Biology
Yale University
- 3:00 pm – 3:15 pm **Short Talk**
“Comprehensive Multiomics Dissection of Age Associated Changes in Cellular and Non-cellular Components of Human Blood”
Maxim Artyomov, Ph.D., Associate Professor, Pathology & Immunology
Washington University School of Medicine in St. Louis
- 3:15 pm – 3:45 pm **Break**
- Session 6: Role of Senescence in Geroscience-Guided Therapies***
- 3:45 pm – 4:15 pm ***“A New Generation of Epidemiological Studies of Aging: the GESTALT Experience”***
Luigi Ferrucci, M.D., Ph.D., Scientific Director
National Institute on Aging
- 4:15 pm – 4:45 pm ***“Targeting Cellular Senescence to Alleviate Age-Related Disease”***
Ming Xu, Ph.D., Assistant Professor
University of Connecticut Center on Aging
- 4:45 pm – 5:00 pm **Short Talk**
“NAD Metabolism During Aging: Insight from Quantitative Flux Analysis”
Karthikeyani Chellappa, Ph.D., Postdoc
University of Pennsylvania
- 5:00 pm – 5:30 pm ***“Senolytics: The Path to Translation”***
James Kirkland, M.D., Ph.D., Noaber Foundation Professor of Aging Research, Director, Robert & Arlene Kogod Center on Aging
The Mayo Clinic
- 5:30 pm – 5:45 pm **Closing Remarks**
Jacques Bancheureau, Ph.D./ Duygu Ucar, Ph.D.