



# **Yale Stem Cell Center 15th Annual Retreat**

**October 12-13, 2023  
Yale West Campus  
Conference Center**

**Image by  
Jessie Wang  
Sumigray Lab**

# Yale Stem Cell Center

## 15th Annual Stem Cell Retreat

Welcome to the 15th Annual Retreat of the Yale Stem Cell Center. This year's Retreat is a one-and-a-half-day event that includes nine Yale faculty talks, two invited speakers, and ten short presentations from chosen abstract submissions. It also includes a poster session showcasing 45 research projects by trainees.

We are honored to have Emmanuelle Passequé, Ph.D on Thursday to deliver our Keynote Lecture and Sara A. Wickström, MD, PhD on Friday who will deliver the Yale Cancer Center/Yale Stem Cell Center Distinguished Lecture.

Thank you to the Yale Comprehensive Cancer Center for being a partner in this Retreat. We celebrate a world-class community of stem cell researchers at Yale. Our previous decade of retreats fostered these interactions among members of the Yale stem cell research community, and we are pleased to continue this important tradition.



### **Keynote Lecture Speaker, Yale Stem Cell Center**

**Dr. Emmanuelle Passequé, PhD** is the Alumni endowed Professor of Genetics & Development and the Director of the Columbia Stem Cell Initiative (CSCI) at Columbia University Irving Medical Center (CUIMC) in New York City. Dr. Passequé received her PhD from the University Paris XI (France) and trained with Dr. Erwin Wagner (Institute for Molecular pathology, Vienna, Austria) and Dr. Irv Weissman (Stanford University, USA) before joining the University of California San Francisco (UCSF) in 2005. Dr. Passequé was a Professor of Medicine in the Hematology/Oncology Division and the Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at UCSF until 2016 before joining CUIMC

in January 2017. Her research investigates the biology of blood-forming hematopoietic stem cells in normal and deregulated contexts such as hematological malignancies and physiological aging. Dr. Passequé has received a number of awards and prizes including a Scholar Award from the Lymphoma and Leukemia Society, an Outstanding Investigator Award from the NHLBI, and the 2019 William Dameshek Prize from the American Society of Hematology.



### **Joint Distinguished Lecture Speaker, Yale Stem Cell Center/ Yale Cancer Center**

**Professor Sara A. Wickström MD, PhD**, started her career as a medical student at the University of Helsinki. She completed an MD/PhD program after her studies, graduating with an MD in 2001 and a PhD in 2004. From 2005 to 2010, she was a postdoctoral researcher at the Max Planck Institute of Biochemistry and subsequently led a Max Planck research group at the Max Planck Institute for Biology of Ageing for ten years. Most recently, she was Professor of the Cell and Developmental Biology Laboratory at the Faculty of Medicine of the University of Helsinki and the Helsinki Institute of Life Science. In 2021, Professor Wickström

was appointed as Director of the Max Planck Institute for Molecular Biomedicine in Muenster, Germany where she opened a new department for Cell and Tissue Dynamics in spring 2022. Using the skin as their primary model, Sara, and her team study how tissue stem cells communicate with each other and their microenvironment to coordinate their proliferation, movement and maturation to create specific tissue structures. Her work is highly interdisciplinary and considers the dynamic feedback between major biological scales, from the level of tissues to the molecular effects of these interactions on chromatin regulation and gene expression. In doing so, her team is gaining insights into how tissues can remain healthy throughout a lifetime, as well as how these mechanisms may become disrupted in diseases such as cancer.

## ACKNOWLEDGEMENTS

### SILVER LEVEL RETREAT SPONSORS:



### CONTRIBUTORS:



### ORGANIZING COMMITTEE

Zachary Smith, PhD and Kaelyn Sumigray, PhD

Haifan Lin, PhD and Diane Krause, MD, PhD

Valancia Ariyanayagam, MBA, Patricia Sember, and Courtney Csech

## SCHEDULE OF EVENTS

**Thursday, October 12, 2023**

- 12:00 PM – 1:30 PM    **REGISTRATION AND LUNCH**
- 1:30 PM – 1:45 PM    **WELCOME AND OPENING REMARKS**  
Haifan Lin, PhD  
Eugene Higgins Professor of Cell Biology, and Professor of Genetics and of Obstetrics, Gynecology, and Reproductive Sciences and of Dermatology; Director, Yale Stem Cell Center
- 1:45 PM – 2:45 PM    **Session I: Trainees of the Yale Stem Cell Center**  
Chair: Nils Neuenkirchen, PhD  
Associate Research Scientist, Haifan Lin Lab
- 1:45 PM – 2:00 PM    **Tyler Jensen**  
MD, PhD Student, Andrew Xiao Lab  
*"Histone Variant H2AJ is a hallmark of human trophoblast fate"*
- 2:00 PM – 2:15 PM    **Jiaying Chen,**  
PhD Student, Haifan Lin Lab  
*"The Role of Piwi in selecting transcription start sites"*
- 2:15 PM – 2:30 PM    **Federica Giannini**  
PhD Student, Binyam Mogessie Lab  
*"The role of nuclear F-actin in oocyte genomic integrity"*
- 2:30 PM – 2:45 PM    **Xin Li, PhD**  
Post-doctoral scientist, Yibing Qyang lab  
*"Immune compatible swine induced pluripotent stem cells as a platform for cardiovascular tissue engineering"*
- 2:45 PM – 3:00 PM    **COFFEE BREAK**
- 3:00 PM – 4:00 PM    **Keynote Lecture Speaker, Yale Stem Cell Center**  
Emmanuelle Passegué, PhD  
Director, Columbia Stem Cell Initiative, Alumni Professor of Genetics & Development, Columbia University Irving Medical Center  
*"Of Stem Cells and Old Age: Understanding Hematopoietic Stem Cell Aging"*  
**Introduction: Shangqin Guo, PhD**  
Associate Professor of Cell Biology
- 4:00 PM – 4:30 PM    **Break and Poster Set Up**
- 4:30 PM – 7:00 PM    **Trainee Poster Session and Reception**

## Friday, October 13, 2023

8:00 AM – 8:55 AM Arrival, registration, coffee, and light refreshments

9:00 AM – 10:30 AM **Session I: Innovation of form and function**  
Chair: Kaelyn Sumigray, PhD  
Assistant Professor, Genetics

9:00 AM – 9:20 AM **Jacob Musser, PhD**  
Assistant Professor of Molecular, Cellular and  
Developmental Biology  
*"The Origin and Evolution of Animal Cell Types"*

9:20 AM – 9:35 AM **Eleanor Zagoren**  
PhD Student, Kaelyn Sumigray Lab  
*"Fate Specification of Rare CFTR High Expresser Cells in the Intestine"*

9:35 AM – 9:55 AM **Bluma Lesch, MD, PhD**  
Associate Professor of Genetics, Term  
*"Control of intergenerational epigenetic inheritance by the histone demethylase UTX/KDM6A in the male germ line"*

9:55 AM – 10:10 AM **Minming Wang**  
PhD Student, Zachary Smith Lab  
*"Consecutive roles for nodal antagonists set and consolidate the mouse primitive streak"*

10:10 AM – 10:30 AM **Michael Murrell, PhD**  
Associate Professor of Biomedical Engineering  
*"Capillary effects in cell and tissue motion"*

10:30 AM – 11:00 AM **COFFEE BREAK**

11:00 AM – 12:30 PM **Session II: Molecular regulation of cellular state**  
Chair: Zachary Smith, PhD  
Assistant Professor, Genetics

11:00 AM – 11:20 AM **Salil Garg, MD, PhD**  
Assistant Professor of Laboratory Medicine  
*"Origins of non-genetic heterogeneity in embryonic stem cells"*

11:20 AM – 11:35 AM **Tianchi Xin, PhD**  
Associate Research Scientist, Valentina Greco Lab,  
*"Oncogenic Kras induces spatiotemporally specific tissue deformation by modulating Erk activation"*

- 11:35 AM – 11:55 PM **Lilian Kabeche, PhD**  
**Assistant Professor in Molecular Biophysics and Biochemistry**  
*"Dissecting how ATR protects centromere identity to prevent genome instability"*
- 11:55 PM – 12:10 PM **Madeline Mayday**  
**PhD Student, Diane Krause Lab**  
*"Transcriptomic and epitranscriptomic effects of the acute megakaryoblastic leukemia fusion protein RBM15-MKL1"*
- 12:10 PM – 12:30 PM **Grace Chen, PhD**  
**Assistant Professor in Immunobiology**  
*"Circular RNAs in Immunity"*
- 12:30 PM – 2:00 PM **LUNCH BREAK**
- 2:00 PM – 3:00 PM **Joint Distinguished Lecture Speaker,**  
**Yale Stem Cell Center / Yale Cancer Center**  
**Sara Wickström, MD, PhD**  
**Director, the Max Planck Institute for Molecular Biomedicine, Department of Cell and Tissue Dynamics**  
*"Mechanical regulation of cell states" – VIA ZOOM*  
**Introduction: Valentina Greco, PhD, Carolyn Walch Slayman Professor of Genetics**
- 3:00 PM – 3:30 PM **COFFEE BREAK**
- 3:30 PM – 5:00 PM **Session III: Translating Genotype to Phenotype**  
**Chair: Salil Garg, MD, PhD**  
**Assistant Professor of Laboratory Medicine**
- 3:30 PM – 3:50 PM **Josh Gendron, PhD**  
**Associate Professor of Molecular, Cellular & Developmental Biology**  
*"Illuminating Clocks and Calendars in Plants"*
- 3:50 PM – 4:05 PM **Atreyo Pal**  
**PhD Student, James Noonan Lab**  
*"How Human Accelerated Regions Regulate a Common Set of Target Genes during Human and Chimpanzee Neurodevelopment"*
- 4:05 PM – 4:20 PM **Katharine Ellis**  
**MD, PhD student, Keith Choate Lab**  
*"Somatic mutations in NEK9 disrupt hair follicle stem cell fate specification"*

**Anne Eichmann, PhD**  
**Ensign Professor of Medicine (Cardiovascular**  
**Medicine) and Professor of Cellular and Molecular**  
**Physiology**  
*"Manipulating blood brain barrier permeability"*

**Mustafa Khokha, MD**  
**Professor with Tenure of Pediatrics**  
**(Critical Care Medicine)**  
*"An electrophysiological basis for pluripotency revealed by patient driven gene discovery"*

**Closing Remarks**  
Diane Krause, MD, PhD, Anthony N. Brady Professor of Laboratory Medicine, Cell Biology and Pathology; Assoc. Director, Yale Stem Cell Center; Assoc. Director, Transfusion Medicine Service; Medical Director, Clinical Cell Processing Laboratory; Medical Director, Advanced Cell Therapy Laboratory

## LIGHT RECEPTION AND POSTER SESSION AWARDS

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