2nd ANNUAL SYMPOSIUM ON
Multiscale Cell Fate Research

October 28 – 29, 2019
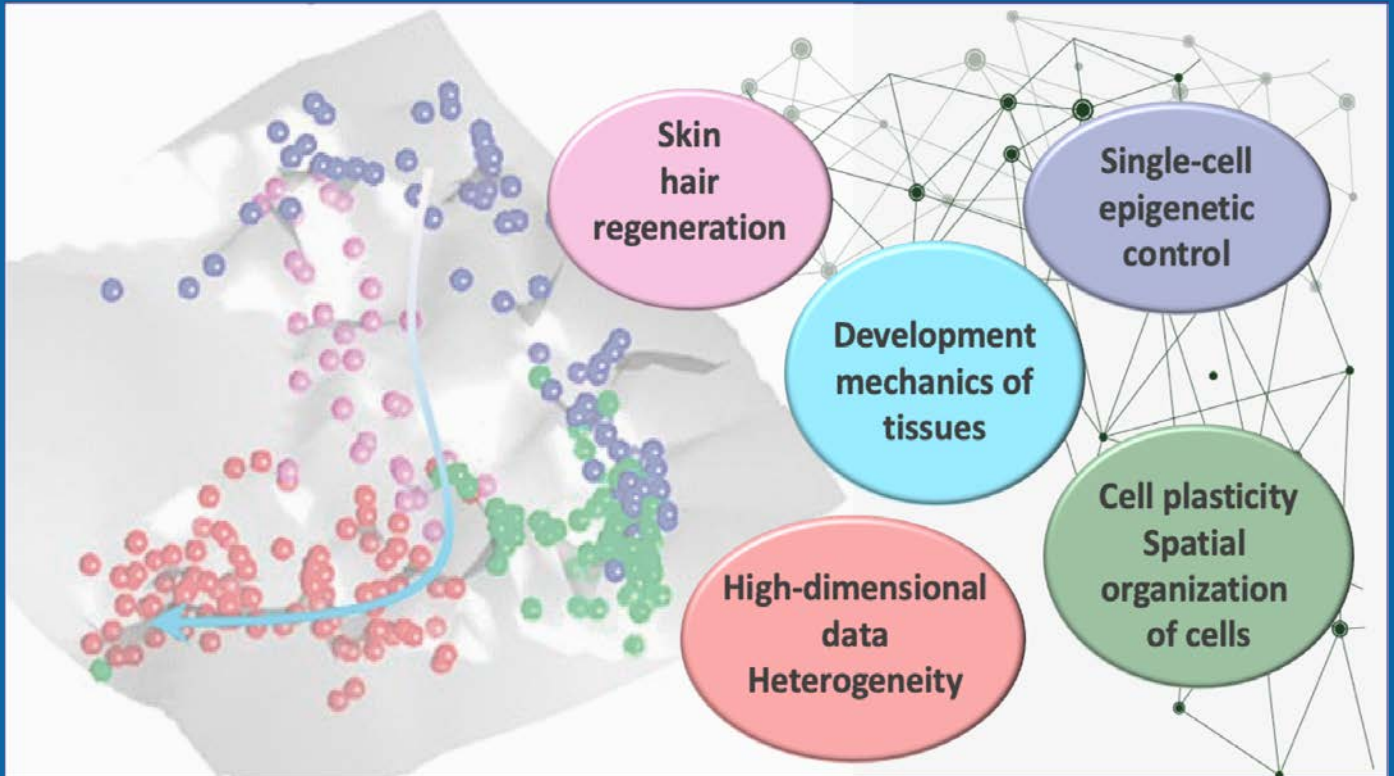
All events will be at the
Arnold and Mabel Beckman Center
of the National Academies of Sciences and Engineering
located at UC Irvine

All invited talks:
35-minute presentation
plus 5-minute Q&A

07:30AM – 08:00AM   **Breakfast**
Dining Room

08:00AM – 08:40AM   **The Molecular Anatomy of Mouse Skin During Hair Growth And Rest**
Maria Kasper, PhD
Karolinska Institutet

08:40AM – 09:20AM   **Single Cell RNA-Seq Analysis Reveals New Mechanisms for Fibrotic Skin Wound Repair**
Denise Gay, PhD
New York University

09:20AM – 10:00AM   **Control of Hair Cycling by Immune Cells**
Angela Christiano, PhD
Columbia University

10:00AM – 10:20AM   **Coffee Break**
Atrium

10:20AM – 11:00AM   **How Flows and Waves Organize Embryogenesis and Regeneration**
Stefano Di Talia, PhD
Duke University Medical Center

11:100M – 11:40AM   **From Networks to Function – Computational Models of Organogenesis**
Dagmar Iber, PhD
Eidgenössische Technische Hochschule Zürich

11:40AM – 11:45AM   **Interdisciplinary Opportunity Award (IOA) Announcement**

11:45AM – 01:00PM   **Lunch**
Dining Room

01:00PM – 01:40PM	**Switching Oncogenic Drivers to Switch Glioma Cell Fate and Mechanics of Tumor Progression** David Odde, PhD University of Minnesota
01:40PM – 02:20PM	**Melanoma Therapies to Suppress Resistance due to Heterogeneity and Plasticity** Roger S. Lo, MD, PhD University of California, Los Angeles
02:20PM – 02:40PM	**Coffee Break** Atrium
02:40PM – 05:00PM	**IOA Talks and Contributed Short Talks** All talks are 10 minutes, plus 5 minutes for questions and tech switch
05:00PM – 06:00PM	**Poster Session and Reception** Atrium and Courtyard
06:00PM – 08:00PM	**Dinner** Dining Room

*All invited talks:
35-minute presentation
plus 5-minute Q&A*

TUESDAY, OCTOBER 29

07:30AM – 08:00AM **Breakfast**
Dining Room

08:00AM – 08:40AM **Single-Cell Analysis of Adult Neural Stem Cells and Neurogenesis**
Hongjun Song, PhD
University of Pennsylvania

08:40AM – 09:20AM **Implications and Applications of Modular and Efficient Pre-Processing of Single-Cell RNA-Seq**
Lior Pachter, PhD
California Institute of Technology

09:20AM – 10:00AM **Mapping Cell States from Single-Cell Sequencing and Imaging Data**
Guocheng Yuan, PhD
Harvard University

10:00AM – 10:20AM **Coffee Break and Poster Session**
Atrium

10:20AM – 11:00AM **Mathematical Modeling of Implantable Bioartificial Pancreas Design**
Sunčica Čanić, PhD
University of California, Berkeley

11:00AM – 11:40AM **Regenerative Landscape of Intestinal Organoids**
Prisca Liberali, PhD
Friedrich Miescher Institute

11:40AM – 01:00PM **Lunch**
Dining Room

01:00PM – 03:00PM **IOA Talks and Contributed Short Talks**
All talks are 10 minutes, plus 5 minutes for questions and tech switch

03:00PM – 03:15PM	**Coffee Break** Atrium
03:15PM – 03:55PM	**Modeling Blood Clotting at the Extreme** Aaron Fogelson, PhD University of Utah
03:55PM – 04:35PM	**Modeling Cell Fate Specification in Nematode Development** Adriana Dawes, PhD Ohio State University
04:35PM – 05:15PM	**TimeSignature: An Accurate, Fast, and Universal Method for Inferring Physiological Time from Gene Expression Data** William Kath, PhD Northwestern University
05:15PM	**Interdisciplinary Opportunity Award (IOA) Abstract Due, and Adjourn**

SPEAKERS

Sunčica Čanić
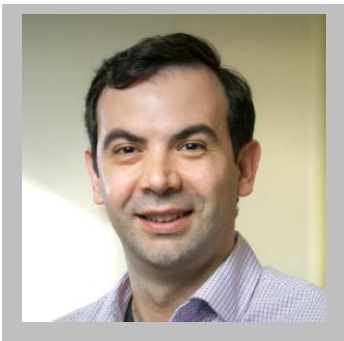University of California, Berkeley
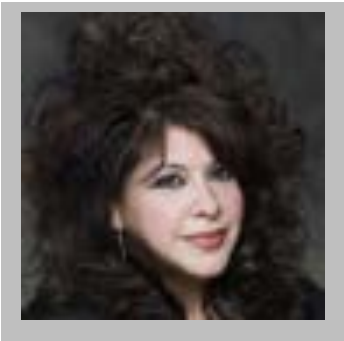
Angela Christiano
Columbia University

Adriana Dawes
Ohio State University

Stefano Di Talia
Duke University

Aaron Fogelson

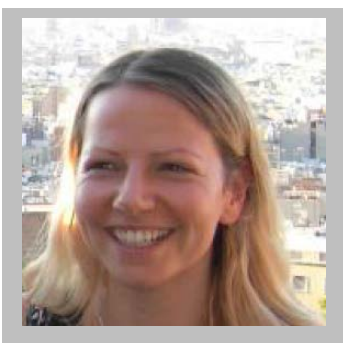University of Utah

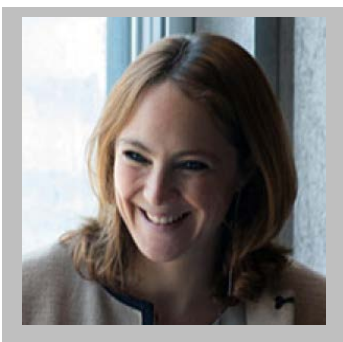## Denise Gay

New York University

Dagmar Iber

Eidgenössische Technische Hochschule Zürich

Maria Kasper

Karolinska Institutet

Prisca Liberali

Friedrich Miescher Institute

Roger Song
University of California, Los Angeles

David Odde
University of Minnesota

Lior Pachter
California Institute of Technology

Hongjun Song
University of Pennsylvania

Guocheng Yuan
Harvard University

OPPORTUNITY AWARD AND CONTRIBUTED TALKS

MONDAY, OCTOBER 28   02:40PM – 04:25PM

02:40PM – 02:55PM   **Investigating Cell Fate Reprogramming during Regeneration with Single-Cell Resolution in Drosophila Melanogaster**
IOA Team: Loveless, Worley, Carlson

02:55PM – 03:10PM   **Quantifying Zebrafish Pattern Variability and Model Robustness Using Topological Techniques**
Alexandria Volkening
Northwestern University

03:10PM – 03:25PM   **Deconstructing the Complexity of Cancer Heterogeneity into Genetic, Epigenetic, and Stochastic Levels**
Corey Hayford
Vanderbilt University

03:25PM – 03:40PM   **Control of Circuit–Host Interactions Toward Engineering Robust Gene Circuits**
Xiaojun Tian
Arizona State University

03:40PM – 03:55PM   **Impacts of Cellular Heterogeneity on Hair Follicle Growth Dynamics**
Qixuan Wang
University of California, Riverside

03:55PM – 04:10PM   **Somitogenesis by a Synthetic Gene Circuit**
Xiao Wang
Arizona State University

04:10PM – 04:25MP   **Mathematical Modeling and Computational Investigation of Heterogeneity in Breast Cancer Cells**
Xinfeng Liu
University of South Carolina

01:00M – 01:15PM   **Unraveling How Interactions of Chemical Signaling and Mechanical Forces Influence Cell Fate Decisions and Behaviors of Growing Tissues**
IOA Team: Jagiello, Ramirez-Guerrero

01:15PM – 01:30PM   **Information Processing in the Endoplasmic Reticulum**
Wylie Stroberg
University of Michigan

01:30PM – 01:45PM   **Stochastic Models of Chromatin Accessibility in Response to Oscillatory or Non-oscillatory Transcription Factor Dynamics**
IOA Team: Kim, Sheu

01:45PM – 02:00PM   **Mechanosensing by Piezo1 in Keratinocyte Migration and Wound Healing**
IOA Team: Holt, Zeng

02:00PM – 02:15PM   **Mesenchymal Cell Fate Plasticity in the Developing Avian Skin: Adipocytes, Endothelium and Smooth Muscle Cells**
Kuang-Ling Ou
University of Southern California

02:15PM – 02:30PM   **Infer EMT Transitions Using Single-Cell Transcriptomics**
IOA Team: Sha, Ye, Wang

02:30PM – 02:45PM   **A Statistical Simulator scDesign for Rational scRNA-Seq Experimental Design**
Jingyi Jessica Li
University of California, Los Angeles

02:45PM – 03:00PM   **Multiscale Modeling of Coordinated Endothelial Cell Behavior During Vascular Development**
Denis Tsygankov
Georgia Institute of Technology

POSTER PRESENTERS

Daniel Aguilar-Hidalgo, University of British Columbia

Minami Ando, Institute for Protein Research, Osaka university, Japan

Matthew Bovyn, University of California, Irvine

Zixuan Cang, University of California, Irvine

Jing Chen, Virginia Tech

Heyrim Cho, University of California, Riverside

Lara Clemens, University of California, Irvine

Emmanuel Dollinger, University of California, Irvine

Morgan Dragan, University of California, Irvine

Alvaro Fletcher, University of California, Irvine

Lianna Fung, University of California, Irvine

Cameron Gallivan, University of California, Irvine

Corey Hayford, Vanderbilt University

Ali Heydari, University of California, Merced

Jesse Holt, University of California, Irvine

Abdon Iniguez, University of California, Irvine

Ruochen Jiang, University of California, Los Angeles

Hyunjoong Kim, University of Utah

Jinsu Kim, University of California, Irvine

Colin Klaus, The Ohio State University

Sloan Lewis, University of California, Irvine

Justin Lin, Zymo Research Corp

Theresa Loveless, University of California, Irvine

Min-Jhe Lu, Illinois Institute of Technology

Sarah Maddox, Vanderbilt University

Christian Michael, University of California, Riverside

Jesse Milzman, University of Maryland

Julien Morival, University of California, Irvine

Tessa Morris, University of California, Irvine

Michelle Ngo, University of California, Irvine
Trini Nguyen, University of California, Irvine
Kuang-Ling Ou, University of Southern California
Sohyeon Park, University of California, Irvine
Yuchi Qiu, University of California, Irvine
Raul Ramos, University of California, Irvine
Zachary Reitz, University of California, Irvine
Honglei Ren, University of California, Irvine
Yutong Sha, University of California, Irvine
Katherine Sheu, University of California, Los Angeles
Wylie Stroberg, University of Michigan
Suhas Sureshchandra, University of California, Irvine
David Tatarakis, University of California, Irvine
Robert Taylor, University of California, Irvine
Alex Thiemicke, Vanderbilt University
Xiaojun Tian, Arizona State University
Alexandria Volkening, Northwestern University
Remy Vu, University of California, Irvine
Biao Wan, Beijing Computational Science Research Center
Qixuan Wang, University of California, Riverside
Shuxiong Wang, University of California, Irvine
Xiaojie Wang, University of California, Irvine
Yifan Wang, University of California, Berkeley
Lily Widyastuti, University of California, Irvine
N Ezgi Wood, University of Texas Southwestern Medical Center
Melanie Worley, University of California, Berkeley
Lihua Zhang, University of California, Irvine
Yan Zhang, University of Pittsburgh
Peijie Zhou, University of California, Irvine