

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Cell Competition in Development and Disease (B6)

February 24-28, 2019 • Granlibakken Tahoe • Tahoe City, California, USA

Scientific Organizers: Margaret A. Goodell, Laura A. Johnston and Thomas P. Zwaka

Supported by the Directors' Fund

Abstract & Scholarship Deadline: October 24, 2018 / Abstract Deadline: November 28, 2018 / Discounted Registration Deadline: January 8, 2019

SUNDAY, FEBRUARY 24

Arrival and Registration

MONDAY, FEBRUARY 25

Cell Competition in Development

Laura A. Johnston, Columbia University, USA
Tissue Ecology: Sensing and Responding to Altered Cell Fitness

Magdalena D. Zernicka-Goetz, University of Cambridge, UK
Cell Selection in Mammalian Embryos

Hiromitsu Nakauchi, Stanford University, USA
Interspecies Chimeras: Competition or Survival

Nicholas E. Baker, Albert Einstein College of Medicine, USA
Ribosomal Control of Cell Competition

Short Talk(s) Chosen from Abstracts

Keynote Address

Kevin Foster, University of Oxford, UK
Evolution of Competition and Cooperation in Microbes

Evolution of Competition and Cooperation

Gad Shaulsky, Baylor College of Medicine, USA
Cooperation and Competition in Dictyostelium

Anthony De Tomaso, University of California, Santa Barbara, USA
Inter-Individual Competition in a Colonial Organism

Short Talk Chosen from Abstracts

Poster Session 1

TUESDAY, FEBRUARY 26

Stem Cell Competition

Thomas P. Zwaka, Icahn School of Medicine at Mount Sinai, USA
Competitive Interactions in the Pluripotent Stem Cell Compartment

Fernando D. Camargo, Boston Children's Hospital, USA
Stem Cell Dynamics and Growth in the Gut

Hans C. Clevers, Hubrecht Institute, Netherlands
Lgr5 Stem Cell-Based Organoids

Valentina Greco, Yale School of Medicine, USA
Competitive Behavior during Skin Regeneration

Short Talk(s) Chosen from Abstracts

Workshop 1: Technologies for Clonal Tracking

***Thierry Voet**, KU Leuven, Belgium

***Fernando D. Camargo**, Boston Children's Hospital, USA
Short Talks Chosen from Abstracts

The Germline

Alejandro Sánchez Alvarado, Stowers Institute for Medical Research/HHMI, USA
The Reproductive and Developmental Plasticity of Planarians

Diana J. Laird, University of California, San Francisco, USA
Clonal Dynamics of Primordial Germ Cells

Erika Matunis, Johns Hopkins University School of Medicine, USA
Competing for the Niche in the Fly Testis

Short Talk Chosen from Abstracts

Poster Session 2

WEDNESDAY, FEBRUARY 27

Mosaicism and Selection in Normal Tissues

Margaret A. Goodell, Baylor College of Medicine, USA
Mutations Improving Fitness of the HSC

Inigo Martincorena, Wellcome Trust Sanger Institute, UK
Somatic Evolution in Healthy Tissues

Philip H. Jones, Wellcome Trust Sanger Institute / University of Cambridge, UK
Clonal Dynamics in the Skin

Irving L. Weissman, Stanford University, USA
Mosaicism in Normal Tissues

Short Talk(s) Chosen from Abstracts

Workshop 2: Oncogenes and Tumor Suppressors as Drivers in Competition

***Philip H. Jones**, Wellcome Trust Sanger Institute / University of Cambridge, UK

***Laura A. Johnston**, Columbia University, USA
Short Talks Chosen from Abstracts

Cell Selection in Human Disease

Thierry Voet, KU Leuven, Belgium
Genome Instability and Fitness in the Developing Human Embryo

David FitzPatrick, University of Edinburgh, UK
Cohesinopathies as a Paradigm for Human Mosaicism

Matthew Hurles, Wellcome Trust Sanger Institute, UK
Mosaicism and Implications for Human Developmental Disorders

Short Talk Chosen from Abstracts

Poster Session 3

THURSDAY, FEBRUARY 28

AGING and Pre-Malignancy

James DeGregori, University of Colorado Denver School of Medicine, USA

The Ecology of Cancer: How Changes in Tissue Microenvironments Drive Cancer Evolution as we Age

Speaker to be Announced

Coleman Lindsley, Dana-Farber Cancer Institute, USA
Clonal Hematopoiesis as Stem Cell Competition

Tatsushi Igaki, Kyoto University Graduate School of Biostudies, Japan
Mechanism of Tumor-Suppressive Cell Competition

Short Talk(s) Chosen from Abstracts

Workshop 3: Modeling Cell Competition

***Kevin Foster**, University of Oxford, UK

Short Talks Chosen from Abstracts

Closing Keynote Address

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Gines Morata, Universidad Autonoma de Madrid, Spain
*The Two Faces of Cell Competition: Tumor-Suppressing or
Tumor-Stimulating*

Competition in Cancer

Yasuyuki M. Fujita, Hokkaido University, Japan
*Sequential Oncogenic Mutations Profoundly Influence the Outcome of
Cell Competition*

Harold E. Varmus, Weill Cornell Medical College, USA
*Turning Clues from Cancer Genomics into Mechanisms of Cancer
Development and Evolution*

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)

FRIDAY, MARCH 1

Departure