

# Annual Meeting of the Israel Stem Cell Society

## May 31, 2018

The Porter School of Environmental Studies  
Tel Aviv University Campus

ISCS



## SCIENTIFIC PROGRAM

**THURSDAY, May 31, 2018**

08:00 *Registration Opens*

09:00 **OPENING REMARKS**  
**Benjamin Dekel**, President, Israel Stem Cell Society

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09:05-10:25 **Session I: PLURIPOTENT STEM CELL**

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Chairs: **Yossi Buganim**, Israel  
**Achia Urbach**, Israel

- 09:05 **Invited Lecture**  
Evaluating the developmental potential of oocytes and preimplantation embryos based on mechanical and machine learning tools  
**Amnon Buxboim**  
Dept. of Cell & Developmental Biology, The Alexander Silberman Institute of Life Sciences, Edmond J. Safra Campus, The Hebrew University of Jerusalem, Jerusalem, Israel
- 09:25 From human naive pluripotent stem cells to studying early human development  
**Jonathan Bayerl**, Muneef Ayyash, Tom Shani, Yair Manor, Ohad Gafni, Sergey Viukov, Mirie Zerbib, Alejandro Aguilera, Oz Yermiahu, Rada Massarwa, Jacob Hanna  
Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel
- 09:35 Large scale characterization of X chromosome inactivation status in human pluripotent stem cells  
**Shiran Bar**, Lev Seaton, Nissim Benvenisty  
The Azrieli Center for Stem Cells and Genetic Research Dept. of Genetics, Institute of Life Sciences, The Hebrew University, Jerusalem, Israel
- 09:45 **Invited Lecture**  
Regulation of differentiation by RNP networks  
**Micha Drukker**  
Institute for Stem Cell Research, Helmholtz Zentrum, München, Germany

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**THURSDAY, May 31, 2018 (cont.)**

09:05-10:25

**Session I: PLURIPOTENT STEM CELL (cont.)**

10:05

**Invited Lecture**

DNA methylation dynamics at pluripotent specific enhancers

**Yonatan Stelzer**

Dept. of Molecular Cell Biology, Weizmann Institute of Science, Rehovot, Israel

10:25

*Coffee Break, Poster Viewing and Visit the Exhibition*



10:50 - 12:00

**Session II: HEMATOPOIETIC STEM CELL**

Chairs: **Roi Gazit**, Israel  
**Liran Shlush**, Israel

10:50

Microphysiological human iPSC-based isogenic blood brain barrier-on-chip platform for personalized medicine

**Gad Vatine**

Dept. of Physiology and Cell Biology and the Regenerative Medicine and Stem Cell (RSMC) Research Center, Ben Gurion University, Beer Sheva, Israel

11:00

Modelling DNMT3A - deficient human over growth syndrome

**Ayala Tovy**<sup>1,2</sup>, Yung-Hsin Huang<sup>2,1</sup>, Hyun Jung Park<sup>3</sup>, Anna Guzman<sup>2,1</sup>,

Aaron Jeffries<sup>4</sup>, Emma Baple<sup>4</sup>, Andrew Crosby<sup>4</sup>, Wei Li<sup>3</sup>, Margaret Goodell<sup>2,1</sup>

<sup>1</sup>Center for Cell and Gene Therapy, Baylor College of Medicine, Houston, TX, USA,

<sup>2</sup>Stem Cells and Regenerative Medicine Center, Baylor College of Medicine, Houston,

TX, USA, <sup>3</sup>Division of Biostatistics, Dan L Duncan Cancer Center, Baylor College of

Medicine, Houston, TX, USA, <sup>4</sup>University of Exeter Medical School, Rild Wellcome

Wolfson Centre, Royal Devon & Exeter NHS Foundation Trust, Royal Devon & Exeter

NHS Foundation Trust, Exeter, UK

11:10

Mitochondria transfer from hematopoietic stem and progenitor cells to BM stromal cells via CX43 gap junctions and AMPK signaling restores stromal cell function following irradiation

**Karin Golan**<sup>1</sup>, Abishek Singh<sup>2</sup>, Katya Kopitman<sup>1</sup>, Eman Khatib-Massalha<sup>1</sup>, Orit Kollet<sup>1</sup>,

Francesca Avemaria<sup>1</sup>, Mohana-Devi Subramaniam<sup>1</sup>, Anju Kumari<sup>1</sup>, Mark J. Althoff<sup>2</sup>,

Ashley Wellendorf<sup>2</sup>, Shiri Gur-Cohen<sup>1</sup>, Tomer Itkin<sup>1</sup>, Jose A. Cancelas<sup>2</sup>, Tsvee Lapidot<sup>1</sup>

<sup>1</sup>Dept. of Immunology, Weizmann Institute of Science, Rehovot, Israel, <sup>2</sup>Division of

Experimental Hematology and Cancer Biology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, USA

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10:50 - 12:00

**Session II: HEMATOPOIETIC STEM CELL (cont.)**

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11:20 **Invited Lecture**

Regulation of DNA damage response in human hematopoietic stem cells

**Michael Milyavsky**

Dept. of Pathology, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel

11:40 **Invited Lecture**

Clonal hematopoiesis of indeterminate potential: A stem cell disorder of aging

**Siddhartha Jaiswal**

Dept. of Pathology, Stanford University, Palo Alto, CA, USA

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12:00-13:00

**POSTER SESSION**

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13:00 *Lunch Break, Poster Viewing and Visit the Exhibition*

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14:00-14:15

**SHORT LECTURES**

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14:00 Grant overview

**Sharon Yagur-Kroll**

Biomedical Research, Israel's Ministry of Science and Technology, Jerusalem, Israel

14:10 INACA: Israeli Network for Advanced Cell Applications – Utilizing the local ecosystem to address bottlenecks in the transition from basic research to commercialization

**Shir Mnuchin**

Bioforum Ltd., Israel

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**THURSDAY, May 31, 2018 (cont.)**

14:15-15:25

**Session III: DEVELOPMENT AND EPITHELIAL STEM CELL**

Chairs: **Limor Landsman**, Israel  
**Ruby Shalom-Feuerstein**, Israel

14:15 **Invited Lecture**

A novel mechanism regulating organ size and skin regeneration

**Yaron Fuchs**

Laboratory of Stem Cell Biology and Regenerative Medicine, Technion-Israel Institute of Technology, Haifa, Israel

14:35 Understanding corneal stem cell dynamics during homeostasis, dedifferentiation and pathology

**Swarnabh Bhattacharya**<sup>1</sup>, Waseem Nasser<sup>1</sup>, Aya Amitai-Lange<sup>1</sup>, Despina Soteriou<sup>2</sup>, Rana Hanna<sup>3</sup>, Beatrice Tiosano<sup>3</sup>, Yaron Fuchs<sup>2</sup>, Ruby Shalom-Feuerstein<sup>1</sup>

<sup>1</sup>Genetics and Developmental Biology, Technion Israel Institute of Technology, Haifa,

<sup>2</sup>Dept. of Biology and Lokey Center, Technion Israel Institute of Technology, Haifa,

<sup>3</sup>Dept. of Ophthalmology, Hillel Yaffe Medical Center, Hadera, Israel

14:45 TNF promotes intestinal regeneration via activation of reserve cell pool

**Upasana Das Adhikari**<sup>1</sup>, Audrey Lasry<sup>2</sup>, Ela Elyada<sup>2</sup>, Nofar Amsalem<sup>2</sup>, Shahaf May<sup>2</sup>, Eitan Winter<sup>3</sup>, Yinon Ben Neria<sup>2</sup>

<sup>1</sup>Immunology, Lautenberg, Jerusalem, <sup>2</sup>Dept. of Immunology, Hadassa Hebrew

University of Jerusalem, Jerusalem, <sup>3</sup>Bioinformatics Unit of the I Core Computation

Center, Hebrew University Hadassah Ein Kerem, Jerusalem, Israel

14:55 **Invited Lecture**

Spatial reconstruction of single enterocytes uncovers broad zonation along the intestinal villus axis

**Shalev Itzkovitz**

Dept. of Molecular Cell Biology, Weizmann Institute of Science, Rehovot, Israel

15:15 The wave complex regulates epidermal proliferation and morphogenesis

**Yonatan Cohen**<sup>1</sup>, Chen Luxenburg<sup>2</sup>

<sup>1</sup>Development and Cell Biology, Sakler Medical School, Tel Aviv, <sup>2</sup>Dept. Of Cell and

Developmental Biology, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel

15:25 *Coffee Break, Poster Viewing and Visit the Exhibition*



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15:50-17:10

### Session IV: REGENERATION, TISSUE ENGINEERING A HUMAN MODELS

Chairs: **Tal Dvir**, Israel  
**Jonathan Leor**, Israel

15:50 **Invited Lecture**

Harnessing the power of stem cell and nature based material for regenerative therapy

**Marcelle Machluf**

Faculty of Biotechnology and Food Engineering, Technion - Israel Institute of  
Technology, Haifa, Israel

16:10 Mouse-human neural crest chimeras for modeling human diseases and cancer in vivo

**Malkiel A Cohen**, Rudolf Jaenisch

The Whitehead Institute for Biomedical Research, MIT, Cambridge, MA, USA

16:20 A novel potential therapy for Critical Limb Ischemia: blood-derived stem/progenitor  
cells specifically activated by dendritic cells

**Yael Porat**<sup>1</sup>, Mark Niven<sup>2</sup>, Galit Sibvak<sup>3,4</sup>, Offer Galili<sup>5</sup>, Ester Kafri<sup>2</sup>, Mor Moshe<sup>6</sup>,  
Noa Horowitz<sup>6</sup>, Shira Turgeman<sup>6</sup>, Michael Frogel<sup>6,7</sup>, Michael Belkin<sup>8,9</sup>

<sup>1</sup>Development, Bio Gen Cell Ltd, Netanya, Israel, <sup>2</sup>Bildirici Diabetes Center, Sanz  
Medical Center, Laniado Hospital, Netanya, Israel, <sup>3</sup>Vascular Surgery, Rabin Medical  
Center, Petach Tikva, Israel, <sup>4</sup>Vascular Surgery, Sanz Medical Center, Laniado Hospital,  
Netanya, Israel, <sup>5</sup>Vascular Surgery, Carmel Hospital, Haifa, Israel, <sup>6</sup>Development, Bio  
Gen Cell. Ltd, Netanya, Israel, <sup>7</sup>Disaster Medicine, Maimonides Medical Center, NY,  
USA, <sup>8</sup>Eye Institute, Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel,  
<sup>9</sup>Clinical Department, Bio Gen Cell. Ltd, Netanya, Israel

16:30 **Invited Lecture**

Modified mRNA as therapeutic tool for mammalian cardiac regeneration post injury

**Lior Zangi**

Icahn School of Medicine at Mount Sinai, New York, NY, USA

16:50 **Invited Lecture**

Engineering personalized tissue implants and organs

**Tal Dvir**

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and Nanotechnology, The George S. Wise Faculty of Life Sciences, Tel Aviv University,  
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