
Program

June 16, 2011

- 7:45 Registration
8:15 Giuseppe Bernardi *Welcome*
8:20 Enrico Mihich *Introduction*
8:30 David Livingston *Focus & Goals*
8:45 Rakesh Jain – *Keynote Address: Normalizing tumor microenvironment to treat cancer: From mathematical model to mouse to man*

Session I – Cellular mechanics and cell function

Chair/Moderator: S Piccolo

- 9:30 Stefano Piccolo – *Linking mechanosensing to gene expression*
09:55 Discussion
10:15 Coffee break
10:35 Joachim Spatz – *Induction and analysis of cell responses by nanoscopically defined matrix cues*
11:00 Discussion
11:20 David Weitz – *Cell volume and cell stiffness: The role of the extracellular matrix mechanics*
11:45 Discussion
12:05 Dennis Discher – *From extracellular matrix mechanics and nuclear rigidity to flexibility in anti-cancer therapy*
12:30 Discussion
12:50 Lunch
14:00 Cynthia Reinhart-King – *Cellular force generation in metastasis*
14:25 Discussion

Session II – Cellular microenvironment and cellular immunity

Chair/Moderator: P Friedl

- 14:45 David Mooney – *Polymers to control immune cell trafficking*
15:10 Discussion
15:30 Michael Sixt – *Mechanics of leukocyte locomotion*
15:55 Discussion
16:15 Valerie Weaver – *The force journey of a tumor cell*
16:40 Discussion
17:00 Peter Friedl – *Infrared multiphoton microscopy to visualize cancer invasion and response to molecular therapy*
17:25 Discussion

17:45 Adjourn

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Continuation of session II

- 9:00 Melody Swartz – *Tumor-associated lymphatics: Hijacking mechanisms of peripheral tolerance*
9:25 Discussion

Session III – Nanotechnology, valuable cell capture and therapeutic delivery

Chair/Moderator: J Hubbell

- 9:45 Kazunori Kataoka – *Supramolecular nanomedicines for targeted cancer therapy*
10:10 Discussion
10:30 Coffee break
10:50 Mauro Ferrari – *Nanomedicine enables personalized medicine*
11:15 Discussion
11:35 Jeffrey Hubbell – *Using material and matrix engineering to explore cell microenvironment and cell immunoenvironment interactions*
12:00 Discussion

- 12:20 Mehmet Toner – *Clinical microfluidics and the applications in circulating tumor cells*
12:45 Discussion

13:05 Poster Session & Lunch

Session IV – Animal cancer models

Chair/Moderator: A Berns

- 15:30 Tyler Jacks – *Lung cancer progression*
15:55 Discussion
16:15 Anton Berns – *Tumor cell heterogeneity and cell of origin in small cell lung cancer in mice*
16:35 Discussion

16:55 Adjourn

20:00 Symposium Dinner

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Session V – Molecular imaging and biological sensors

Chair/Moderator: R Weissleder

- 9:00 Viola Vogel – *How cells exploit mechanical forces to regulate cell functions*
9:25 Discussion
9:45 Philippe Bousso – *Visualizing CTL and NK cell activity in tumors*
10:10 Discussion
10:30 Michal Neeman – *Molecular imaging as a tool for revealing the control of tumor angiogenesis*
10:50 Discussion
11:20 Ralph Weissleder – *MicroNMR for rapid and multiplexed molecular analysis of scant human cancer cells*
11:45 Discussion
12:05 David Livingston – *Concluding Remarks*

12:30 Lunch & Adjourn

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Invited Participants

- **Anton Berns**
The Netherlands Cancer Institute, Amsterdam, The Netherlands
- **Philippe Bousso**
Pasteur Institute, Paris, France
- **Dennis Discher**
University of Pennsylvania, Philadelphia, PA
- **Mauro Ferrari**
The Methodist Hospital Res Inst, Houston, TX
- **Peter Friedl**
Nijmegen Centre for Molecular Life Sciences (NCMLS), Nijmegen, The Netherlands
- **Jeffrey Hubbell**
Ecole Polytechnique Federale de Lausanne (EPFL), Lausanne, Switzerland
- **Rakesh Jain**
Massachusetts General Hospital, Boston, MA
- **Tyler Jacks**
MIT, David H Koch Inst for Integrative Cancer Research, Boston, MA
- **Kazunori Kataoka**
University of Tokyo, Japan
- **David Livingston**
Dana Farber Cancer Inst, Boston, MA
- **Enrico Mihich**
Dana Farber Cancer Inst, Boston, MA
- **David Mooney**
Harvard University, Cambridge, MA

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Invited Participants

- **Michal Neeman**
The Weizmann Inst of Science, Rehovot, Israel
- **Stefano Piccolo**
University of Padova, Italy
- **Cynthia Reinhart-King**
Cornell University, Ithaca, NY
- **Michael Sixt**
Max Planck Inst of Biochemistry, Martinsried, Germany
- **Joachim Spatz**
Max Planck Inst for Metals Research, Stuttgart, Germany
- **Melody Swartz**
Ecole Polytechnique Federale de Lausanne (EPFL),
Lausanne, Switzerland
- **Mehmet Toner**
Harvard Medical School, Massachusetts General
Hospital, Cambridge, MA
- **Viola Vogel**
Swiss Federal Institute of Technology (ETH), Zurich,
Switzerland
- **Valerie Weaver**
Center for Bioengineering & Tissue Regeneration, Univ
California at San Francisco, CA
- **Ralph Weissleder**
Center for Systems Biology, Massachusetts General
Hospital, Cambridge, MA
- **David Weitz**
Harvard Univ School of Engineering & Applied Sciences,
Cambridge, MA

The Pezcoller Foundation

The Pezcoller Foundation is a non-profit organisation created in 1980 by Prof. Alessio Pezcoller (1896 - 1993), Chief Surgeon of Santa Chiara Hospital of Trento, Italy. The goal of the Foundation is to promote biomedical research.

Activities:

- **PEZCOLLER FOUNDATION-AACR INTERNATIONAL AWARD FOR CANCER RESEARCH** – 75.000 Euro: this prize is presented, every year, to a scientist who has made a major scientific discovery in the field of cancer.
- **PEZCOLLER FOUNDATION-ECCO RECOGNITION FOR CONTRIBUTION TO ONCOLOGY** – 30.000 Euro: this prize is presented, every two years to a single individual (scientist, clinician, nurse. etc.) for his/her professional life dedication to the improvement of cancer treatment, care and research.
- **THE PEZCOLLER SYMPOSIA**: a series of annual symposia promoting interactions among scientists working at the cutting edge of basic oncological sciences.
- **PEZCOLLER SEMINARS**: a series of educational meetings for medical doctors.
- **PEZCOLLER FOUNDATION FELLOWSHIPS**: for professional updating in oncology.
- **PEZCOLLER FOUNDATION GRANTS**: for top oncological research programs.
- **THE PEZCOLLER FOUNDATION JOURNAL**: this periodical is published in order to provide a direct link, at six month interval, between the Pezcoller Foundation and the international medical and scientific community.

This Symposium is supported by

- Fondazione Cassa di Risparmio di Trento e Rovereto
- Provincia Autonoma di Trento
- Comune di Trento
- Comune di Rovereto

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The Pezcoller Symposia

23rd Pezcoller Symposium

**ENGINEERING
INFLUENCES
IN CANCER
RESEARCH**

Trento, Italy,
June 16-18, 2011

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The Pezcoller Foundation Symposia

23rd Pezcoller Symposium
**ENGINEERING INFLUENCES
IN CANCER RESEARCH**

Trento, Italy, June 16-18, 2011
Conference Hall of Fondazione Cassa di Risparmio di
Trento e Rovereto, via Calepina 1 – 38122 Trento

Co-chairmen and Program Committee
Peter Friedl, Jeff Hubbell, David Livingston
and Enrico Mihich

The focus of the meeting will extend across a significant segment of scientific activity in this field from a mechanistic analysis of how mechanical forces affect cellular signaling and other key cell behaviors to a discussion of engineering science contributions to an analysis of the cellular microenvironment and cellular immunity, to nanotechnology, valuable cell capture, and therapeutic delivery, to the study of animal cancer models and, finally, to biosensing, intravital microscopy, and specific molecular imaging as modalities that can enrich the deconvolution of tumor cell and whole tumor behavior.

In these annual events speakers give approximately 25 minute talks followed by a similar amount of time for audience discussion. There will be approximately 20 speakers and these meetings have regularly provided a fertile climate for highly revealing and stimulating scientific discussion on topics of extraordinary interest in cancer science.

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