**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
10:15 Joachim Spatz – Induction and analysis of cell responses by nanoscopically defined matrix cues
10:35 David Weitz – Cell volume and cell stiffness: The role of the extracellular matrix mechanics
11:20 David Discher – From extracellular matrix mechanics and nuclear rigidity to flexibility in anticancer therapy
11:45 Coffee break
12:05 Dennis Discher – From extracellular matrix mechanics and nuclear rigidity to flexibility in anticancer therapy
12:30 Lunch
14:00 Cynthia Reinhardt-King – Cellular force generation in metastasis
14:25 Poster Session & Lunch

**Session II – Cellular microenvironment and cellular immunity**
Chair/Moderator: P Friedl
14:45 David Mooney – Polymers to control immune cell trafficking
15:10 Michael Sixt – Mechanics of leukocyte locomotion
15:35 David Livingston – The force journey of a tumor cell
16:15 Valerie Weaver – Infrared multiphoton microscopy to visualize cancer invasion and response to molecular therapy
17:25 Discussion
17:45 Adjourn

**June 17, 2011**

*Continuation of session I*

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

**Session II – Nanotechnology, valuable cell capture and therapeutic delivery**
Chair/Moderator: J Hubbell
9:45 Kazunori Kataoka – Supermolecular 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 immunomicroenvironment 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

**June 18, 2011**

**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 Michael Neeman – Molecular imaging as a tool for revealing the control of tumor angiogenesis
10:50 Discussion
11:20 Ralph Weissleder – MicroMRI for rapid and multiplexed molecular analysis of scant human cancer cells
11:45 Discussion
12:05 David Livingston – Concluding Remarks
12:30 Lunch & Adjourn

**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
The Pezcoller Foundation Symposia

23rd Pezcoller Symposium
ENGINEERING INFLUENCES IN CANCER RESEARCH
Trento, Italy, June 16-18, 2011

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

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.

Invited Participants

– Michal Neeman  
  The Weizmann Inst of Science, Rehovot, Israel

– Stefano Piccolo  
  University of Padova, Italy

– Cynthia Reinhardt-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 SYMPOSIAS: 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 two 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
– Fondazione Pezcoller

The Pezcoller Foundation

This Symposium is supported by

– Fondazione Pezcoller
– Provincia Autonoma di Trento
– Comune di Trento
– Comune di Rovereto

23rd Pezcoller Symposium
ENGINEERING INFLUENCES IN CANCER RESEARCH
Trento, Italy, June 16-18, 2011

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

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.