Invitation to participate in the advanced school for

Neuroelectronic Hybrid Systems, 15-20 March 2009

I am pleased to invite you to take advantage of the unique opportunity to learn from a multidisciplinary team of international experts on the emerging field of neuroelectronic hybrids.

Introduction: Basic neurobiological research, as well as biomedical oriented-devices, increasingly make use of silicon-based microstructures. Major efforts in this field are devoted to research and development of efficient and durable Neuro-Electronic hybrid systems. **These efforts are driven by the aspiration to use Neuro-Electronic hybrid systems for basic neurobiological research, for high throughput pharmacological screenings, the construction of "hybrid computers" and future use to link brain and computers.**

While the fundamental scientific importance and the future applications of direct and reliable bidirectional interfacing of neuronal networks with transistors are enormous, only a small number of multidisciplinary research groups are practically engaged in research and development of the necessary academic know-how and technological skills. This is probably due to the inherent difficulty of merging and coordinating academic expertise in neuroscience, chemistry, physics, computer sciences and technological skills of electrical and chemical micro and nano- engineering.

Aims: **The advanced school devoted to "Neuroelectronic-Hybrids systems"** is designed to introduce the field to students and faculty in the fields of life sciences, medicine, chemistry, physics, computer sciences and engineering in three steps: (a) introduction of the biological, chemical, and physical building blocks of the hybrids. Emphasis will be given to the inherent problems of communicating living cells and electronic devices (modes of energy transfer and signaling, spatial and temporal stability/dynamics and motility of the components) and physical and chemical interfacing of living cells with electronic devices (2 days). (b) Learning the current scientific and technological achievements of the field. This will be done in the form of case studies-like presentations delivered by leading experts in

the field, followed by thorough discussions (3 days). (c) Looking into the future, setting short and long term scientific and technological goals and attempting to evaluate the theoretical boundaries of the field (half a day).

Students attending the school have an opportunity to present and discuss their research program and results with the faculty in a traditional special poster session.

It is expected that the school will provide a coherent multidisciplinary introduction of the field to a multinational group of advanced students that will lead the field in the near future.

An international team of leading scientists in the field confirmed participating in the school. The following is a partial list: P. Fromherz (Germany), J. Spatz (Germany), L. Ballerini (Italy), S. Marom, (Tech), I. Willner (HUJI), G. Borghes (Belgium), C. Bartic (Belgium), B. Geiger (Wiz), B. Wheeler (USA), E. Keefer (USA), S. Yitshaik, (HUJI), J. M. Giugliano (Italy), J. Shappir (HUJI), Y. Hanein (TAU) , Uri Sivan (Tech), E. Ben-Jacob (TAU), E. Vaadia and M. E. Spira (HUJI).

Applications and registration to the school should be made via the website at http://www.as.huji.ac.il/schools/neh. (Students may receive course credit in accordance with the policy of their university) Registration fee: 150NIS (this cover lunch every day). Application deadline: February 15 2009. Early registration is recommended due to space limitations. For additional information and hotel reservation contact us through the website. If you need a scholarship to cover the tuition fee or your say in Jerusalem, apply for one. We will do our best to help.

For general information on the School for advanced studies of the Hebrew University of Jerusalem and previous courses please see http://www.as.huji.ac.il.

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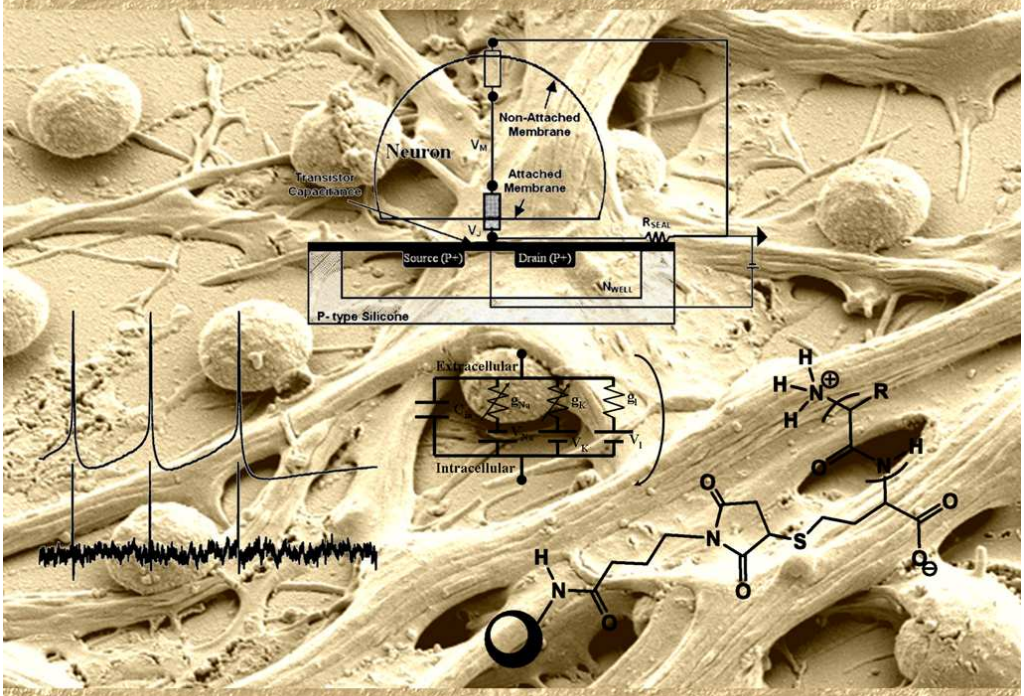
March 15-20, 2009
Advanced School for

NEUROELECTRONIC HYBRIDS



Speakers

Laura Ballerini (U. of Trieste, Italy)
Carmen Bartic (IMEC, Belgium)
Eshel Ben-Jacob (Tel Aviv University, Israel)
Gustaaf Borghs (IMEC, Belgium)
Peter Fromherz (MPI, Germany)
Benny Geiger (Weizmann Inst., Israel)
Michele Giugliano (U. of Antwerp, Belgium)
Yael Hanein (Tel Aviv University, Israel)
Edward W. Keefer (U. of Texas Southwestern USA)
Shimon Marom (Technion, Israel)
Joseph Shappir (The Hebrew University, Israel)
Uri Sivan (Technion, Israel)
Joachim Spatz (U. of Heidelberg, Germany)
Micha E. Spira (The Hebrew University, Israel)
Bruce C. Wheeler (U. of Illinois, USA)
Itamar Willner (The Hebrew University, Israel)
Shlomo Yitzchaik (The Hebrew University, Israel)
Eilon Vaadia (The Hebrew University, Israel)

Director: Micha E. Spira
Co-Director: Shimon Marom

The School is aimed at graduate students and postdoctoral fellows from all over the world. Registration Fee: $150 (150 NIS for Israeli students)

Applications should be made online via the website at: www.as.huji.ac.il/schools/neh/

Hotel reservations can be made through the school's administration.

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The Hebrew University of Jerusalem

Brain Storm project
European Union 7th Framework Programme
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