



**5<sup>th</sup> International Summer School on  
Emerging Technologies in Biomedicine**

**“High Throughput Communication between Brain  
and Machines”**

**September 26<sup>th</sup> - October 1<sup>st</sup>, 2010**

**Hestia of Sciences**

**University of Patras**

**GREECE**

**PROGRAM**



The 5<sup>th</sup> International Summer School on Emerging Technologies in Biomedicine: **“High Throughput Communication between Brain and Machines”**, is sponsored by the European programme COST. The COST action (BM0601) is NEUROMATH.

# Program

Sunday, September 26<sup>th</sup>, 2010

---

17:00                    Opening Registration  
18:00 19:30            **Welcome speeches**  
                              Tassos Bezerianos +Fabio Babiloni  
19:30- – ...            Ice-breaking Party

Monday, September 27<sup>th</sup>, 2010

---

**Chairperson: Fabio Babiloni**

09:00 – 10:00        **Anastasios Bezerianos, Tassos Bountis**  
                              *Opening of the 5<sup>th</sup> International Summer School*  
                              Late registrations  
10:00 – 11:00        **Fivos Panetsos**  
                              *Anatomical, neurohistochemical and physiological alterations*  
                              *of the Central Nervous System induced by BMI*  
11:00 – 11:30        Coffee break  
11:30 – 12:30        **Nicho Hatsopoulos**  
                              *Cortically controlled brain-machine interfaces using invasive*  
                              *multielectrode arrays*  
12:30 – 14:30        Lunch Break

**Chairperson: Anastasios Bezerianos**

14:30 – 16:30        **Metin Akay**  
                              *The future of neuroengineering, in education, training and*  
                              *research*  
16:30 – 17:00        Coffee-Break.

**Chairperson: Metin Akay**

17:00 – 18:00        **Pedro Larranaga**  
                              *Computational Modeling in Neuroscience. Experiences in the*  
                              *Cajal Blue Brain Project:part\_1*  
18:00 – 19:00        **Concha Bielza**  
                              *Computational Modeling in Neuroscience. Experiences in the*  
                              *Cajal Blue Brain Project:part\_2*

EVENING              **Dinner with the Experts**

## Tuesday, September 28<sup>th</sup> , 2010

---

### Chairperson: *Georgios Kostopoulos*

- 09:00 – 11:00      **Andreas Ioannides**  
*Possible contributions of MEG to improvements of the speed of communication between brain and machine*
- 11:00 – 11:30      Coffee break

### Chairperson: *Georgios Kostopoulos*

- 11:30 – 13:30      **Selma Supek**  
*MEG – Neurodynamic insight into cortical processing pathways*
- 13:30 – 15:00      Lunch break

### Chairperson: *Andreas Ioannides*

- 15:00 – 16:30      **Nikos Logothetis**  
*Neural mechanisms of perception and object recognition*
- 16:30 – 17:00      Coffee-Break

### Chairperson: *Tassos Bountis*

- 17:00 – 19:00      **Panos Pardalos**  
*Global Optimization in Quantitative Neuroscience*

EVENING              **Dinner with the Experts**

## Wednesday, September 29<sup>th</sup> , 2010

---

### Chairperson: *Nitish Thakor*

- 09:00 – 10:30      **Anastasios Bezerianos**  
*Dynamic Brain Connectivity Mapping*
- 10:30 – 11:00      Coffee Break +Light lunch
- 11:00 – 19:00      **Excursion**  
*The excursion will start with a visit in the recently opened Archeological Museum of Patras. Next we will cross the famous Rio-Antirio bridge and visit the small island in Korinthiakos gulf, Trizonia (with the opportunity to swim in deep blue waters).*

EVENING              **Dinner with the Experts**

## Thursday, September 30<sup>th</sup> , 2010

---

### Chairperson: *Selma Supek*

- 09:00 – 10:30      **Fabio Babiloni**  
*Overcoming the bottle necks on brain machine communications*
- 10:30 – 11:00      Coffee break
- 11:00 – 12:30      **Sara Gonzales Andino**  
*Patient Machine interfaces: The new generation of Brain Computer Interfaces*
- 12:30 – 14:00      **Marcin Byszuk**  
*Stimulation methods for high-speed SSVEP BCI systems*
- 14:00 – 15:00      Lunch break

### Chairperson: *Jurgen Kurths*

- 15:00 – 16:30      **Nitish Thakor**  
*Next Generation BCI for Revolutionizing Neuroprosthetics*
- 16:30 – 17:00      Coffee-break

### Chairperson: *Andreas Ioannides*

- 17:00 – 18:00      **Christopher James**  
*Brain-to-brain communication: signal processing challenges in BCI and B2B*
- 18:00 – 19:00      **Jurgen Kurths**  
*Synchronization and Complex Networks: Are such Theories Useful for Neuroscience?*
- 21:00 – ...      **Gala Dinner**  
*DJ music*

## Friday, October 1<sup>st</sup> , 2010

---

- 09:30 – 10:30      *Discovering the interactive exhibitions of Patras Hestia of Sciences*

### Chairperson: *Anastasios Bezerianos*

- 10:30 – 12:00      **Gunther Krausz**  
*Real time Experiment of SSVEP BCI systems and the New INTENDIX software*
- 12:00 – 12:30      Closing of the Summer School 2010  
*Concluding remarks*