

## **NE.W.S.: NEUROENGINEERING WORKSHOP AND ADVANCED SCHOOL**

**June 10 – 13, 2002**  
**University of Genova**  
**<http://www.bio.dibe.unige.it>**

*Funded by:* University of Genova

*Organized by:* *Prof. Sergio Martinoia*  
[Neuroengineering and Bio-nanoTechnologies Group](#), Department of  
Biophysical and Electronic Engineering ([DIBE](#)), University of Genova  
*Prof. Pietro Morasso*  
Department of Communications, Computer and System Sciences ([DIST](#)),  
University of Genova

### **NEUROENGINEERING MAIN GOAL:**

to understand , modify and use brain plasticity in order to advance  
Neuroscience at the network level and to inspire new computer architectures.

Scientific background: Bioengineering, Electronics, Informatics, Neuroscience.

How to reach the main goal:

- By interfacing in vitro neurons to standard and microelectronic transducers capable to monitor and modify the neuron electrophysiological activity
- By creating hybrid neuro-electronic systems
- By developing neuro-prostheses
- By computer simulating plasticity at the network level
- By developing neuromorphic silicon neurons

General topics of the course are:

- **The neural code and plasticity**
- **Neuromorphic engineering and micro-nano-technologies**
- **Brain-computer interfaces**
- **Robotics and Bio-robotics**

### **INVITED SPEAKERS:**

Fabio Babiloni, Department of Human Physiology and Pharmacology, University of Rome  
"La Sapienza", Rome, Italy

Fabio Benfenati, Institute of Experimental Medicine, University of Genoa, Genoa, Italy

Luca Berdondini, Institute of MicroTechnology, University of Neuchatel, Neuchatel, Switzerland

Paolo Dario, Sant'Anna School of University Studies and Doctoral Research, Pisa, Italy

Stefano Fusi, Institute of Physiology, University of Bern, Bern, Switzerland

Stan Gielen, Department of Medical Physics and Biophysics, University of Nijmegen,  
The Netherlands

Michele Giugliano, Institute of Physiology, University of Bern, Bern, Switzerland

Giacomo Indiveri, Institute for Neuroinformatics, ETH / University of Zurich, Switzerland

Giorgio Metta, Humanoid Robotics Group, MIT - Artificial Intelligence Lab, Cambridge (MA),  
USA

Sandro Mussa-Ivaldi, Department of Physiology Northwestern University, Medical School,  
Chicago (IL), USA

Miguel Nicolelis, Department of Neurobiology, Duke University, Durham (NC), USA

Rolf Pfeifer, Department of Information Technology, University of Zurich, Switzerland

Michael Rudolph, Unite de Neuroscience Integratives et Computationelles,  
CNRS,Gif-sur-Yvette, France

Thomas Sinkjær, Centre for Sensory-Motor Interaction, Aalborg University, Denmark

Stefano Vassanelli, Department of Anatomy and Human Physiology, University of Padova, Italy

**REGISTRATION INFORMATION:**

registration deadline: 31<sup>st</sup> of May.

To register, please fill out the registration form below and send it by email to [news2002@bio\\_nt.dibe.unige.it](mailto:news2002@bio_nt.dibe.unige.it) .

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University of Genova,  
Faculty of Engineering, Villa Cambiaso, Conference Room,  
via Montallegro 1, 16145 Genova

Mr/Ms/Dr/Prof: \_\_\_\_\_  
Name: \_\_\_\_\_  
Affiliation: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Postal Code: \_\_\_\_\_  
Phone and Fax: \_\_\_\_\_  
Email: \_\_\_\_\_

Registration fee:

CHECK ONE:

- Euro 50 Registration Fee (Student)
- Euro 100 Registration Fee (Regular)

PREFERRED METHOD OF PAYMENT:

- Bank transfer: Bank CARIGE, Agency 41, ABI:6175, CAB: 1472  
c/c DIBE - University of Genova 5341/90.  
Each registrant is responsible for any and all bank charges.
- I wish to pay my fees cash at the beginning of the workshop.