

Webinars

# NeuroSpine - V International Meeting

**Regeneration & Rehabilitation in Brain and Spinal Cord Injuries**

November 16, 2020

# NeuroInformatica - IX Workshop Nazionale

**Intelligenza Artificiale, NeuroRobotica, BCI, Teleneurologia**

17 Novembre, 2020

@ITIM

Associazione Italiana di  
Telemedicina ed Informatica Medica



IITM

International Institute of Tele-Medicine  
Istituto Internazionale di Tele-Medicina

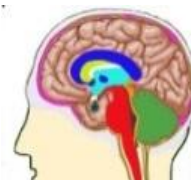


## FROM CELLS TO BIOENGINEERING AND NEURO-REHABILITATION APPLICATIONS

Molecular mechanisms, stem cells, Glial response, magnetic and laser therapy, Electro-stimulation Molecular and genomic data banks, Bioinformatics, NeuroInformatics, Brain Computer Interfaces, Neural Networks, Neural computation, Artificial Intelligence, Virtual brain and Augmented Reality, Machine Learning, Neurorehabilitation, robotics, neuro-bioengineering, sensors, devices, IoT, Telemedicine and telerehabilitation, Big Data, statistical data analysis & mining in observational studies & clinical trials

## TOPICS

- Neuro Immagini, Data Base e Sistemi Informativi in Neurologia
- Segnali fisiologici e Modellistica neuronale
- Intelligenza artificiale e DSS in medicina
- Neural computing e Reti Neurali artificiali
- modelli computazionali e Sistemi Cognitivi
- Web semantici e neuro-Ontologie
- Virtual Brain, realtà virtuale
- Esoscheletri per il cammino
- Biosensori, Telemonitoraggio, Teleriabilitazione
- Data Analysis, trial clinici in neurologia
- Neuroriabilitazione, robotica
- Brain Computer Interfaces, Neuro elettrostimolazione, ecc.
- Big data in neuroinformatica
- Bioinformatica e banche dati genomiche



Polo Neurologico Brianteo

Chair: **Francesco Sicurello** (President IITM/@ITIM, Universit. Milano Bicocca)

Co-Chairs: **Donatella Bonaiuti** (Consigl. Presiden. SIMFeR, Società Italiana di Medicina Fisica e Riabilitativa);  
**Angela Colantonio** (Director of Rehabilitation Institute, University of Toronto); **Wojciech Glinkowski** (President of Polish  
Telemedicine Society, CoE "TeleOrto", MUW; Gabinet Lekarski, Poland); **Antonio Oliviero** (Laboratory Head of Servicio de Salud  
de Castilla-La Mancha Albacete (SESCAM), Hospital Nacional de Paraplégicos, Toledo)

**Program**

## Monday/Lunedì 16 November: NeuroInformatics/NeuroSpine (II International Meeting)

**H. 9.00** (European Bruxelles time) - Registration

**H. 9.05 Welcome Address and introduction**

**Francesco Sicurello** (IITM/@ITIM & University of Milano Bicocca)

**Donatella Bonaiuti** (SIMFeR-Società Italiana di Medicina Fisica e Riabilitativa)

**Wojciech Glinkowski** (Telemedicine Society, Poland)

**H. 9.30 Big Data, Artificial Intelligence and Machine Learning in Medicine** (Chair. **Francesco Sicurello**, President of IITM/@ITIM)

- **Informatics in Biomedicine; Giancarlo Mauri** (University of Milan - Bicocca)
- **Intelligent application of Informatics in Covid lab tests analysis; Federico Cabitza** (University of Milan - Bicocca)
- **Big Data in Bio&Neuro-informatics, e-Health; Luciano Milanese** (CNR-ITB Milan)
- **Automata and intelligent agents; Nicoletta Sabadini** (University of Insubria, Como)
- **AI and Ontology; Domenico Pisanelli** (ISTC - CNR, Roma)
- **AI and mind-brain interaction; Madan Thangavelu** (Transdisciplinary University, Bangalore India, Cavendish Laboratory Univ. of Cambridge, UK), **Vincenzo Valenzi** (Dip Med. Integr. e Biofisica U. Florence)
- **Intelligent analysis of EKG signals processing; Luca Neri** (Johns Hopkins University School of Medicine), **Gian Angelo Geminiani** (Botika e Accyurate Group)

**H. 11.05 NeuroInformatics: Neurosciences and Computer Science methods and applications** (Chair. **Wojciech Glinkowski**, President of Telemedicine Society, Poland)

- **Neuromodulation in Brain and neuro-spinal injuries; Ivano Dones** (National Institute of Neurology C. Besta, Milan)
- **ICT and Neurosciences; Gianni Pellicanò** (Neuroradiologist at Careggi Hospital, Firenze, @ITIM Scientific Coord)
- **Big Data in Neurosciences; Bashiru Aremu** (Crown University International)
- **3D techniques for neurosurgery; Fabrizio Clemente, Mario Formisano, Luigi Iuppariello** (Institute of Crystallography-CNR and AORN Santobono Pausilipon, Naples)
- **Neurosignals; Asma Sbeih** (Phd in Computational Neuroscience, Master in Engineering of Information Technology, Bethlehem, Palestine)
- **Cauda equina syndrome; Wojciech Glinkowski** (Polish Telemedicine Society, "TeleOrto", Univ. of Warsaw)

**H. 13.00** (European Bruxelles Time) - **Break**

**H. 14.00 NeuroSpine: ICT, Robotics and Info-Assistive Technology** (Chair. **Antonio Oliviero**, Laboratory Head at SESCAM, Hospital Nacional de Paraplégicos, Toledo)

- **Bioengineering aspects of robot-assisted gait rehabilitation and FES for persons with spinal cord injury; Stefano Mazzoleni** (Polytechnic of Bari)
- **Cycling Functional Electric Stimulation and Robot let paraplegic walk; Giulia Stampacchia** (UO Mielolesi, Dipartimento Specialità Mediche, Azienda Ospedaliero Universitaria Pisa)
- **Exoskeletons for walking rehabilitation; Paolo Milia** (Rehab. Prosperius Institute, Umbertide)
- **A wearable video-based system for quantifying hand use in people with cervical spinal cord injury living in the community; Andrea Bandini** (KITE - Toronto Rehab, University Health Network, Toronto, ON, Canada)
- **Continuous decoding of hand motor intent by a fully implanted brain computer interface for restoration of volitional hand grasp in cervical quadriplegia; Iahn Cajigas** (Department of NeuroSurgery, University of Miami Miller School of Medicine, Jackson Memorial Hospital)
- **The effect of a comorbid spinal cord injury on cognitive gain of patients with traumatic brain injury: A matched sex-specific rehabilitation study; Tatyana Mollayeva<sup>1,2</sup>, Mitchell Sutton<sup>1</sup>, Mackenzie Hurst<sup>3</sup>, Michael Escobar<sup>2</sup>, Angela Colantonio<sup>3</sup>**  
(<sup>1</sup>Toronto Rehab-University Health Network, Ontario, <sup>2</sup>Dalla Lana School of Public Health - University of Toronto, <sup>3</sup>Rehabilitation Sciences Institute, University of Toronto, Canada)

## **H 15.45 NeuroSpine: neuromodulation, neurostimulation, neuroregeneration (Chair. Angela Colantonio, Director of Rehabilitation Institute, University of Toronto )**

- **Non invasive brain stimulation: an useful tool for measurements and a possible option for treatment; Antonio Oliviero** (SESCAN, Hospital Nacional de Paraplégicos, Toledo)
- **Artificial Intelligence and Brain Stimulation in Rehabilitation; Felipe Fregni, Kevin Pacheco Barrios** (Physical Medicine Rehabilitation Harvard Medical School, Neuromodulation Center, Spaulding Rehabilitation Hospital and Massachusetts General Hospital, Boston)
- **Avancer: Tailoring technologies for continued recovery from chronic stroke; Andrea Crema\***, **Claudia Bigoni\***, **Arnau Espinosa\*\***, **Sarah Zandliviet\***, **Christina Henneke\***, **Elena Beanato\***, **Stephanie Trznadel\*\***, **Giulia Spigoni\*\***, **Dominique Filliere\*\***, **Friedhelm Hummel\*** (\*EPFL UPHUMMEL, \*\*Wyss Center, Switzerland)
- **Refining Outcome Measurements in Humans with Spinal Cord Injury; Monica Perez** (Shirley Ryan AbilityLab Chicago, Northwestern University and Edward Jr. Hines VA Hospital)
- **Omics in neurospinal diseases; Alessandra Mezzelani** (Institute of Biomedical Technologies, CNR Milan)
- **Potential of Mesenchymal Stromal Cells to Repair the Damaged Spinal Cord; Martin Oudega** (Northwestern University, Shirley Ryan AbilityLab, Hines VA Hospital Chicago, USA)
- **Innovative nanovector mediated drug delivery for spinal cord injury; Pietro Veglianesi** (IRCCS - Pharmacological Research Institute Mario Negri, Milan)

**Martedì 17 Novembre: NeuroInformatica (IX workshop nazionale)**

## **14.05 Indirizzi di salute ed introduzione al Workshop**

**Francesco Sicurello** (IITM/@ITIM & University of Milano Bicocca)

**ore 14.15 Cervello, Neuropatologie, IoT e Telemedicina (Moder. Fausto Crapanzano, Medicina Fisica e Riabilitazione ASP, Agrigento)**

- **Neurostimolazione e funzioni cognitive; Angela Morreale** (Neurologa, Bologna)
- **Ricadute neurologiche da Covid19; Antonio Colombo** (Polo Neurologico Brianteo, Seregno)
- **Patologie neurologiche e differenze di genere; Marina Rizzo** (Ospedale Villa Sofia, Palermo)
- **Sistemi intelligenti per il monitoraggio neurologico; Lorenzo Rossano** (Università di Palermo)
- **Esperienze di Mobile-Health in pazienti MCI (declino cognitivo); Gianluca Castelnuovo** (Università Cattolica Milano & Istituto Auxologico)
- **Monitoring di Funzioni Cognitive; Federico De Salvo** (Istituto Prosperius Tiberino, Umbertide-PG)
- **TeleMediCare: Monitorare e riabilitare a casa; Alessandro Orro** (ITB- CNR Milan), **Francesco Sicurello** (IITM/@ITIM & University of Milano Bicocca)
- **Dal percorso assistenziale alla prospettiva esistenziale nelle patologie croniche in adolescenza: il Progetto eSCO; Mario Bochicchio, A. Aguglia, M. Rizzo, M.E. Cogedo, T. Luperto, M. Fracasso, M. Angelini** (Università del Salento)

**ore 16.00 Tecnologie info-assistive, robotica e Telerabilitazione (Moder. Donatella Bonaiuti, SIMFeR-Società Italiana di Medicina Fisica e Riabilitativa)**

- **Stimolazione Elettrica Funzionale e robotica applicate alla riabilitazione del cammino di persone con paraplegia; Giulia Stampacchia** (UO Mielolesi, Dipartimento Specialità Mediche, Azienda Ospedaliero Universitaria Pisana)
- **Riabilitazione tradizionale versus nuove tecnologie; Sara Lanza** (Medicina Fisica e Riabilitazione, ASP Ragusa)
- **Nuovi Servizi di Telerabilitazione; Cristina Fiorucci** (BTS SPA)
- **Telerabilitazione per neuropatie disimmuni, in particolare per la sindrome Guillain Barré; Angelo Schenone, Valeria Prada, Mehrnaz Hamedan** (IRCCS San Martino, Uni.Genova)
- **Il progetto di Teleneuroriabilitazione della Rete degli IRCCS di Neuroscienze; Paolo Cristiani, Stefania Pazzi, Andrea Stoppini** (CBIM Pavia)
- **Nuovi device biomedicali e Internet of Things in Telerabilitazione; Andrea Capra** (Casp consulting)
- **Carrozzina Intelligente; Dario Dongo** (Égalité.org)
- **Verso la Giornata Internazionale delle Persone con Disabilità (3 Dicembre); Carmelo Comisi** (Disability Pride Network)

## International Scientific Committee

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**Ridvan Alimehmeti**, Medical University Hospital, Tirana  
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**Iahn Cajigas**, NeuroSurgery University of Miami Miller School of Medicine, Jackson Memorial Hospital  
**Marco Capogrosso**, University of Friburg  
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**Grégoire Courtine**, Swiss Federal Institute of Technology Laus.  
**Andrea Crema**, Translational Neural Engineering, EPFL, Lausanne, Clinical Neuroscience, Geneva Univ. Medical School, AGO Neurotechnologies Sàrl, Geneva, Switzerland  
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**Sandro Mussa-Ivaldi**, Northwestern University, Shirley Ryan AbilityLab Chicago  
**Martin Oudega**, PTHMS&Physiology, Northwestern University, Shirley Ryan AbilityLab, Hines VA Hospital. Chicago, IL  
**Monica A. Perez**, Scientific Chair of Arms + Hands Lab at Shirley Ryan AbilityLab Chicago, Northwestern University and Research Scientist at Edward Jr. Hines VA Hospital  
**Elvira Pirondini**, École Polytechnique Fédérale, Lausanne  
**José Abad Rodríguez**, Hospital Nacional Paraplégicos, Toledo  
**Asma Hasan Sbaih**, Computational Neuroscience, Dept. of Engineering InformationTechnology, Palestine Univ., Bethlehem  
**Mateja de Leonni Stanonik**, Global\_Neurology, Tucson  
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**Yukako Yagi**, Memorial Sloan Kettering Cancer Center, NY  
**George W. Yip**, National University of Singapore, Singapore

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**Giuseppina Di Lauro**, Dedalo Solutions Pisa  
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**Alessandro Orro**, CNR-ITB Milano  
**Ferruccio Panzica**, IRCCS Istituto Neurologico C. Besta  
**Gianni Pellicanò**, Ospedale Universitario Careggi, Firenze  
**Claudio Pilati**, Unità Spinale CTO Roma  
**Domenico Pisanelli**, CNR Roma  
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**Ileana Zucchi**, ITB-CNR Milano

## Comitato Tecnico Organizzativo – Technical Organizing Committee

**Fausto Crapanzano, Paolo Cristiani, Angela Morreale, Alessandro Orro, Marina Rizzo, Andrea Bandini, Bouchra Chaouni, Andrea Crema, Alessandra Mezzelani, Asma Hasan Sbaih**

For information and participation modalities contacts: [segreteria@iitm.eu](mailto:segreteria@iitm.eu)  
[neurospine@cryptolab.net](mailto:neurospine@cryptolab.net)