

pHealth 2019



**16th International Conference on Wearable,
Micro & Nano Technologies for Personalized Health**

Genoa, 10 - 12 June 2019



PROGRAMME

Monday, 10 June 2019

8,00 - 9,00 Registration

9,00 - 10,30 Welcome and Keynote Session

Chairs: Pekka Routsalainen, *Finland*
Sergio Cerutti, *Polytechnic Milan, Italy*

Welcome Address: Sonia Viale, *Liguria Council Member for Health*
Marco Bucci, *Mayor of Genoa*
Giorgio Roth, *Dean of the Polytechnic School*
Enrico Puppo, *Director of DIBRIS*
Gianni Vernazza, *Member of the governing council of the order of Engineers*
in Genoa
Andreas Lymberis, *European Commission, DG Connect*
Bernd Blobel, *Chair SPC pHealth 2019*
Mauro Giacomini, *Chair LOC pHealth 2019*

09,45 - 10,30 **Keynote:** Healthcare Transformation Towards Personalized Medicine — Chances and Challenges
Bernd Blobel, Pekka Routsalainen - 45'

10,30 - 11,00 Coffee and Demo Break - Exhibition Area

11,00 - 13,05 Decision Support (Part I)

Chairs: Lenka Lhotská, *Czech Republic*
Carmelina Ruggiero, *University of Genoa, Italy*

11,00 - 11,25 "Translating the Results of Discrete Choice Experiments into p-/e-/m—
Health Decision Support Tools" *Jack Dowie, Mette Kjer Kaltoft - 25'*

11,25 - 11,50 "Optimization of Clinical Decision Support Based on Pearson Correlation of Attributes"
Aleksei Dudchenko, Matthias Ganzinger, Georgy Kopanitsa - 25'

11,50 - 12,15 "A Multi-Criterial Support Tool for the Multimorbidity Decision in General Practice"
Vije Kumar Rajput, Mette Kjer Kaltoft, Jack Dowie - 25'

12,15 - 12,40 "Using Neural Networks for Diagnostics in Dermatology"
Margarita Bobrova, Maksim Taranik, Georgy Kopanitsa - 25'

12,40 - 13,05 "Risk Classifications Interfere with Preference-Sensitive Decision Support"
Mette Kjer Kaltoft, Jack Dowie - 25'



13,05 - 14,00 **Lunch** (Exhibition Area)

14,00 - 14,50 **Decision Support (Part II)**

Chairs: Lenka Lhotská, *Czech Republic*
Carmelina Ruggiero, *University of Genoa, Italy*

14,00 - 14,25 “Development and Pilot Testing of a Mobile Based Patient Decision Aid for Childbirth Decision Making” *Zahra Madhani, Azam Aslani, Maryam Kasraeian - 25’*

14,25 - 14,50 “Microservice Architecture to Provide Medical Data Management for Decision Support” *Georgy Kopanitsa - 25’*

14,50 - 16,45 **Other pHealth Issues**

Chairs: Bernd Blobel, *Germany*
Roberta Gazzarata, *Healthropy, Italy*

14,50 - 15,15 “Multicompartment Hydrogels for the Local Delivery of Chemotherapeutic Drugs” *Stefania Boi, Elena Dellacasa, Nadia Rouatbi, Orietta Monticelli, Laura Pastorino - 25’*

15,15 - 15,40 “Systematic Review on Features Extracted from PPG Signal for the Detection of Atrial Fibrillation” *Nathalia A. Girón, César Millán, Diego M. López - 25’*

15,40 - 16,05 “Brain-on-a-Chip: A Human 3D Model for Clinical Application” *Lorenzo Muzzi, Sergio Martinoia, Monica Frega - 25’*

16,05 - 16,30 “End-to-End Notifications and Interactivity in Standard Based EHR Networks” *Patrick Mangesius, Dmytro Rud, Samred Saboor, Thomas Schabetsberger - 25’*

16,30 - 16,35 **Poster:** Information Technology System Including Patient Generated Health Data for Cancer Clinical Care and Research” *Norbert Maggi, Luca Douglas Magnoni, Carmelina Ruggiero, Roberta Gazzarata, Mauro Giacomini - 5’*

16,35 - 16,40 “A Web-Based Tool for a Complete Evaluation of Fragility in Senior HIV+ Patients” *Sara Mora, Alberto Venturini, Giovanni Cenderello, Daniela Fiorellino, Alberto Pilotto, Mauro Giacomini - 5’*

16,40 - 16,45 “Critical Appraisal of Mental Health Applications” *Fatameh Salehi, Zahra Arab Kermani, Fatameh Khademian, Azam Aslani- 5’*

16,45 - 17,15 **Coffee and Demo Break** (Exhibition Area)

17,15 - 19,00 **Security and Privacy, Social Factors and Environmental Context in pHealth**

Chairs: Georgy Kopanitsa, *Russia*
Victor Erokhin, *CNR, Italy*



- 17,15 - 17,45 Invited Speech: Digital pHealth - Problems and Solutions for Ethics, Trust and Privacy**
Pekka Routsalainen, Bernd Blobel - 30'
- 17,45 - 18,10 "Healthcare Staffs' Information Security Practices Towards Mitigating Data Breaches: A Literature Survey" *Prosper Kandabongee Yeng, Bian Yang, Einar Arthur Sneekenes - 25'*
- 18,10 - 18,35 "Access Control Models - A Systematic Review"
Giorgia Gazarata, Bernd Blobel - 25'
- 18,35 - 19,00 "iSupport: Building a Resilience Support Tool for Improving the Health Condition of the Patient During the Care Path" *Angelina Kouroubali, Haridimos Kondylakis, Lefteris Koumakis, George Papagiannakis, Paul Zikas, Dimitrios G. Katehakis - 25'*
- 19,00 - 20,00 **pHealth 2019 - Welcome Concerto**
Introduction to the music pieces and the authors
N. Paganini: Quartet op.4 n.3 for violin, viola, cello and guitar
L. Boccherini: Quintet G.448 for two violins, viola, cello and guitar
- 20,00 - 21,30 **Aperitif**



Tuesday, 11 June 2019

- 9,00 - 10,45 pHealth Solutions and Architectures (Part I)**
Chairs: *Inês Lopes, Portugal*
Mauro Giacomini, University of Genoa, Italy
- 9,00 - 9,30 **Invited Speech: Patient's Empowerment: an Advantage or a Burden? A Use Case in Cognitive rehabilitation**
Silvana Quaglini - 30'
- 9,30 - 9,55 "A SOA Based Solution for MDRO Surveillance and Improved Antibiotic Prescription in the Abruzzo Region" *Roberta Gazarata, Maria Eugenia Monteverde, Monica Bonetto, Vincenzo Savini, Ennio Polilli, Serena Corridoni, Alberto Costantini, Fiorenzo Santoleri, Giorgia Rapacchiale, Dalia Palmieri, Stefania Melena, Arturo Di Girolamo, Antonina Sciacca, Marco De Benedictis, Heber D'Alberto, Giacomo Galleani, Mauro Giacomini, Giustino Parruti- 25'*
- 9,55 - 10, 20 "Extraction from Medical Records" *Aleksei Dudchenko, Polina Dudchenko, Matthias Ganzinger, Georgy Kopanitsa - 25'*



- 10,20 - 10,45 “Development and Usability Evaluation of Web-Based Telerehabilitation Platform for Patients after Myocardial Infarction” *Saba Jameie, Habib Haybar, Azam Aslani, Maryam Saadat - 25'*
- 10,45 - 11,15 **Coffee and Demo Break** (Exhibition Area)
- 11,15 - 12,10 **pHealth Solutions and Architectures (Part II)**
Chairs: Inês Lopes, *Portugal*
 Mauro Giacomini, *University of Genoa, Italy*
- 11,15 - 11,40 “Affordable Personalized, Immersive VR Motor Rehabilitation System with Full Body Tracking”
Jindrich Adolf, Jaromir Dolezal, Lenka Lhotská - 25'
- 11,40 - 12,05 “Usability Testing of Two Mini-Games and One Serious Game to Educate People about Genetics” *Renato Mainetti, Serena Oliveri, Alessandra Gorini, Iaria Cutica, Gabriella Pravettoni, N. Alberto Borghese - 25'*
- 12,05 - 12,10 **Poster:** “Personalized Assistance for Patients with Chronic Diseases through Multi-Level Distributed Healthcare Process Assessment” *Liubov Elkhovskaya, Maksim Kabyshev, Anastasia Funkner, Marina Balakhontseva, Vladimir Fonin, Sergey Kovalchuk - 5'*
- 12,10 - 13,05 **Artificial Intelligence and Machine Learning (Part I)**
Chairs: Bian Yang, *Norway*
 Silvana Quaglino, *University of Pavia, Italy*
- 12,10 - 12,40 **Invited Speech:** Suitable Data Representation for Abnormal Pattern Detection in Smart Home Environment
Jiri Petnik, Lenka Lhotská - 30'
- 12,40 - 13,05 “Echocardiography Population Study in Russian Federation for 4P Medicine Using Machine Learning” *Oleg Metsker, Alexey Yakovlev, Alexandr Ilin, Sergey Kovalchuk - 25'*
- 13,05 - 14,00 **Lunch** (Exhibition Area)
- 14,30 - 16,30 **Artificial Intelligence and Machine Learning (Part II)**
Chairs: Bian Yang, *Norway*
 Silvana Quaglino, *University of Pavia, Italy*



- 14,00 - 14,25 “Characterising Physical Rehabilitation Exergames for Player Experience Evaluation Purposes” *Edwin Gamboa, Maria Trujillo - 25’*
- 14,25 - 14,50 “Estimating Systolic Blood Pressure Using Convolutional Neural Networks” *Solmaz Rastegar, Hamid Gholamhosseini, Andrew Lowe, Farhad Mehdipour, Maria Lindén - 25’*
- 14,50 - 15,15 “Graph-Based Predictive Modelling of Chronic Disease Development: Type 2 DM Case Study” *Ilya Derevitskii, Anastasia Funkner, Oleg Metsker, Sergey Kovalchuk - 25’*
- 15,15 - 15,40 “Permutation Entropy Applied to Fitbit Data: Long-Term Sleep Analysis on One Health Subject” *Elisa Salvi, Giordano Lanzola, Silvana Quaglini, Silvia Panzarosa, Riccardo Bagarotti, Laura Rodi, Cristiana Larizza, Lucia Sacchi - 25’*
- 15,40 - 16,05 “Heart Disease Dataset Clusterization” *Polina Dudchenko, Aleksei Dudchenko, Georgy Kopanitsa - 25’*
- 16,05 - 16,30 “A Comprehensive Tool for Usability Evaluation of Telehealth” *Zahra Koohjani, Azam Aslani, Sanz Abasi, Shamim Kyani - 25’*
- 16,30 - 17,00 **Coffee and Demo Break** (Exhibition Area)
- 17,00 - 18,20 Artificial Intelligence and Machine Learning (Part III)**
Chairs: Bian Yang, *Norway*
 Silvana Quaglini, *University of Pavia, Italy*
- 17,00 - 17,25 “Using Machine Learning for Personalized Patient Adherence Level Determination” *Maksim Taranik, Georgy Kopanitsa - 25’*
- 17,25 - 17,50 “Dynamic Features Impact on the Quality of Chronic Heart Failure Predictive Modelling” *Ksenia Balabaeva, Sergey Kovalchuk, Oleg Metsker - 25’*
- 17,50 - 18,15 “NASA RTLX as a Novel Assessment for Determining Cognitive Load and User Acceptance of Expert and User-Based Evaluation Methods Exemplified Through a mHealth Diabetes Self-Management Application Evaluation” *Mattias Georgsson - 25’*
- 18,15 - 18,20 **Poster:** “Ischemic Stroke: Treatments to Improve Neuronal Functional Recovery *in vitro*” *Sara Pires Monteiro, Joana Covelo, Marloes Levers, Gerco Hassink, Joost le Feber, Monica Frega - 5’*
- 20,00 - 22,30 **Gala Dinner at Museo Diocesano . Via Tommaso Reggio, 20r**



Wednesday, 12 June 2019

09,00 - 11,00 ALCOTRA Project - ANTEA Workshop (Exhibition Area)

09,00 - 09,20 The Interreg Alcotra Antea project for the development of the emerging chain of edible flowers

Barbara Ruffoni

09,20 - 09,40 The involvement of the University of Genoa in Antea

Angela Bisio

09,40 - 10,00 Edible flowers and safety: characterization of the microbiological and toxicological profile

Marco Milanese, Anna Schito, Giuliana Drava

10,00 - 10,20 Edible flowers as source of novel functional food

Ilaria Marchioni

10,20 - 10,40 Active food packaging based on biopolymeric nanocomposite films

Laura Pastorino

10,40 - 11,00 ANTEA web: a tool to promote the project and to enhance partners' interaction

Elena Lazarova

11,00 - 11,30 Coffee and Demo Break (Exhibition Area)

11,30 - 13,15 Wearable Technologies for pHealth (Part I)

Chairs: Diego M. López, *Colombia*

Laura Pastorino, *University of Genoa, Italy*

11,30 - 12,00 **Invited Speech:** Organic Memristive Device: Towards Synapse Prosthesis

Victor Erokhin - 30'

12,00 - 12,25 "Obesity Risk Assessment Model Using Wearable Technology with Personalized Activity, Calorie Expenditure and Health Profile"

Hamid Gholamhosseini, Mirza Baig, Joseph Maratas, Farhaan Mirza, Maria Lindén - 25'

12,25 - 12,50 "In-Vehicle Respiratory Rate Estimating Using Accelerometers"

Ju Wang, Joana M. Warnecke, Thomas M. Deserno - 25'

12,50 - 13,15 "Wearable Kinematic Monitoring System Based on Piezocapacitive Sensors"

Gabriele Frediani, Bianca Botondi, Lorenzo Quartini, Giovanni Zonfrillo, Leonardo Bocchi, Federico Carpi - 25'

13,15 - 14,10 Lunch (Exhibition Area)



14,10 - 15,30 Wearable Technologies for pHealth (Part II)

Chairs: Diego M. López, *Colombia*
Laura Pastorino, *University of Genoa, Italy*

14,10 - 14,35 “Smartphone-Based Remote Monitoring Solution for Heart Failure Patients”
Inês Lopes, Filipe Sousa, Emilia Moreira, José Cardoso - 25’

14,35 - 15,00 “Adaptation Component based on Wearable Technology to Support Personalized Tracking of Physical Activity in Children” *Ana Díaz, Santiago Pérez, Diego M. López - 25’*

15,00 - 15,25 “A Novel Medical Device for Early Detection of Melanoma”
Shereen Afffi, Hamid Gholamhosseini, Roopak Sinha, Maria Lindén - 25’

15,25 - 15,30 **Poster:** “Carried Weight Affects Walking Speed Monitoring with the IngVal System”
Per Anders Rickard Hellstrom, Mia Folke - 5’

15,30 - 16,15 Closing Ceremony

Students’ Best Paper Award

Next pHealth Event

Closing remark of SPC and LOC



COMUNE DI GENOVA



REGIONE LIGURIA