

Technical Committee on Healthcare and Medical Systems (TC-HMS)

**Second semi-annual meeting 2017
CDC 2017 Melbourne**

**Thursday, December 14, 2017
12:00pm – 1:30pm
Room: 108**

Agenda

- **Activities report June-December, 2017**
- **Future TC meetings**
- **Reaching out to PhD students**
- **Wikipedia project**
- **TC web site**
- **Developing special issues of journals**
- **Invited sessions for CDC18**
- **Future directions**

Preliminaries

- Introduction of participants
- Collect attendance
- Change of TC Chair

Activities report June-December, 2017

Special Issue: System identification and control in biomedical systems.

IEEE Transactions on Control Systems Technology, Lead Editor: Guillaume Mercere

- **New and final deadline March 1, 2018**
- Consider submitting papers and publicize the effort

Title: “Control and data-driven modeling in biomedicine”,

Daniel Rivera, Caterina Scoglio, and Alexander Medvedev, members of TC HMV
Guest Editors

Sponsored by the IEEE CSS Technical Committees on

- Healthcare and Medical Systems,
- Systems Biology,
- System Identification and Adaptive Control.

Activities report June-December 2017

CDC 201, invited sessions

- 1) *Dynamics in neuroscience: modeling, estimation, and control*. Organizers: Alexander Medvedev and Warren Dixon; highlights the role of dynamics systems in neural system
- 2) *Individualization and optimization of therapies*. Organizers: Levente Kovacs, Alexander Medvedev, and Pasquale Palumbo; aims to give an update of the latest developments in individualization and optimization therapies in a number of medical fields.
- 3) *Systems Medicine*. Organizers: Ryan Zurakowski, Pablo S. Rivadene Esteban A. Hernandez-Vargas; aims to overcome competitive barriers and produce a roadmap for systems medicine in the frame of control engineering.

Activities June-December, 2017

- ACC 2018 invited sessions?

Activities during June-December, 2017

Column for the IEEE Control System Magazine:

- Technical Committee on Healthcare and Medical Systems [Technical Activities]C Scoglio, A Medvedev, IEEE Control Systems 37 (5), 15-17, Publication date 2017/10

Future TC meetings

- Time for TC meetings
 - Breakfast?
 - Lunch?
 - Dinner?
- Joint meetings with other TCs
 - Which ones?

Reaching out to PhD students

- Invite PhD students to TC meetings
- Student members of TC HMS

Wikipedia project

Modeling, control, and estimation in medicine and healthcare

- Defining the scope of TC HMS
 - Closed-loop drug administration
 - Closed-loop anesthesia
 - Artificial pancreas
 - Model-based treatment optimization
 - Neuromodulation
 - Telemedicine
- Editing and creating articles

TC web site

What to put there?

- News
- Documents
- Vacancies
- Calls for contributions
- Recent papers and books
- Links to videos

Special issues of journals

- Which journals to approach?
- Suitable topics?
 - IoT for medicine
 - Brain as a control system
 - Biomechanics
- Cooperation with other TCs?

Invited sessions for CDC18

- Deadline invited sessions: March 10, 2018
- Deadline for papers: March 20, 2018
- Suitable topics?
- How to connect invited sessions to TC HMS:
 - Sending out calls?
 - Putting information on the TC web site?

Future directions

Relevant IEEE initiatives to cooperate with:

- IEEE Brain
- IEEE IoT
- IEEE Big Data
- IEEE Cyber security

Next meeting -CDC 2018 Miami Beach

- Minutes of this meeting will be available on the TC webpage soon
- Other activities likely to be reported?