

# IEEE Control Systems Society Technical Committee on Medical and Health Care Systems Report

Submitted by Daniel E. Rivera, Chair  
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The IEEE CSS Technical Committee on Medical and Healthcare Systems (TC-MHCS) is one of the most recently established technical committees in CSS, having become effective on January 1, 2013. I am pleased to report on activities undertaken by the technical committee during the past six months (December 2013 – May 2014) as well as some planned activities for the future.

## **TC membership update:**

The TC has issued an open call to CSS members to join as founding members. As of the date of this report, 37 CSS members have responded, with profiles and member information included in our TC website. We expect this number to continue to grow as information regarding the existence of the TC becomes more widely disseminated, and as upcoming conferences such as the 2014 ACC and IEEE CDC provide opportunities for outreach and recruitment.

## **Activities during the reporting period / upcoming activities:**

1. *TC-sponsored activities at the 52<sup>nd</sup> IEEE CDC in Florence.*

Two activities proposed by the TC and organized in conjunction with the TC for System Identification and Adaptive Control (TC-SIAC; led by Diego Regruto) were offered at the Florence CDC. One was an invited session on PK/PD modeling for decision support in healthcare (**TuA04**, Teresa Mendonça, Universidade do Porto and Alexander Medvedev, Uppsala University, organizers). The second was a pre-conference workshop entitled, “Recent advances in semi-algebraic geometry: applications in system identification, estimation and filtering” (Diego Regruto and Daniel Rivera, organizers).

The TC held a meeting during the 52<sup>nd</sup> CDC, on Tuesday, December 10. There were 18 attendees at this meeting.

2. *TC-sponsored activities during the 2014 ACC in Portland.*

Two invited sessions organized in conjunction with the TC for Manufacturing Automation and Robotic Control (F. Zhang, chair) will be held during the 2014 ACC in Portland. The first is, “**FrA12**, Applications of Control Theory in Medical Rehabilitation: Assistive Devices,” while the second is “**FrB12**, Applications of Control Theory in Medical Rehabilitation: Therapeutics.” The session organizers are R. Gregg, D.E. Rivera, and F. Zhang.

The TC will hold a meeting during the 2014 ACC from 4 – 5 pm on Wednesday, June 4<sup>th</sup>; the location is to be announced.

3. *TC-sponsored activities during the 53<sup>rd</sup> IEEE CDC in Los Angeles.*

In conjunction with Diego Regruto (chair of the TC for System Identification and Adaptive Control) and TC member Frank Doyle, the TC is currently helping to organize a pre-conference workshop entitled, “Recent advances in modeling and control for diabetes treatment.” The workshop brings together leading academics along with industrial speakers to provide some up-to-date information on this important topic.

This concludes our first semi-annual report for 2014. Looking to the future, the TC seeks to 1) create greater awareness and recruit more members, 2) write an article for the *IEEE Control System Magazine* introducing the TC to the general CSM membership, and 3) pursue high profile activities such as workshop organization and Special Issues of IEEE CSS journals.