Welcome to the 2nd International Workshop on Software Engineering for Smart Cyber-Physical Systems (SEsCPS 2016), which is held in conjunction with the 38th International Conference on Software Engineering (ICSE 2016) in Austin, Texas, USA.

Recent years have seen a growing interest in Cyber-Physical Systems (CPS), which are distributed systems of systems that control the physical environment by means of collaborative sensing and actuating. We observe a trend to equip these systems with more “smartness” to deal with emergent situations, be more efficient and tolerant to threats, etc. Such “Smart” Cyber-Physical Systems (sCPS) heavily rely on software to provide the embedded intelligence to the extent that software becomes the most important and most complex constituent. This calls for systematic software engineering (SE) of sCPS, not only to address individual SE challenges, but to provide synergistic solutions that are resource efficient and respect the sCPS specifics, such as mobility, limited connectivity, partially uncertain environment, etc.

Building upon the success of the first edition of SEsCPS (at ICSE 2015), the workshop aims at bringing together academics and practitioners from several disciplines with the overall objectives: (i) to increase the understanding of problems of software engineering for sCPS, (ii) to study the underlying foundational principles for engineering sCPS, and (iii) to identify and define promising software engineering solutions for sCPS.

Based on the interest shown by participants at the previous edition of the workshop and research interest shown at related venues, the special themes of SEsCPS’16 are: (i) alignment of disciplines for engineering sCPS, (ii) uncertainty and human factors, and (iii) reference problems. Around these themes, the workshop strives to build understanding of sCPS and provide a basis for addressing the SE challenges brought by sCPS in a holistic manner.

This year, SEsCPS attracted 17 submission, out of which 7 were accepted as full papers (7 pages) and 2 as position papers (4 pages). Each paper went through a careful review process, receiving 3 reviews. The accepted submissions provide a rich coverage of sCPS SE topics including: formal modelling, verification and validation, planning, security, safety, development frameworks, autonomy, and coordination.

The program of the workshop is set up in a highly interactive manner. After a keynote, the program consists of presentations and discussions centered on the three guiding research questions: (i) What are the promising synergies of SE with other disciplines in the domain of sCPS? (ii) What are the ways to handle uncertainty in the development and operation of sCPS? (iii) What are suitable model problems that can be used in the evaluation of different sCPS solutions? Similar to last year, the plan is to consolidate the insights and results derived at the workshop in a joint report that will be made available after the workshop.

The success and quality of a workshop such as SEsCPS depends heavily on active involvement of all the participants. We have been lucky to have highly qualified researchers and practitioners from the areas of software engineering and cyber-physical systems in the program committee. We would like to thank all the members of the program committee for their thorough work in reviewing the submissions and providing valuable feedback to the authors. Further, we would like to thank ICSE Workshop Co-Chairs – Marija Mikic and Mauro Pezzè – for their excellent organization and handling of all the agenda around ICSE workshops. Our appreciation also goes to the ICSE Workshops Committee. Last but not least, we
would like to thank the authors and participants without whose contributions SEsCPS 2016 would not be possible.

We hope that your time at SEsCPS 2016 will be productive and enjoyable and that you will continue to support SEsCPS in future years with your submissions and attendance.

Tomas Bures, Bradley Schmerl, Eduardo Tovar, and Danny Weyns
SEsCPS 2016 Co-Chairs