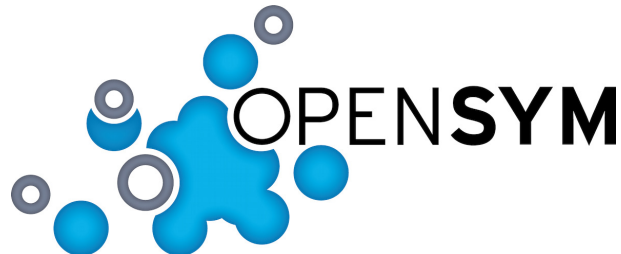


**Proceedings of
the 16th International Symposium on
Open Collaboration**



**August 26–27, 2020
Online**

General Chair	Gregorio Robles, Universidad Rey Juan Carlos, Spain
Program Chairs	Klaas-Jan Stol, University College Cork, Ireland Xiaofeng Wang, Free University of Bolzen-Bolzano, Italy
Journal First Co-Chairs	Jesús M. González Barahona, Universidad Rey Juan Carlos, Spain Björn Lundell, University of Skövde, Sweden
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General Chair's Foreword

Welcome to OpenSym 2020, the 16th International Symposium on Open Collaboration which is organised 26th and 27th August. Given the current global COVID-19 crisis, we are organizing this year's OpenSym virtually and not in Madrid as it was originally planned.

Nonetheless, I am very pleased to host the premier conference on open collaboration research and practice and thereby promote stimulating discussions and dissemination of results in many areas of open collaboration, including open source, open data, open science, open education, wikis and related social media, Wikipedia, and IT-driven open innovation research.

Open collaboration is egalitarian (everyone can join, no principled or artificial barriers to participation exist), meritocratic (decisions and status are merit-based rather than imposed) and self-organizing (processes adapt to people rather than people adapt to pre-defined processes)¹.

Many people have contributed greatly to make OpenSym 2020 happen and we owe them a great deal of thanks. We are in particular very pleased to provide an excellent keynote by Rishab A. Ghosh.

We are very grateful to all the researchers and practitioners that contributed to OpenSym 2020. The two program chairs, Xiaofeng Wang and Klaas-Jan Stol, the two New Ideas and Emerging Research track chairs, Valentina Lenarduzzi and Javier Arroyo-Gallardo, the two Journal First chairs, Björn Lundell and Jesús M. González Barahona, and the two Doctoral Consortium chairs, Andrea Capiluppi and Claudia Müller-Birn, have made considerable contributions in time and effort for the conference program, especially in this situation, since we had to move a traditional conference to a virtual environment.

Sincere thanks go to Simon Butler for his considerable efforts as proceedings chair, to Antonio Balderas for having the website and social media always up-to-date, and again to Jesús M. González Barahona for his commitment as organisation chair. A special thanks goes to Dirk Riehle for his support and encouragement! We also want to thank all members of the Program Committee, the external reviewers, and all participants that contributed to OpenSym 2020.

Finally, we are also very grateful for the financial support from LERO (The Irish Software Research Centre) and the Universidad Rey Juan Carlos.

Without the aforementioned valuable contributions, OpenSym 2020 would never have happened!

Gregorio Robles
General Chair, OpenSym 2020

¹<https://opensym.org/about-us/definition/>

Program Chairs' Foreword

We welcome you to the 16th International Symposium on Open Collaboration (OpenSym 2020) held on August 26-27th. As a premier conference in the field, OpenSym provides an excellent forum for reporting the latest developments in open collaboration research and practice, including open source, open data, open science, open education, wikis and related social media, Wikipedia, and IT-driven open innovation research.

OpenSym 2020 was originally scheduled to take place in the wonderful city of Madrid, Spain. As the Covid-19 pandemic has struck, OpenSym 2020 has, like all other conferences during this period, become a virtual event. In this dramatic shift of ways of working that has affected everybody around the globe, OpenSym as a venue for discussing research on collaboration has perhaps become even more important than ever. Co-located and face-to-face collaboration is now no longer something we can take for granted. Forced by the turn of events in 2020, it has become even more critical to leverage the lessons from open source collaboration in everything we do. The changes that everybody has had to accept are likely to impact our daily lives in the foreseeable future. We hope that the OpenSym conference can play its role in learning how to improve open collaborations for the wellbeing of all.

We are pleased to present the proceedings of the conference as its published record, which include 12 Full Research Papers and 2 New Ideas and Emerging Research Papers. The conference program represents the efforts of many people. We want to express our gratitude to the members of the Program Committee and the external reviewers for their hard work in reviewing submissions. We also thank our invited keynote speaker for sharing his insights with us. The conference chair, Gregorio Robles also helped us out in many ways, for which we are grateful. The paper submission and reviewing process was managed using the EasyChair system. We also acknowledge the fantastic work that Simon Butler, our Proceedings Chair, did in managing the conference proceedings. Finally, the conference would not be possible without the excellent papers contributed by authors. We thank all the authors for their contributions and their participation in OpenSym 2020! We feel honoured and privileged to serve as Program Chairs for the conference and hope that this program will further stimulate research in all areas of open collaboration.

Klaas-Jan Stol and Xiaofeng Wang
Program Co-Chairs, OpenSym 2020

Javier Arroyo Gallardo and Valentina Lenarduzzi
NIER Track Co-Chairs, OpenSym 2020

Organization

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New Ideas and Emerging Results Track Co-Chairs	Javier Arroyo, Universidad Complutense de Madrid, Spain Valentina Lenarduzzi, LUT University, Finland
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