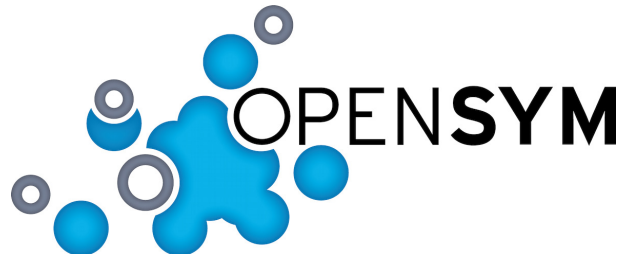


**Proceedings of
the 17th International Symposium on
Open Collaboration**



**September 15–17, 2021
Online**

General Chair	Gregorio Robles, Universidad Rey Juan Carlos, Spain
Program Chairs	Javier Arroyo, Universidad Complutense de Madrid, Spain Ann Barcomb, University of Calgary, Canada Kuljit Kaur Chahal, Guru Nanak Dev University, India Sulayman Sowe, Universität Bayreuth, Germany
Journal First Chair	Xiaofeng Wang, Free University of Bolzen-Bolzano, Italy
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General Chair's Foreword

Welcome to OpenSym 2021, the 17th International Symposium on Open Collaboration which is organised 15th to 17th September. Given the still on-going global COVID-19 crisis, we are organizing this year's OpenSym again 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 2021 happen and we owe them a great deal of thanks.

We are very grateful to all the researchers and practitioners that contributed to OpenSym 2021. The four program co-chairs, Ann Barcomb, Javier Arroyo, Kuljit Kaur Chahal, and Sulayman Sowe 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 website, and social media always up-to-date, Amit Kumar Verma, Hernan Astudillo, Pablo Cruz Navea, Stefan Gruner, and S. R. S. Iyengar, our Regional Publicity co-chairs, and 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 2021.

Finally, we are also very grateful for the financial support the Universidad Rey Juan Carlos.

Without the aforementioned valuable contributions, OpenSym 2021 would never have happened!

Gregorio Robles
General Chair, OpenSym 2021

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

Program Chairs' Foreword

We welcome you to the 17th International Symposium on Open Collaboration (OpenSym 2021), held online on 15–17 September 2021. As a premier conference in the field, OpenSym 2021 provides an excellent forum for reporting the latest developments on 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.

In 2020, OpenSym, like many other conferences, was forced to make a sudden shift to a virtual event due to the COVID-19 pandemic. In 2021, we planned a hybrid conference, which would be held both online and in Madrid. However, the circumstances forced us again to celebrate it only online.

We have had our ideas about conferences challenged and reshaped in the last year and a half, and although there have been many difficulties, we have also had an opportunity to reflect on how events can be organized to address the differing needs of a diverse group of participants. We are inspired by the way geographically distributed collaboration teams work, and hope that the OpenSym conference can play a part in sharing knowledge of the many different ways communities can come together.

We are pleased to present the proceedings of the conference as its published record. We received 24 submissions and we selected 13 Full Research Papers, 1 Doctoral Consortium Paper and 3 Experience Reports. Research papers followed a double-blind peer review and are published as conference proceedings by the ACM, while the papers from the other tracks were single-blind peer-reviewed and are included in non-archival companion proceedings.

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 the submissions. The conference chair, Gregorio Robles also helped us 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 2021! We feel honoured and privileged to serve as Program Chairs for the conference and hope that this program will further stimulate exciting research in all areas of open collaboration.

Javier Arroyo, Ann Barcomb, Kuljit Chahal, and Sulayman Sowe
Program Co-Chairs, OpenSym 2021

Organization

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